An Incident Reporting System as a Tool in the Management of Work-Related Violence

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(continued)

ABSTRACT

This thesis concerns the gathering, interpretation and use of information pertaining to work-related violence as a risk to the health and safety of staff. It considers incident reporting systems in particular, and describes work carried out to extend the usefulness of such a system operating within the licensed retail trade.

Information obtained from the system falls into two categories. First, information about the reporting system itself includes the benefits and limitations of incident reporting as a diagnostic tool for the occurrence of violence, and the use of complementary methods to enhance its effectiveness; the design of a report form that elicits more detail than is required by national reporting; the evolution of a flexible and easily expandable coding scheme; and the usefulness of innovative pathway and survival techniques in the treatment of the violent incident as a developing situation. Second, information about violent incidents within licensed premises concerns characteristics of reported incidents; the dynamic nature of incidents; common pathways through violent incidents; the relation of the outcomes of incidents to other features; the timing of incidents; and the perceived seriousness of the reported incidents.

Key findings include the role of every-day situations and ordinary objects used as weapons; the pivotal importance of intervention by staff, particularly in challenging customer misbehaviour; a system memory effect that increases the likelihood of a further incident occurring during the days and weeks following a reported incident at the same premises; and the variety of features that contribute to the seriousness rating given to an incident by the members of staff involved.

The methods and findings have implications for academic research, for the organisational management of work-related violence and for the day-to-day management of licensed premises. Primarily, they can be used in devising strategies to reduce the risks to staff.

Keywords: Work-related violence; incident reporting; licensed premises; health and safety; risk assessment; risk management; psychosocial hazards..

ACKNOWLEDGEMENTS

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I appreciate the long-term financial support provided by Allied Domecq Retailing Ltd and I thank the staff who have provided the data about violent incidents on which this thesis is based.

Above all, I thank Chris, my husband, for immense long-suffering, always being there, and generally keeping body and soul together. My sons, Tim and Edd, have also shown great understanding and tolerance of their less than perfect mother, giving me much appreciated encouragement.

Finally, I remember, with great love, my parents, Bob and Dorothy Oswald, who were unfailingly supportive and interested in my education and work. It is an immense sadness that neither of them is here to witness the completion of this thesis.

PREFACE

This thesis considers violence as a health and safety issue for people at work, in particular for licensees and staff working in public houses and other licensed premises. It considers the usefulness of an incident reporting system as a tool in the control and management of work-related violence. It challenges the conventional use of such a system just as a device to monitor the number of incidents that occur in an organisation and to provide simple descriptive statistics. It argues not only that this treatment of a reporting system may provide inadequate information about incident numbers but also that it is a waste of a valuable resource. Careful design of the system and innovative methods of analysis, which regard each incident as a dynamic process, can produce high quality information regarding the nature and timing of incidents. Such information, combined with theoretical understanding of the influences affecting aggressive interactions, provides invaluable input to the design of effective intervention strategies to reduce the occurrence of violence.

The aims of the work described here fell into two categories. The first concerned the reporting system itself. The aims here were to demonstrate the benefits and limitations of an operational violent incident reporting system, and to explore ways of extending the potential usefulness of such a system. The second set of aims concerned the provision of information about violent incidents within public houses. Here the aims were to produce accessible results for the organisation on which measures to control the risk to licensees could reliably be based, and to further the treatment of violent incidents as developing situations.

An important aspect of the research is this interdependence of the academic study of violent incidents with the provision of practically applicable information within a commercially operational setting. The motivation for carrying out such a study is to be effective in helping to reduce the real risks that people face from aggression and violence in the course of their work. The study forms part of a larger body of research into work-related violence carried out by the Social and Environmental Psychology (SEP) Group in the Institute of Work, Health & Organisations at the University of Nottingham.

The thesis relates to the Keeping Pubs Peaceful Incident Reporting System (KPP IRS) which operated within Allied Domecq Retailing (ADR) between 1988 and 1998 and which pre-dated, by 8 years, the national requirement for the reporting and recording of work-related violent incidents. It examines information obtained from the system during that time, and considers subsidiary studies carried out to complement the system and enhance its effectiveness. It then describes analyses that were carried out to explore the timing and nature of the reported incidents using both standard techniques and methods borrowed from other areas of science. These non-standard methods included log survival analysis and the adaptation of sequence analysis to produce an innovative method of modelling pathways through incidents.

Chapter 1 outlines the treatment of work-related violence as a health and safety issue, and the rationale and theoretical background underpinning the research. It then discusses both work-related violence and violence in licensed premises as reported in the academic and professional literature. Chapter 2 considers the range of methods available for gathering information about violent incidents, focusing particularly on incident reporting systems and exploring their benefits and limitations.

Reporting systems essentially provide three types of information about violent incidents occurring within an organisation: the *numbers* of incidents, the *nature* of incidents and the *timing* of incidents. Chapter 3, after briefly describing the KPP IRS, presents information about the numbers of reported incidents and considers how these reflect the numbers of incidents that actually occurred. It considers incident reporting as a diagnostic tool and describes two other studies carried out to explore incident occurrence and reporting. Finally, it examines the effect of the seriousness of incidents on reporting behaviour.

Chapters 4 briefly describes the structure of the incident report form used to gather information about the violent incidents, then discusses the nature and distribution of incident characteristics extracted from the reports. It introduces the treatment of each incident as a developing situation, in accordance with theoretical considerations. Chapter 5 relates the physical outcomes, in terms of injury and damage, to events and features of the incident using hierarchical multiple regression. A similar analysis relates the seriousness of incidents, as rated by the licensees involved, to the same

events and features plus the physical outcomes. Other influences affecting perceived seriousness are also extracted from the incident reports. Chapter 6 describes how treating the incident as a dynamic process in this way led to the development of the innovative technique of logical pathway modelling, which identifies and quantifies frequently occurring sequences of events in reported incidents.

Chapter 7 considers the timing of the reported violent incidents, particularly the relative timing of successive reported incidents at the same premises. A log survival technique was used to examine the rate of reoccurrence of incidents over time, while survival analysis related survival time to incident characteristics. Together these revealed a system memory effect showing an increased likelihood of further incidents occurring during the first 4 to 5 weeks following a reported incident, and particularly during the first 3 to 4 days. This extended the treatment of the violent incident as a dynamic process with discrete beginning and ending by identifying an influence on future events at the premises.

Chapter 8 summarises the findings from the previous chapters and considers further their relevance to the management of work-related violence. It draws conclusions about the usefulness of the incident reporting system and makes recommendations based on these conclusions. It considers the implications for those working in licensed premises, for organisations in general and for academic research.

PUBLICATIONS

The research has produced a number of published academic papers and book chapters. These are listed in Appendix 1. Although these papers are multi-authored, they have been written predominantly by the author and report research that was carried out by her. The SEP Group has always included all members of the team participating in the research as authors in papers emanating from that research. This reflects the collectively agreed policy within I-WHO.

The author had full responsibility for developing the KPP IRS over the seven years 1991 to 1998. Where research described in this thesis was carried out largely by other members of the SEP Group, this is acknowledged within the text, as in Section 3.1.3 and Appendix 2.

THE SOCIAL AND ENVIRONMENTAL PSYCHOLOGY GROUP

The Social and Environmental Psychology Group originated, around 1985, within the Stress Research Group in the Department of Psychology at the University of Nottingham. It has since undergone a number of changes of name and location, now being part of the Institute of Work, Health and Organisations, situated within the University of Nottingham Business School. During all that time, the group has been under the guidance of Professor Tom Cox CBE and, since 1991, it has been managed by Dr Phil Leather.

1985-1989	Stress Research Group, Department of Psychology
1989-1998	Violence Research Group, Centre for Organizational Health and Development, Department of Psychology
1998-1999	Violence and Environmental Research Group, Centre for Organizational Health and Development, School of Psychology
1999-2000	Social and Environmental Psychology Group, Institute of Work, Health and Organisations, University of Nottingham Business School

ABBREVIATIONS AND EXPLANATION OF TERMS

ADI	Allied Domecq Inns
ADL	Allied Domecq Leisure
ADR	Allied Domecq Retailing; previously Allied Breweries (to 1993) then Allied-Lyons Retailing (1993-1994)
BCS	British Crime Survey
Cal/OSHA	California Occupational Safety and Health Administration
COHD	Centre for Organizational Health and Development (now Institute of Work, Health and Organisations)
EC	European Commission
HSE	Health and Safety Executive (U.K.)
IRC	Incident Report Centre at the University of Nottingham
I-WHO	Institute of Work, Health and Organisations (incorporating the Centre for Organizational Health and Development)
KPP	Keeping Pubs Peaceful project developed to manage violence within the managed houses of Allied Domecq Retailing
KPP IRF	Keeping Pubs Peaceful Incident Report Form
KPP IRS	Keeping Pubs Peaceful Incident Reporting System
NIOSH	National Institute of Safety and Health (U.S.A.)
OSHA	Occupational Safety and Health Administration (U.S.A.)
PDSD	Prolonged duress stress disorder
PTSD	Post traumatic stress disorder
RIDDOR 95	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
SEP Group	Social and Environmental Psychology Group, Institute of Work, Health and Organisations, University of Nottingham

The terms "licensed premises", "licensed house" and "public house" are used interchangeably through this thesis to describe premises that are licensed to sell alcoholic drinks for consumption on the premises, and for whom this is their core business. These cover premises described as "pubs", "inns", "taverns", "bars", "hotels", "nightclubs", "wine bars", etc.

CHAPTER 1: CONSIDERING VIOLENCE AS A HEALTH AND SAFETY ISSUE

The work reported in this thesis concerns the use of an incident reporting system as a tool in the management of work-related violence using a risk assessment and risk reduction process as recommended in health and safety legislation and guidance. The particular reporting system under consideration was established within the retailing arm of a large national brewery, gathering reports of incidents of aggression and violence that occurred within public houses and other licensed premises. This chapter provides the background to the research in terms of good practice in health and safety management, the general strategy and rationale adopted in the work, the nature and extent of work-related violence, and previous research concerning violence in licensed premises.

1.1 HEALTH AND SAFETY FRAMEWORK

Work-related violence has received increasing attention, over the past decade, from health and safety bodies such as the Health and Safety Executive (HSE), in the U.K., and the Occupational Safety and Health Administration (OSHA) and the National Institute of Safety and Health (NIOSH), in the U.S. These and other government agencies have been active in producing guidelines for the prevention of violence to staff since the mid 1980s, covering staff in general (HSE, 1996a; NIOSH, 1996; Poyner & Warne, 1986, 1988) and specific sectors at risk. These include the healthcare and social services (Department of Health and Social Security, 1988; Health Services Advisory Committee, 1987, 1997; OSHA 1996a), education (Education Services Advisory Committee, 1997), banks and building societies (HSE, 1993a), the retail sector (HSE, 1995a; OSHA, 1996b), broadcasting (HSE, 1996b) and community work (OSHA, 1996c). Such activity indicates a growing awareness of violence at work at a national level within both the U.K. and the U.S.

In the past, violence has been regarded as the province of security professionals, the police and the criminal justice system. More recently, however, it is also being seen as a hazard that should be assessed and managed by organisations in order to provide a safe workplace for their

employees (Cox & Leather, 1994; Goerth, 1988; Nigro & Waugh, 1996) as required under legislation such as the *Occupational Safety and Health Act 1970* in the U.S., and the *Health and Safety at Work etc. Act 1974* and the *Management of Health and Safety at Work Regulations 1999* (Health & Safety Commission, 2000) in the U.K.

The *Management of Health and Safety at Work Regulations 1999* operationalise European Community legislation within the U.K. They require that employers assess all risks to the health and safety of their employees, identify the precautionary measures needed, make arrangements for the effective management of these precautions, and provide information and training for employees. The legislation does not mention particular risks, but requires assessment of all potential risks, which undoubtedly include risk from the occurrence of violent incidents. However, the *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995* (RIDDOR 95) specifically include violence done to a person at work as an "accident" that must be reported to the HSE, or the local authority, if it results in certain injuries. These regulations confirmed work-related violence as an issue within the domain of health and safety management, as discussed by Beale, Cox and Leather (1996).

As a health and safety issue work-related violence can be dealt with using the risk management framework that has proved effective for other risks to the safety and health of workers (Cox & Cox, 1993). Risk management has two major components, risk assessment and risk reduction, which comprises prevention, timely reaction and rehabilitation (Cox & Leather, 1994). A third component consists of checking the effectiveness of measures put in place to reduce the risk.

Violence as a risk to health and safety

In health and safety terms, then, violence can be thought of as posing a risk as does any other physical hazard in the workplace. The risk from a hazard can be considered as a function of exposure to the hazardous situation and the magnitude of the harm caused (Cox and Cox, 1993). If we apply this to violence (Beale, Lawrence, Smewing & Cox, 1999), bearing in mind that most people have the potential to act violently given the wrong combination of circumstances, the hazard can be regarded as any individual, the hazardous situation as interpersonal conflict and the harm as including

physical and psychological injury, property damage and financial cost. Thus the risk from violence can be regarded as a function of four factors:

- the frequency of conflict situations,
- the duration of conflict situations,
- the likelihood of the individuals involved acting in a violent manner, and
- the magnitude of the harm caused.

Strategies to reduce the risk fall into three types targeted at prevention before an incident occurs, timely reaction when a conflict situation arises and rehabilitation after an incident has occurred (Cox & Leather, 1994). Preventative strategies attempt to reduce both the frequency with which conflict situations occur and the likelihood of the individuals concerned reacting violently, which can be considered as a combination of the individuals' general tendency to act in a violent manner and their experiences immediately prior to, or particularly relevant to, the conflict situation.

Timely reactive strategies concentrate on methods of resolving quickly and peacefully any conflict that arises, in such a way that satisfies both parties and reduces the likelihood of people parting with a grievance. If such attempts at resolution are not successful and violence occurs, either immediately or later as retaliatory action, then further reactive strategies include emergency action procedures that aim to finish the violent episode quickly and effectively and to limit the magnitude of the harm caused.

Rehabilitative strategies are designed to minimise the physical and psychological harm and to promote recovery. Such strategies include providing access to medical assistance, provision for trauma counselling and general support from the work team and the organisation.

1.2 GENERAL STRATEGY

The approach of the SEP Group integrates a view of violence as a risk to health and safety with a theoretical view of the processes involved in individual violent incidents. It is based on three key concepts that have been combined over the course of its work on violence.

1. A violent incident comprises a *developing situation* consisting of a series of *escalating steps*. Understanding of the influences

affecting these steps can be employed to create conditions that lessen the likelihood of the escalation occurring.

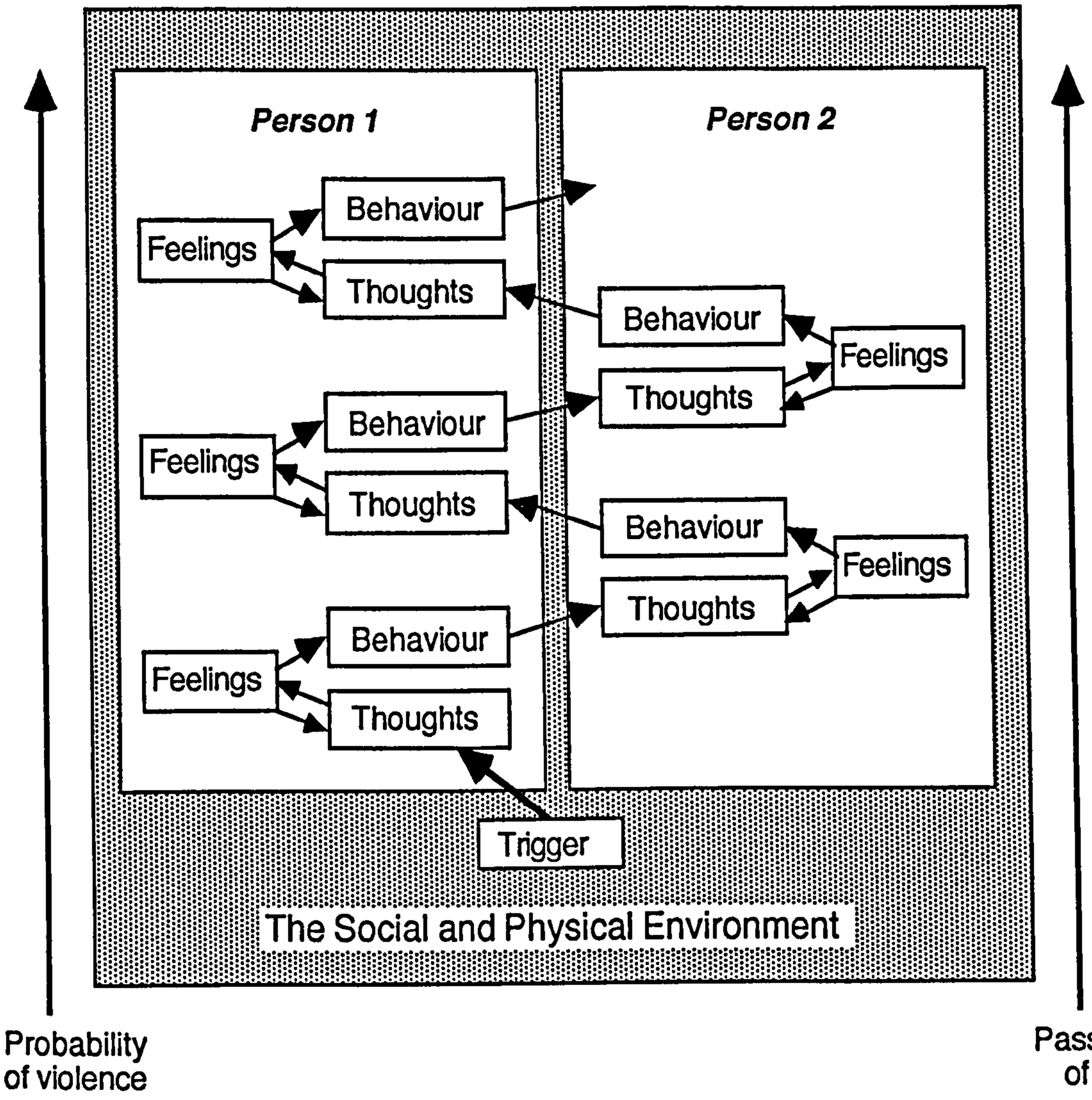
2. The management of work-related violence is most effectively tackled using an *integrated organisational approach* rather than being regarded as a problem for individuals.
3. Work-related violence is a hazard that can be managed using the same *risk assessment/risk management* paradigm as can be applied to any other health and safety hazard. This is best operationalised using the *control cycle* for the management of risk.

1.2.1 Theoretical background

Many approaches to violence treat it as a developing process. Cox and Leather (1994: 222), for example, state that "human aggression is typically the product of interpersonal interactions wherein two or more persons become involved in a sequence of escalating moves and counter moves, each of which successively modifies the probability of subsequent aggression". A cognitive behavioural model suggests that each step in the sequence modifies the situation so demanding reappraisal by the participants, involving cognition, affect and behaviour (Cox & Leather, 1994; Hollin, 1993). Novaco (1978) described the stages in a person's reaction to an unwelcome event or situation. These consisted of appraisal of the "trigger" event as unpleasant in some way so sparking off certain thoughts and feelings, followed by selection of a course of action or behaviour. Novaco suggested that there might be a complex interplay between these components, such that angry thoughts, for example, might heighten emotional arousal which, in turn, might intensify the angry thoughts and so increase the likelihood of aggressive action. In a much simplified form, Novaco's model can be combined with the Cox and Leather (1994) model of an incident as an escalating series of interpersonal interactions to form the model given in Figure 1.1 (Leather, Lawrence, Beale & Maxwell, 1996a). Here the chosen behaviour of one participant at each step serves as a trigger to the other person for the next step.

Interventions to reduce the likelihood of such situations occurring, or escalating, can be designed to break the sequence at some point or lead to de-escalation. Figure 1.1 emphasises the influence of the social and physical environment on the interaction, and manipulation of these can produce conditions that discourage aggressive interactions.

Figure 1.1 Escalation of aggressive incidents (adapted from Leather, Lawrence, Beale & Maxwell, 1996a).



Factors that may contribute to the interpretation of trigger events, and the selection of particular behaviours in reponse, will not be enumerated here, rather, influences such as cultural norms, deindividuation, frustration, group and audience effects etc. will be introduced as required for the interpretation of results or the translation of findings into recommendations for intervention. Detailed consideration of such influences can be found in Geen (1990), Felson and Tedeschi (1993a) and Lawrence and Leather (1999), among others.

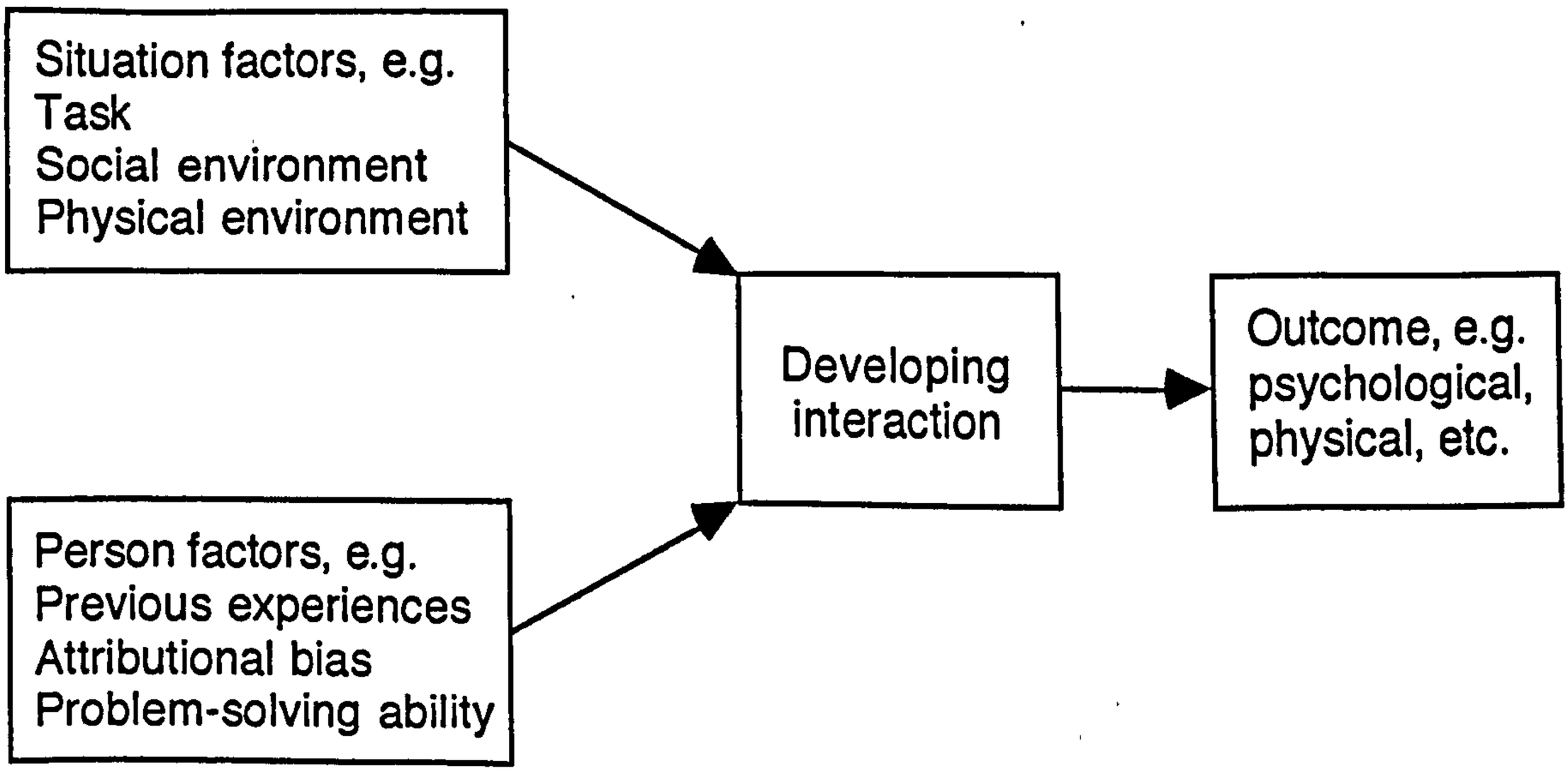
Each of the stages of the developing situation provide an opportunity that can be targeted by:

- reducing the number of trigger events that occur, for example by instigating fair and obvious queuing procedures to minimise competition between waiting customers;
- increasing the likelihood that people's thoughts will be more positive if problems do occur, for example by building up a good relationship between, on the one hand, the staff and the organisation as a whole and, on the other hand, the customers or clients;
- providing a social setting and physical environment in which people are comfortable and at ease, so are less likely to feel frustrated, afraid or angry;
- suggesting alternative, non-aggressive behaviours for both staff and customers when such problems do occur, for example by providing accessible and effective enquiry, complaints or referral procedures.

1.2.2 Situational analysis

Features that affect the development and the outcome of an aggressive interaction, as described, fall within two broad categories concerning the persons involved and the situation, as shown diagrammatically in Figure 1.2.

Figure 1.2 Features affecting the development and outcome of an aggressive interaction



Over recent years, it has become generally accepted that situational factors are more useful in predicting violence than are the traits of individuals. This is occurring even within the field of psychiatry where it might be expected that individual traits would be given greatest weight. This change in attitude has been endorsed by Hiday (1997: 411):

> "Although psychiatrists recognize that violent behavior derives from causes other than mental illness ..., the medical model's individual focus has resulted too often in physically aggressive behavior being incorrectly attributed to the mentally ill person, and resulted in the mentally ill person's legitimate fears being incorrectly attributed to psychotic symptoms."

Borum, Fein, Vossekuil & Berglund (1999: 324) explain that such a change has, in fact, occurred:

> "Over the past 20 years ... there has been a shift from the violence prediction model, where dangerousness was viewed as dispositional (residing within the individual), static (not subject to change) and dichotomous (either present or not present) to the current risk assessment model where dangerousness or risk as a construct is now predominantly viewed as contextual (highly dependent on situations and circumstances), dynamic (subject to change) and continuous (varying along a continuum of probability)."

This attitude ties in with the acknowledgement that almost anyone can become violent given the wrong set of circumstances. Cox and Leather (1994) have described how interactions may escalate from small annoyances or misunderstandings to physical violence. Andersson and Pearson (1999) have also looked at the incident as a process, using the concepts of the "incivility spiral" and the "tipping point" where the spiral escalates because of the overreaction of one party to other's incivility.

Specifically regarding licensed premises, Stockwell, Lang and Rydon (1993) found, in a survey of Perth residents, that situational factors, such as the type of venue, assumed greater importance than individual demographic characteristics of the drinkers themselves in predicting drink-related harm including involvement in violence. Such evidence supports the work described in this thesis which attempts to obtain good quality information about the situations in which violent behaviour occurred.

1.2.3 The integrated organisational approach

The SEP Group advocates, and has developed, an integrated organisational approach to the management of work-related violence (see Beale, Fletcher, Leather & Cox, 1998; Cox & Leather, 1994; Dickson, Leather, Beale & Cox, 1994a; Leather, Cox, Beale & Fletcher, 1998). Such an approach considers that violence is an issue that should be addressed by all levels and groupings within an organisation, as is required by health and safety legislation. Measures introduced to reduce the risk should (i) encompass preventative strategies and planning before incidents have occurred, reactive strategies when incidents are happening and rehabilitative strategies after incidents have occurred; (ii) involve action at the levels of the organisation, the work team and the individual; (iii) be incorporated in policies, implemented through systems and procedures, and enacted through practice and behaviour; and (iv) help to shape, and be reinforced by, a supportive organisational culture regarding work-related violence. This integrated organisational approach is illustrated in Figure 1.3.

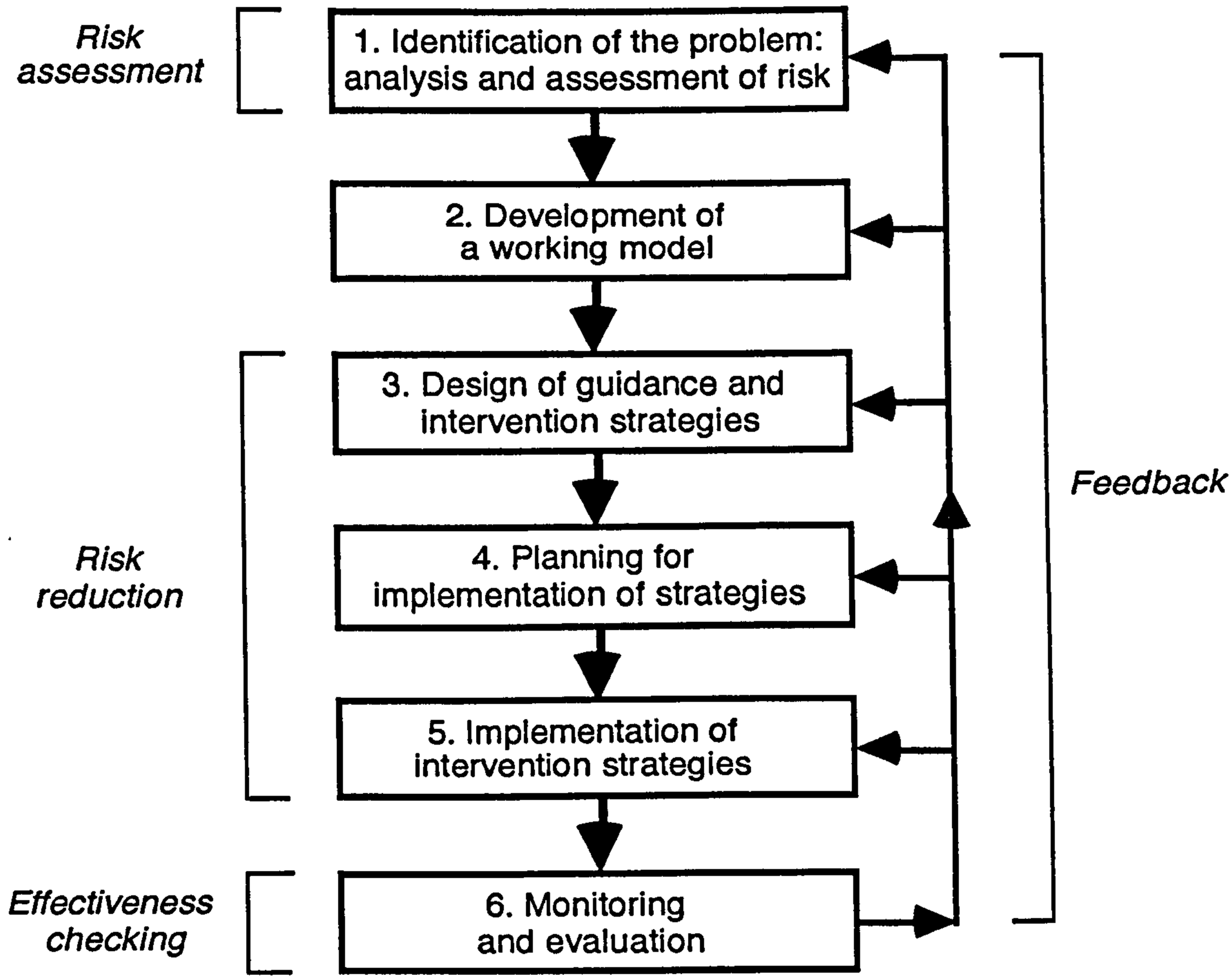
Figure 1.3. The integrated organisational approach

1.2.4 The control cycle

The control cycle (Dickson, Leather, Beale & Cox, 1994a) is a widely used model for operationalising risk management. It is based on the acquisition of knowledge about the problem to devise a working model, and use of a theoretical understanding of violence and aggression to devise strategies that are then translated into the design and implementation of systems,

procedures, guidelines and practice. Evaluation of these measures feeds back to provide a continuous reappraisal of the knowledge and strategies. The steps in the control cycle are shown in Figure 1.4.

Figure 1.4 The control cycle for the management of risk



An incident reporting system, such as is considered in this thesis, is a tool that can contribute to this cycle at at least three stages. First, at Stage 1 in Figure 1.4, it provides statistical information about the number and characteristics of violent incidents which allows identification of the people at significant risk and the situations that contribute to that risk. Second, at Stage 2, it can be used to explore the nature of incidents and allow the construction of a working model that represents common contributory factors to incidents, and what happens before, during and after incidents. Construction of this model suggests areas to exploit for intervention measures to reduce the risk. Third, at Stage 6, it is a means of monitoring changes in the numbers and types of incidents that staff report, so providing information for evaluating the effectiveness of the risk reduction measures implemented. Results from this monitoring function are then fed back into

any of the previous stages to allow reassessment and refinement, so producing the continuous cycle of control.

1.3 WORK-RELATED VIOLENCE

Since the work reported here began, in the late nineteen eighties, the phenomenon of work-related violence has become the object of increasing attention in the academic, professional and managerial literature. This is appropriate and welcome because of the adverse effects on individuals and organisations in terms of physical injury and damage, psychological injury and financial costs.

Workers directly involved in, or witnessing, aggressive or violent incidents related to their work obviously suffer varying degrees of immediate upset or injury. They may also suffer post-trauma reaction, irrespective of whether there has been any physical injury (Fitzpatrick & Wilson, 1999; Flannery, 1996; Stockdale & Phillips, 1989). In addition, workers' health and behaviour may be adversely affected by the fear that they could become victims of attack in the course of their work (Cole, Grubb, Sauter, Swanson & Lawless, 1997; Leather, Beale, Lawrence & Dickson, 1997; LeBourdais, 1995; Rey, 1996). As well as the personal cost to individuals, violence can have considerable commercial implications for organisations. Costs can include not only the direct costs such as sick pay and the cost of relief staff time, but also the hidden costs such as management time in investigating the incident, following up employee welfare, organising relief staff and liaising with police, as well as the victim employee's time in working with decreased efficiency while recovering, attending hospital, reporting the incident, making statements to police and attending court as witness. Additional costs can cover administrative time, loss of expertise if staff leave, recruitment and training of replacement staff, legal costs, and the loss of customer confidence (Bulatao & VandenBos, 1996; Health and Safety Executive, 1993b).

1.3.1 Defining work-related violence

The generally accepted definitions of work-related violence invariably require a worker to be threatened or attacked in some way, either physically or verbally. The SEP Group use the definition agreed by the European Commission (EC) DG-V:

> "Incidents where persons are abused, threatened or assaulted in circumstances related to their work, involving an explicit or implicit challenge to their safety, well-being or health."
> (Wynne, Clarkin, Cox & Griffiths, 1997)

This definition allows for the full range of circumstances in which a worker might be attacked while at work or on duty, either in a fixed or mobile location, or while not on duty but in circumstances relating to their job. It also takes account of psychological, as well as physical, violence and harm.

Some researchers, such as Kraus, Blander & McArthur (1995), have focused only upon actual or attempted physical assault, irrespective of the identity and status of the perpetrator, while others (e.g. Folger & Baron, 1996) focus on workplace aggression including any form of behaviour by staff that is intended to harm current or previous co-workers, or their organisation, including spreading negative rumours, withholding information or resources and purposely failing to return telephone calls.

There has been much discussion in the literature about the difference between violence and aggression (see, for example, Bulatao & VandenBos, 1996; Howard & Voss, 1996; O'Leary-Kelly, Griffin & Glew, 1996a,b; Pearson-Woodd, 1998) sometimes making the distinction that violence has to involve physical injury whereas aggression is an action made with the intention of causing harm (O'Leary-Kelly, Griffin & Glew, 1996a). Often the distinction is that violence has to involve a physical assault whereas aggression may be a verbal or postural threat, or abuse. While such distinctions are necessary in certain situations, such as defining and limiting the scope of incidents that have to be reported nationally (RIDDOR 95), or determining whether a criminal act has been committed, they are less helpful when trying to manage the problem within an organisation. Although Berkowitz (1993: 11) distinguishes aggression as "some kind of behaviour that is carried out with the intention to harm someone" and violence as an extreme form of aggression, "a deliberate attempt to do serious physical injury", he uses the terms almost interchangeably when discussing the general problem. This is fitting in that some acts of non-physical aggression can have more harmful consequences than some acts of physical violence and, therefore, warrant just as much attention in health and safety research.

It is important for organisations not to limit their knowledge of incidents just to those that resulted in physical injury for three main reasons. First, workers may suffer serious psychological injury without having been physically injured, particularly if they are repeatedly subjected to aggressive incidents. Second, minor incidents may be the precursors of more serious incidents. Third, aggressive incidents form a continuous spectrum from the trivial to the extremely serious, and the greater the proportion of that spectrum that can be studied, the more accurate are likely to be the patterns and trends revealed. In addition, the range of incidents considered may need to be broadened beyond those included by the EC definition, as in the work reported here (see Appendix 2) for reasons explained in the following section.

1.3.2 Types of work-related violence

A number of types of work-related violence must be distinguished because different work situations are prone to different kinds of violence and the measures taken to manage the problem need to be appropriate to the violence encountered. The theoretical literature generally recognises two types of aggression and violence: instrumental and emotional/affective (e.g. Berkowitz, 1993). Instrumental violence is the planned use of threat or physical force as a tool to assist in achieving some other goal. Emotional or affective violence arises out of emotions such as frustration or anger and is largely unplanned. However, the distinction between the two is not always sufficiently clear cut (see, e.g., Lawrence & Leather, 1999) to be used in an organisational context, although the concepts are useful in understanding how different types of work-related violence arise and, therefore, how they should be managed.

One widely used classification scheme is that proposed by the California Occupational Safety and Health Administration (Cal/OSHA, 1995). Three broad categories of workplace violence are identified:

Type I — The agent has no legitimate business relationship to the workplace and usually enters the affected workplace to commit a robbery or other criminal act.

Type II — The agent is either the recipient, or the object, of a service provided by the affected workplace or the victim, e.g. the assailant

is a current or former client, patient, customer, passenger, criminal suspect, inmate or prisoner.

Type III The agent has some employment-related involvement with the affected workplace. Usually this involves an assault by a current or former employee, supervisor or manager; by a current/former spouse or lover; a relative or friend; or some other person who has a dispute with an employee of the affected workplace.

Type I incidents are assumed to involve mostly instrumental violence although, because people committing a criminal act are likely to be in a high state of arousal, emotional violence may also be involved, particularly if things start to go wrong for the perpetrators. Type II usually involves emotional violence brought on by circumstances involving the relationship between the service user and the service provider. However, it is not unheard of for service users, such as school pupils, deliberately to use abuse and aggression against a member of staff in order to humiliate them. Type III incidents similarly may involve emotional or instrumental violence. Emotional outbursts might occur when working under extreme pressure, or as retaliation for perceived injustice, whereas instrumental aggression might be used deliberately to undermine a colleague in order to gain personal advantage.

While the Cal/OSHA scheme is a useful classification and has been widely adopted, it is over-simplified and incomplete. For example, violence from an acquaintance or family of a worker is a very different phenomenon, organisationally, from violence from a coworker. Additionally, in some types of work, including that in public houses and bars considered in this thesis, workers have to cope with a wider range of violent or aggressive incidents. Specifically, some workers have to manage violent incidents involving other people. This situation is encountered, for example, by teachers who have to separate fighting pupils, by police breaking up a fight outside a football ground, by a public house manager attempting to calm customers who are arguing, or a nurse managing aggression between psychiatric or elderly inpatients. Management of such incidents can be psychologically, as well as physically, bruising, as described by Chambers (1998).

The types of violence that impinge on the workplace can be classified by who is the perpetrator and who is the victim. Both perpetrator and victim can be

(i) workers themselves; (ii) clients or customers; (iii) people related to a worker outside the workplace, such as family, friends or acquaintances; or (iv) total strangers who have no relationship to the particular worker or the workplace. Table 1.1 gives examples of the different types of violence in terms of the relationships of the perpetrator and victim. Those in italics do not fall into the EC definition of work-related violence but have implications for any consideration of such violence.

As well as direct attacks on people, attacks on property also have to be included in an organisationally practical consideration of violence because they can be extremely frightening for anyone present, and also because they can be closely associated with aggression towards people. Aggressors may vent their anger on a nearby object rather than attacking a person, or they may return later to attack property as retaliation following an altercation.

Violence by Workers

Worker on worker violence has attracted much attention, and has come to be almost synonymous with the term "workplace violence" in the American media (see Bulatao & VandenBos, 1996). Even in policies for managing the problem, concentration is expected to be on workers as the perpetrators. Bowman & Zigmond (1997), for example, looked at state policies for the management of problems regarding their own employees and made recommendations which concentrated on workers as the perpetrators of violence. However, workplace assaults and homicide perpetrated by a coworker are comparatively uncommon and trades union attitudes tend to emphasise that "management is hardly credible if it focuses on coworker incidents and ignores the much larger threat from those who enter the workplace from outside" (King & Alexander, 1996). Similarly, Brakel (1998) belittles the problems from other types of workplace violence because most homicides are from stranger violence.

Worker on worker violence encompasses inter-personal animosity from personality clashes or competition, bullying, harassment and retaliatory violence by workers who feel they have been unfairly treated by management or colleagues, as has occurred dramatically within the U.S. Postal Service in recent years (Andersson & Pearson, 1999; Baxter & Margavio, 1996; Fox and Levin, 1994; Jones and Boye, 1992; Pastor, 1995). Such retaliation might also include sabotage and attacks on company property.

Table 1.1 Examples of different types of violence associated with work, classified by perpetrator and victim

	Perpetrator			
Victim	Worker	Client or customer	Family or friend	Stranger
Worker	Bullying, harassment; Retaliation for treatment perceived to be unfair; Suicide, self harm	Retaliation for service perceived to be unsatisfactory; Reaction against control	"Overspill violence"; Retaliation for perceived unfair treatment of a family member	Robbery; Hostage taking; Terrorism
Client or customer	*Ill treatment or abuse of vulnerable clients; Over-zealous control*	*Fights, aggression between clients on the premises*	*Over-zealous control by family / friend "helping out"*	*Intruder attacks*
Family or friend	*Work stress manifesting as domestic violence*	*Referred attacks on family of worker*	*Inter-family hostility caused by work problems*	*Hostage-taking / kidnapping; Threats involving worker's family*

These types of incident do not appear to be concentrated in particular occupations, but may occur in any organisation. However, those organisations that are very hierarchical and those that have a competitive or a "macho" culture may be particularly prone to these problems (see Beale, Lawrence, Smewing & Cox, 1999).

Violence by workers on themselves in terms of committing suicide is a worrying trend particularly in the police (Mohandie & Hatcher, 1999; Reese, 1986; Violanti, 1996), doctors (Frank & Dingle, 1999; Tyssen, Vaglum, Gronvold & Ekeberg, 2000) and farm workers (Hawton, Fagg, Simkin, Harriss, Malmberg & Smith, 1999). Work factors that increase the risk of suicide include high stress content, exposure to particular chemicals and the ready availability of the means of committing suicide (Boxer, Burnett & Swanson, 1995; Hawton, Fagg, Simkin, Harriss & Malmberg, 1998).

Assaults, rough handling or verbal abuse by workers towards clients, customers or members of the public, as well as being undesirable in themselves, undoubtedly encourage retaliation against those workers or others associated with them. Ill treatment or abuse of vulnerable clients has hit the headlines regarding a small minority of child-care workers, psychiatric nurses, psychotherapists and carers in old people's homes (e.g. Kendrick & Taylor, 2000; Perlow & Latham, 1993; Shaw, 1998). Over-zealous control can occur where the dividing line between reasonable and unreasonable force is overstepped by, for example, security personnel, the police, teachers or pub staff (e.g. Wells, Graham & West, 1998).

A hidden problem is that of workers taking out their work-related frustrations on their family or friends. Problems at work may be deflected away from the workplace and manifest as domestic violence, partly because the sanctions against violent action appear to be less at home than at work, as discussed by Bjorkqvist, Osterman and Lagerspetz (1994) and by O'Leary-Kelly, Griffin and Glew (1996a). The most well known cases involve athletes in particular sports, such as basketball, football and boxing, who have battered their wives, as discussed by Rowe (1998).

Violence by clients or customers

Attacks on workers by their clients falls into two main types: (i) attacks by the recipient of a service because that service is perceived to be

unsatisfactory in some way, and (ii) protests against workers carrying out a control function.

Attacks by a customer or client may occur because they are dissatisfied with some aspect of the way they have been treated. This often occurs when people's expectations are not met, for example if a flight is delayed for a long time, or a requested service has to be withheld. A worker's behaviour might affect the likelihood of violence occurring in terms of both the quality of service delivery determining customer satisfaction (Stockdale & Phillips, 1989) and the way in which complaints and problems are handled, either calming or exacerbating the situation (Wells, Graham, & West, 1998). Included in this category are attacks by family or friends of a service recipient, as experienced for example in schools and healthcare settings (e.g. Beale, Fletcher, Leather & Cox, 1998; Farrell, 1999; Leyden, 1999).

Workers carrying out a control function, such as the police, security and prison officers are always at some risk from people who do not want to comply with directions given. Getting the balance right between officious, or heavy handed, control and loss of control is part of the skill of the job. However, even with that balance correct, there are going to be situations where they become the targets of the anger or frustration of those they have to control.

Some workers are open to both these problems, particularly those that fulfil both a caring and a control function, such as social workers, psychiatric nurses and teachers. Sometimes attacks by clients may be displaced onto the family or friends of workers, particularly if they live on the premises, as often occurs with small businesses such as shops, hotels or public houses.

Trouble between clients or customers can provide dangerous situations for staff to manage. Such situations might be experienced by anyone who has control of premises either where clients or customers remain for any length of time, such as teachers, football stadium staff, pub or club staff and passenger transport workers, or where they are in competition for service, as in retail outlets or bars. Recent shootings of fellow students by children within their schools in the U.S. are particularly horrifying and dramatic examples (e.g. Whitworth, 2000). Domestic violence between customers may also have to be managed by staff providing social facilities such as hotels or bars.

Violence by family, friends or acquaintances

Violent attacks on people at work by their family, friends or acquaintances, where the cause of the incident is not work-related, can been termed "overspill violence". The workplace is merely the scene of the incident but routine working is, inevitably, adversely affected, and the organisation has to deal with the aftermath. The U.S. Department of Justice (1994) reported that husbands and boyfriends commit around 13,000 acts of violence against women in the workplace annually. A further possibility is attack by a worker's partner on a coworker, if that partner knows, or suspects, that they are having an affair.

In addition, the impact of domestic violence on well-being and productivity, particularly of female workers, and thus on the workplace, is an issue attracting increased attention (e.g. Brownell, 1996; Friedman, Brown Tucker, Neville & Imperial, 1996; Johnson, & Indvik, 1999; Younger, 1994). It is particularly relevant to jobs where couples work as a team or live on the premises, so that domestic life and work life overlap.

Workers' families or friends, with or without the workers themselves, may also be involved in exacting retribution against employers or coworkers, where they feel that the worker has been treated unfairly at work.

Violence by Strangers

Attacks by strangers, or outsiders, on workers are most usually allied to robbery, where the main target of the attack is cash or valuable goods, but threat and violence may be used as the means to obtain them. This manifests itself in the high rates of homicide in the U.S. retail industry (Peek-Asa, Erickson & Kraus, 1999). Less common are terrorist attacks, which are politically motivated and are targeted at organisations or personnel either for their high public profile and accessibility, as with the attacks on the Canary Wharf office development in east London in 1996 (e.g. Kyle, 1996) and on the federal building in Oklahoma City in 1996 (e.g. Lewis, 2000), or for the work they carry out, such as abortion (Fitzpatrick & Wilson, 1999; Grimes, Forrest, Kirkman & Radford, 1991; LeBourdais, 1995; Roberts, 1994). Occasionally, workers' families may be the target of attacks or threat, or they might be kidnapped or held hostage, so that they can be used as bargaining tools for money or other demands.

Attacks by strangers on clients or customers also include the intruder violence such as occurred so tragically in the British schools at Dunblane and Wolverhampton (Leyden, 1999) and in shooting attacks in a Tasmanian cafe and in restaurants in Pittsburgh (e.g. MacIntyre, 2000). Many published policies, procedures and guidelines are now to be found, for example on the Internet, relating to the prevention of such attacks by strangers.

Another form of violence involving strangers is the phenomenon of people committing suicide by, for example, throwing themselves under trains or other heavy vehicles. Around 90 London Underground train drivers experience a person jumping or falling in front of their train each year (Tranah & Farmer, 1994). The effect on the drivers of these trains can be extremely serious, although they were quite powerless to prevent the incident. Being used as a tool to cause the death of another person may be quite devastating.

The classification and measurement of the types and consequences of violence are important both for epidemiological purposes and for devising appropriate interventions for specific work situations depending on the relative frequency of different types of incident. The prevention and management of certain types of aggressive and violent situations are possible (Cox & Leather, 1994) but they require measures tailored to the circumstances and dynamics of the particular forms of violence encountered. It should be pointed out, at this stage, that almost every type of violent incident discussed here was reported in the present study.

1.3.3 Extent of the problem

Some writers make workplace violence out to be a grotesquely serious problem. Chenier (1998: p. 557) states "The workplace has become a battleground for violence in society. ... Employers will have to modify their hiring practices and transform the workplace into a virtual fortress to protect employees. ... Like a deadly virus, crime in America is increasing at a tremendous rate. The workplace is not immune to this deadly disease penetrating our daily existence. Upon entering the workplace each day, the worker does not know if an offensive deadly act will occur." She is overdramatising the situation for the vast majority of workers. This is illustrated by the fact that Cole et al. (1997) had to disregard physical

violence from their survey of 600 American workers because only 3% had experienced any physical violence in the preceding 12 months.

However, concerns about violence have been noted in a wide variety of occupations and countries (see, for example, Flannery, 1996; Kraus & McArthur, 1996; Nigro & Waugh, 1996). In 1993, the U.S. National Institute of Safety and Health issued an alert for research to assist in preventing homicide in the workplace (NIOSH, 1993). Homicide causes around 20 workplace deaths each week in the U.S., the numbers having declined during the 1980s but increased again in the 1990s. It accounts for 11% of all occupational injury deaths among males and 42% among females (Jenkins, 1996). Additionally, the U.S. Department of Justice *National Crime Victimization Survey* (Warchol, 1998) recorded an annual rate of more than two million violent victimisations in the workplace for the years 1992-1996, around 12% of these causing injury.

In Britain and Europe, there are fewer statistics available specifically about violence at work, as highlighted by Wynne and Clarkin (1995). However, the 1992 British Crime Survey noted that assaults at work had more than doubled from 1981 to reach around 360,000 in 1991 (Mayhew, Aye Maung & Mirrlees-Black, 1993). All violence reported in the British Crime Surveys rose by 88% between 1981 and 1995, but fell by 17% between 1995 and 1997, so that the overall rise between 1981 and 1997 was 56% (Mirrlees-Black, Budd, Partridge & Mayhew, 1998). Overall, the number of offences of violence against the person, recorded by the police, rose by an average annual rate of 9% from 1950 to 1987 (Field, 1990). More recent annual increases have generally been smaller; although for the year ending March 1997, an increase of 11% over the previous year was reported. During the year April 1997 to March 1998, 352,900 violent offences were recorded by the police in England and Wales, 72.6% being violence against the person, 17.8% robberies and 9.7% sexual offences (Povey & Prime, 1998).

The 1996 International Crime Victimisation Survey (Mayhew & White, 1997) showed that, during 1995 in England and Wales, and the USA, 4% of people were victims of contact crime, comprising robbery, assaults with force, and sexual assaults against women. This rate was about double that in Northern Ireland, Austria and the Netherlands. Sweden and Finland also had relatively high levels of contact crime.

There is little doubt that official figures underestimate the size of the problem for there is a gross lack of reporting of violence at both the national and organisational level (Painter, 1987). Estimates in the U.S. and the U.K. suggest that between 30% and 80% of physical assaults go unreported (Murphy, 1996). Moreover, homicide and severe physical assault represent only the extremes of work-related violence and are not the most typical. Bulatao and VandenBos (1996) estimated, using U.S. Government data, that only 1 in 650 workplace crimes of violence (i.e. 0.2%) involved homicide. Similarly, homicide offences accounted for just 0.2% of all reported violent crime in the U.K. for the year ending March 1998 (Povey & Prime, 1998). In terms of non-physical violence, around 75% of Greenberg and Barling's (1999) sample of 136 men admitted to some form of psychological violence against co-workers, subordinates and supervisors, in contrast to 1.5% who reported using physical violence. However, the level of under-reporting of verbal abuse and threats of assault is thought to be much higher than for physical violence (Toscano & Weber, 1995). The problems of violence and aggression at work therefore remain largely unrecognised by employers and Government alike (Randall, 1997), but these figures provide the impetus for them to take the issue seriously and to find ways to safeguard people in their work.

1.4 VIOLENCE IN BARS AND LICENSED PREMISES

Surveys of public house licensees reveal that the majority of licensed premises experience little violence on a regular basis (Dickson, Leather, Beale & Cox, 1994b; Hillas, Cox & Higgins, 1988). However, staff within the licensed retail trade have to deal with the possibility of both robbery and inter-personal conflict involving their customers, that is they are vulnerable to both Cal/OSHA Type I and Type II violence. The violence that can occur in and around public houses and bars is a well recognised problem that poses a significant threat to the health and safety of staff and customers, as is demonstrated by a variety of statistics from different countries.

In the U.S., the rate of workplace homicide for bartenders is over three times the national average for workers in general (Jenkins, 1996), while the National Crime Victimization Surveys show that, for 1992-1996, bartenders experienced the fifth highest rate of assault and threat (91 out of every 1000 workers attacked), exceeded only by police, private security, taxi drivers and

prison staff (Warchol, 1998). Peek-Asa, Erickson & Kraus (1999) found that workers in drinking establishments experienced a greater increase in the number of traumatic deaths at work than any other category over the period 1992-1996, having increased by almost 50% in 1996 compared with each of the four previous years.

In New Zealand, Langley, Chalmers & Fanslow (1996) studied the victims of assault presenting at hospital emergency departments. They found that 9% of the homicides and 10% of all assault resulting in hospitalisations occurred in or around licensed premises (18% of those where a place was specified). The hospitalisation rate for licensed premises was at least 7.5 per 100,000 persons per year. In Australia, Stockwell, Lang and Rydon (1993) found that, for Perth residents, 74% of drink-related problems, such as assault or accidental injury, occurred following drinking in licensed premises rather than in private settings.

Within the U.K., the HSE (1998) found that the only two fatal injuries to employees in the hotel and catering industry reported to local authorities in the year 1996/7 resulted from violence. There were also 58 major injuries, and 68 over-3-day injuries, to employees reported to be caused by acts of violence. The 1992 British Crime Survey (Mayhew, Aye Maung & Mirrlees-Black, 1993) revealed that 16% of incidents of violence (420,000 assaults) occurred in pubs and clubs, and the 1996 British Crime Survey (Mirlees-Black, Mayhew & Percy, 1996) indicated that one third of assaults by strangers and one fifth of assaults by acquaintances occurred in or around licensed premises. The 1998 British Crime Survey (Mirrlees-Black, Budd, Partridge & Mayhew, 1998) found that the proportion of adults who were victims of violence during 1997 was related to the number of evenings they spent in a pub or wine bar. While just 2.9% of those making no visits per week were victims, 10.6% of those making three or more visits were victims. Also in the U.K., Shepherd, Scully, Shapland, Irish and Leslie (1988) reported that 39% of injuries from assault presenting at an inner-city hospital for treatment occurred in or around licensed premises.

This weight of statistics, undoubtedly affected by under-reporting as already discussed, demonstrates the necessity for measures to be devised to attempt to reduce the amount of violence occurring in licensed premises, and to reduce the effect of any incidents that do occur. In order to do this, it is

necessary to appreciate the nature of the licensee's job and the public house environment.

The job of public house staff, and licensees in particular, is very complex and involves providing a service to the public, conducting money transactions, controlling people, working late in the evening, working as part of a local community, and having responsibility for cash and valuable stock. In short, the job combines not only most of the kinds of interaction with the public that are most liable to become violent but also aspects of the work environment that are recognised by the HSE as increasing the vulnerability of staff (Poyner & Warne, 1988).

Other factors in the pub environment further increase the risk of violence occurring. Licensees do not simply sell drinks and food, they also try to provide a social environment in which people want to spend their leisure time. Engels, Knibbe and Drop (1999), for instance, stress the symbolic meaning of the pub as a place for socialising in the life of late adolescents. Social interactions among customers are highly varied as they use the public house for a whole range of purposes, for talking quietly, for playing pub games, such as pool or darts, for watching sports matches on television, for holding celebrations, or for "drowning their sorrows".

Interactions between staff and customers are also complex and varied, and may be repeated a number of times in one day as the customers remain on, or return to, the premises. For regular customers interactions are repeated on successive days. Interactions between customers or between staff and customers can spark off an aggressive incident at any time. In addition, there may be an increased amount of violence on the streets around licensed premises, particularly where these occur in high concentration (Felson, Berends, Richardson & Veno, 1997; Homel, Hauritz, Wortley, McIlwain & Carvolth, 1997).

An additional factor is, of course, that pubs provide alcohol. The precise relationship between alcohol and aggression is unclear, but is certainly not straightforward. Hodge (1993) pointed out that despite a lengthy history of research into the relationship between alcohol and violence, there is still confusion about the exact nature of the relationship. Pernanen (1991) suggested that alcohol modifies both the way in which people evaluate situations (primary appraisal) and the ways in which they feel they can cope

with that situation (secondary appraisal), in such a way as to increase the chances of them acting in an aggressive manner (see also Gibbs, 1986). Felson, Baccaglini and Gmelch (1986) suggest, for example, that control actions of public house staff might be interpreted by an intoxicated person as an affront so sparking off retaliatory action. Bjorkqvist, Osterman and Lagerspetz (1994) suggest that, in choosing whether to commit a violent act, people take into account the ratio between the advantageous effect and the danger to themselves. It may be that alcohol affects their ability to estimate these and to appreciate the consequences of acting violently.

Murdoch, Pihl and Ross (1990) make the point that alcohol, rather than directly causing violent behaviour, may cause people to behave in other bizarre ways that annoy others and therefore precipitate potentially violent situations. Homel, Tomsen and Thommeny (1992) point out that the association between public drinking and violence is not just a problem of people drinking alcohol. They make a distinction between the effects of ethanol, the substance, and the total environment of drinking and its regulation by management, the police and other public officials. The occurrence of violence is affected by situational factors within the licensed premises, such as patron mix, levels of comfort, boredom, intoxication and the behaviour of door control staff. Lang, Stockwell, Rydon & Lockwood (1995) found that the significant risk factors for alcohol-related harm, including being involved in a violent argument or fight, following visits to licensed premises included such environmental features as a predominance of males among the clientele at the venue, and the presence of music and/or dancing.

Drug-related activity has also become a significant problem for public house licensees, and has been associated with violence and aggressive behaviour (MCM Research, 1993). Licensed premises usually have easy and open access, and are often noisy and crowded so can provide an ideal venue for illegal activities, such as drug dealing or usage. Violence can be linked with the effects of specific drugs, with arguments over financial transactions or with disputes between rival dealers. Licensees are legally required to ensure that their premises are not used for drug-related activity, so they are obliged to tackle any such activity they find. However, managing such potentially violent elements may place licensees in dangerous situations demanding great care and skill to avoid repercussions.

Considering such a variety of factors, it is not surprising that licensees in the study by Cox and colleagues (Hillas et al., 1988) saw their job as multifaceted and with the potential for conflict constantly present.

> "I don't think [people] appreciate the job we face day in and day out. We are 24 hour watchmen and we have to be very good peacemakers. Our job involves being everything from a marriage counsellor to a champion boxer. With a lot of other occupations in between."

> "A publican is "king" lawmaker, judge and policeman of his own self contained kingdom. Membership to his society is open to all."

The effects of any violence in a public house may be exacerbated because the majority of licensees live on the premises, around three quarters with partners and a third with children (Dickson et al., 1994b). Although this may not affect the likelihood of a violent incident occurring, it undoubtedly increases the potential for harm in terms of the involvement of the family and the home. Further, much of the work of licensees is directed towards creating an atmosphere in which people feel safe and comfortable, will want to stay and to return on a regular basis. A violent incident in the pub may discourage customers and therefore affect the profitability of the business and the livelihood of the licensee. As one of Hillas et al.'s (1988) sample of licensees put it:

> "[A violent incident] totally depresses the pub atmosphere and the manager, some customers will leave and will probably not return. De-motivation of all."

In Dickson et al.'s (1994b) survey, over a third of licensees (36.8%) indicated that they believed the business viability of their pub was highly at risk from the possibility of violence occurring in the pub.

Despite all these aspects of the licensee's job and work environment, very little of the research into violence in licensed premises has considered how it affects licensees and their staff. The Social and Environmental Psychology (SEP) Group at Nottingham has studied the effects on licensees since 1986. A questionnaire-based stress audit in 1995, which made no direct reference to violence, revealed that violence was the fourth most frequently reported stressor facing licensees and the one most closely related to the negative

outcomes of reduced job satisfaction, poorer well-being and a greater intention to quit the job (Leather & Lee, 1995).

A survey that asked more specifically about licensees' experiences of violence and aggression at their premises confirmed that those licensees who felt very much at risk and were very worried about violence experienced lower job satisfaction and lower organisational commitment, and felt more "worn out" and more "up-tight" than their fellows (Dickson, Leather, Beale & Cox, 1994b). This illustrated the negative impact that fear of being the victim of violence can have on the well-being of workers (Leather, Beale, Lawrence & Dickson, 1997). The survey also revealed that the effects of exposure to violence could be ameliorated by the quality of support that licensees felt they received from the organisation, particularly their line manager (Leather, Lawrence, Beale, Cox & Dickson, 1998). Such results highlight the importance of an organisation working actively, and being seen by their staff to be working actively, to tackle the problem of work-related violence. Part of this response has to be to investigate in detail the common factors that contribute to violent incidents so that effective measures can be implemented.

Homel and his colleagues (Homel et al., 1997) provide an example of an initiative that successfully reduced the incidence of violence in and around the licensed premises of the Surfers Paradise area of Western Australia. They gathered information about the factors that contributed to the occurrence of violent incidents in the area, then introduced a series of initiatives including training of security staff and increased cooperation with the police. Licensees were asked to sign up to a code of practice which was displayed in all the outlets to provide information and increase awareness of staff and customer responsibility in maintaining a safe environment. Responsible practice in the advertising and sale of alcohol was also included. Fundamental to the success of this intervention was the initial acquisition of information. The next chapter addresses the problems connected with obtaining information about work-related violence.

CHAPTER 2: OBTAINING INFORMATION ABOUT WORK-RELATED VIOLENCE

If effective measures are to be taken by organisations to reduce the risks from work-related violence, then the design of those interventions must be based on accurate information about the types of violent incident that are most likely to occur in the particular job or work setting, and how those incidents arise and develop. However, the gathering of accurate information about violence and aggression is extremely difficult because of the illegality of violence and its general condemnation by society. The perpetrators, and sometimes the victims, will normally try to prevent knowledge of the violent incident getting to their employers, the police and, often, their own social group. Methodological issues surrounding the gathering of such information are discussed in this chapter.

2.1 METHODS OF STUDYING VIOLENCE

2.1.1 Laboratory studies of aggression versus real world studies

Psychological research on aggression and violence has always faced the dilemma of whether to study aggression in the laboratory or in the field. Laboratory experimentation controls variables to allow testing of causal hypotheses through scientific method, but isolates the behaviour from its normal context thereby losing ecological validity and generalisability of the findings. Field studies examine the behaviour in its naturally occurring social context, so losing experimental control over variables and limiting the conclusions that can be reached concerning causal factors, because of the possible existence of hidden confounding variables (see, for example, Archer & Browne, 1989).

There is continuing debate about the relative merits of laboratory and field studies. Berkowitz (1993) defends the use of laboratory studies on the grounds that the controllability of the experiment allows very specific causal hypotheses to be tested and he, along with most writers, uses laboratory results to explain and justify the fundamental theories about aggression. Tedeschi and Quigley (1996), on the other hand, question their value on a number of grounds, such as whether what has been measured is actually aggression or is largely compliance with the researcher's cover story.

In addition, there are ethical issues that have to be considered in deliberately causing people to become aggressive, even when in the controlled conditions of a laboratory. If real aggression is generated, it could compromise the safety of both the subject and the research team. There can be no cast iron guarantee that debriefing will dissipate aggression, but may leave a resentment that could lead to later retaliation. Or a subject might be so upset as to walk out before proper debriefing can be given.

Tedeschi and Quigley (1996: 175) also question whether results from artificially generated aggression in a safe laboratory environment generalise into the "real world". "The range of values - rewards and punishments - which can be manipulated in the laboratory is quite limited. ... In everyday life outside the laboratory, the stakes at issue in social conflicts may be perceived as extraordinarily important, even life threatening. We do not know whether functions we find in laboratory studies under low value conditions generalize to situations where values are quite high."

Archer (1989) is concerned that laboratory experiments isolate the aggressive act away from the social context, rather than seeing it as part of social interaction and, in so doing, reinforce an ideology that seeks to isolate the violent act as a legal, medical or social problem. He argues that "the forms of violence which occur in our society are only understandable in terms of the social conditions and context in which they arise."

Naturalistic studies also have their problems, of course, such as accuracy of information, the representativeness of samples, and the formulation and testing of hypotheses under uncontrolled conditions, as discussed by Archer (1989). Some of these problems are discussed in detail in the following section. The main conclusion to be drawn from the continuing debate is that there is no perfect way to study aggression and violence, and that a combination of methods needs to be used. Tedeschi and Quigley (1996: 175) advocate both triangulation of results and innovation in the study of the violent incident as a process: "To extrapolate from the laboratory it will be necessary to triangulate results from natural observations, field studies and data archives available from crime fighting organizations. ... We need to move away from a set of neo-behavioristic laboratory paradigms for studying reactive aggression to new ways of examining the dynamic social processes that instigate the use of threats and punishments."

The call for naturalistic studies such as those described in this thesis is compelling. Despite their limitations, the paramount justification for the choice of such methods is that it is unlikely that alternative types of study could do a better job, and if they were not used it could mean that serious issues were neglected (Fox & Spector, 1999).

2.1.2 Studies in the real world

Many statistical studies have been carried out on national or state data sets in the United States, such as workers' compensation records (e.g. LaMar, Gerberich, Lohman & Zaidman, 1998) or the National Traumatic Occupational Fatalities surveillance system (e.g. Jenkins, 1996) and these provide a general overview. However, there are various drawbacks to this type of study, as discussed by White (1996). They only capture incidents with relatively major consequences such as death or injury that requires time off work. Additionally, they may be biased towards industries which have well developed systems for reporting such information to central government, such as the public sector. However, both Beale, Cox and Leather (1996) and Nigro and Waugh (1996) have argued that, although nationally collected data have many uses, data need to be gathered at an industry specific level and at the organisational level to produce information that is appropriate to inform the design of measures to combat problems. Hales, Seligman, Newman and Timbrook (1988) similarly note the requirement to study the specific industry or section of industry to get a true picture. They point out, for example, that within the grocery store industry, employees in large supermarkets may not be at the same risk from occupational violent crime as those in convenience food stores.

A realistic picture of work-related violence requires studies at different levels of analysis and granularity, each informing the others. Information has been gathered by researchers at the level of individual incidents (e.g. Shaw, 1998: nursing home staff), individual work units (e.g. Macintyre & Homel, 1997: nightclubs), organisations (e.g. Whittington, Shuttleworth & Hill, 1996: a general hospital), industry sector (e.g. Jenkins, Rocke, McNicholl & Hughes, 1998: hospital accident and emergency departments nationwide; HSAC, 1987: healthcare nationwide), across professions (e.g. Royal College of Nursing (RCN), 1994; Breakwell & Rowett, 1989: social workers), by geographical area (Felson et al., 1997; Homel et al.; 1997: holiday nightspots) and nationally (Salminen, 1997: in Finland; Warchol, 1998: for the U.S.). Court proceedings have also been used to study work-related violence across

all sectors of industry, but the samples are very selective. Allen and Lucero (1998), for example, looked at arbitration decisions on workers disciplined or dismissed for assaults on their superiors.

Violent incidents are relatively infrequent so one of the problems of research using naturally occurring incidents is to get large enough samples to give statistical significance to results seen. Cole et al. (1997) for example, had to disregard physical violence from their survey of 600 US workers because only 3% had experienced such an attack in the preceding 12 months. Klein et al. (1997) noted that, for epidemiological research, the rarity of violence makes cohort studies problematic.

2.1.3 Monitoring at organisational level

Monitoring of work-related violence goes beyond simply investigating and dealing with the consequences of individual incidents, it is the provision of management information about the overall picture of aggression and violence within an organisation, a profession or a sector of industry. Reasons for monitoring violent incidents concerning people at work fall into two main categories: legal requirements and management good practice. As discussed in Chapter 1, the legal requirements come under health and safety law. Within the U.K., employers have to report certain violent incidents to the HSE or the local authority under RIDDOR 95, so are obliged to establish a system for reporting and recording incidents. The Health and Safety at Work etc. Act 1974 requires employers to provide a safe working environment. Such provision obviously necessitates the employer being aware of any threats to that safety, including any incidents of violence. There is also a requirement under the Management of Health & Safety at Work Regulations 1992, to carry out risk assessments for people at work. Assessing the risks from violence is a necessary part of that overall assessment.

Monitoring of incidents provides management information to assist not only in safeguarding staff well-being but also in improving services to customers, estimating and reducing the costs incurred by violence, thereby increasing profitability, and for evaluating interventions implemented to reduce the risk from violence. Additionally, monitoring and keeping records of violent incidents provides evidence in case of any legal action.

The types of information that can be obtained from the monitoring concern (i) the numbers of incidents occurring, (ii) their nature in terms of, for example,

who was involved, when and where they occurred, (iii) the structure and the processed involved in what happened during the incidents, (iv) the effect of incidents in terms of physical injuries and damage, psychological injuries and effects, and the commercial implications, and (v) what actions were taken by the organisation.

Identifying accurately the extent of violence that occurs in an organisation, or within a particular profession, can be extremely difficult. A number of factors come into play:

- people have varying ideas of what constitutes violence (Dickson, Leather, Beale & Cox, 1994b: licensees);
- some people may accept a degree of violence as "part of the job" (Painter, 1987: caring professions);
- some may not wish to admit to having experienced a violent incident because they feel that their inability to control the situation reflects on their professional competence (e.g. Breakwell & Rowett, 1989: social workers);
- some feel that there may be repercussions if they report an incident, either from the perpetrator or from their employer (e.g. Arnetz, 1998: accident and emergency staff);
- other people may exaggerate the amount of violence they have to deal with to enhance a "macho" or "martyr" image.

There is no one straightforward method for organisations to use in monitoring violent incidents. Incident reporting is now accepted as the fundamental requirement, recommended in sector guidance documents (e.g. HSAC, 1997: health services; HSE, 1995a: retail), but it has limitations that have to be recognised when using the information obtained for risk assessment. All methods of researching the problem of violence within an organisation have both advantages and limitations so that a variety of methods and multiple sources need to be used to complement each other, as demonstrated, for example, in studies by Eisele, Watkins & Matthews (1998), Leadbetter (1993), and Warren et al. (1999). Table 2.1 summarises the types of information that can be obtained from different sources.

Incident reporting systems

Reporting systems gather information soon after the incident has occurred so that memory deterioration effects are minimised. However, information is generally limited to the reporting employee's point of view. The amount of

Table 2.1 Benefits and limitations of methods of gathering information about violent incidents

Method	Numbers	Amount of detail	Reliability	Effects
1. Reporting systems	Approximate numbers of serious incidents but not minor ones	Variable, limited by time taken to fill in long forms	Short time after incident; only employee's point of view	Short term but no long term consequences
2. Sampling studies	More accurate numbers of relatively minor incidents	Purposely limited	Short time after incident; only employee's point of view	Some short term but no long term consequences
3. Team manager summaries	Include relatively minor incidents	Purposely limited	Time variable; only team point of view	Some short term but no long term consequences
4. Staff surveys	Numbers affected by memory effects; access to unreported incidents	Variable	Sometime after incidents, so memory effects; miss people most affected	Some longer term effects on staff well-being, job satisfaction, etc.
5. Staff interviews, focus groups etc.	No reliable numbers	General and specific; interaction allows exploration of detail	Sometime after incidents, so memory effects; small number of people's views	Some longer term effects
6. Company records, e.g. absenteeism, exit interviews; summary occ. health reports	Measures of staff behaviour, not incidents; access to incidents not otherwise reported	Variable	Variable; some objective measures of post incident behaviour	Some long term effects, including psychological, that other methods miss
7. Video recordings	Only incidents that occur in observed areas	High level of detail when in view, none at all when hidden	Immediate objective evidence	Immediate physical effects but no long term effects
8. Direct observations	Only incidents that occur in observed venues	High level of detail	Immediate recording; no reporting bias, but observer bias	Immediate physical effects but no long term effects
9. Police records	Only incidents in which the police become involved	High level of detail	Evidence from all parties involved and other witnesses	Variable

detail recorded is variable, limited by the time it takes to fill in long forms. Staff are more likely to take that time for serious incidents than for minor ones. Reports include short term but not long term consequences in terms of physical or psychological injury. This method is used in a large number of studies (e.g. Arnetz, 1998; Jenkins et al., 1998). The limitations of reporting systems are discussed in detail in Section 2.2.

Sampling studies

Sampling studies, as advocated by Beale, Cox & Leather (1996), are designed to overcome the reluctance of staff to report incidents because of the time it takes to fill in the standard forms. They can utilise simple tick box "diaries", which are filled in every day for a limited period, say 1 or 2 weeks, and repeated regularly, maybe every six months. Evidence for restricting the duration of this reporting is provided by Arnetz (1998) who found that, even with simple report forms designed to make reporting easy, reporting rates from hospital accident and emergency staff declined sharply after the first month.

Since the recording of each incident takes a very short time in sampling studies, the information should reflect more accurately the numbers of relatively minor incidents than do formal reporting systems. Details are purposely kept to a minimum and are recorded soon after incidents, but again are limited to the reporting employee's point of view. Some short term effects may be recorded but no long term consequences.

Few other researchers have reported on, or suggested, this type of study, although Leadbetter's (1993) research regarding assaults on social work staff included a two-week diary exercise for recording assaultive and abusive behaviours in adolescent residential units. A study of this kind is discussed in Chapter 3.

Team manager summaries

In diverse organisations with semi autonomous teams, such as retail chains or community health trusts, team manager summaries giving very brief details of all incidents dealt with by the work team, including relatively minor incidents, can overcome some of the problems of reporting for individuals remote from the health and safety department. This helps to give central management a more realistic view of any repeated "low level" violence where individual incidents are not rated as serious enough to be reported formally

but the cumulative effects can be very severe (Scott & Stradling, 1994). Detail is recorded soon after incidents but is purposely limited, and is from the team point of view only. Some short term effects may be given but not long term consequences. This type of recording is recommended by the author and her colleagues in the national guidance for community health teams (Leather, Cox, Beale & Fletcher, 1998).

Staff surveys

Anonymous surveys of staff might access incidents that otherwise would not be reported because of time constraints or staff not wanting management to know about individual incidents. A more accurate overall picture in terms of numbers of incidents might, therefore, be gained from surveys. However, accuracy can be affected by memory if, for example, people are asked to recall the numbers of incidents that have occurred during the past year. There may also be memory effects in recalling detail about any incidents if they occurred some time before the survey was carried out.

One of the greatest benefits of staff surveys is that they can reveal longer term effects on, for example, staff well-being, job satisfaction and organisational commitment (e.g. Leather, Lawrence, Beale, Cox & Dickson, 1997). In addition, changes over time can be detected if similar surveys are repeated at regular intervals. However, one drawback is that staff surveys miss people who have left the job because of violence. In other words, they miss those who have been most adversely affected either physically or psychologically. Staff surveys are used commonly in the literature (e.g. Arnetz, Arnetz & Pettersen, 1996; Farrell, 1999). A study of this kind is discussed in Section 3.2.2.

Interviews

Interviews of staff, individually or in groups, can provide a general overall picture of staff experience of, and concerns about, aggression and violence within an organisation or team, or at a national level (e.g. Beale, Fletcher, Leather & Cox, 1998; Breakwell & Rowett, 1989). Since this method is interactive, interviewers can adapt the questioning to explore at a general level or at a deeper level as the main issues emerge. This input is vital for good risk assessment and for designing effective questionnaires for larger studies that elicit an optimum amount of relevant information. Interviews do not, of course, give accurate numbers of incidents occurring.

It is necessary to be aware that all the methods mentioned so far rely on self-report which can suffer not only from memory effects but also from a "social desirability response bias". This means that people have a tendency to respond in a way that they perceive to be socially acceptable to those who will receive the information. In relation to interpersonal violence and aggression, people have a greater willingness to admit victimisation and a lowered tendency to admit perpetration with increasing severity of violence (Saunders, 1991).

Company records

Further information about violent incidents and their effects can be sought from other company records or procedures, such as absenteeism records, exit interviews, summary occupational health reports. Such methods are not systematic so cannot be expected to produce reliable numbers of incidents occurring, but they might access incidents that are not otherwise reported and may also discover some long term effects that other methods miss, particularly if people leave because of repeated "low level" violence in the job. Some of the records give objective measures of behaviour resulting from violent incidents, such as number of days sick leave taken, or the proportion of visits to occupational health that result from violence. Such methods are infrequently reported in the literature, although Eisele et al. (1998) used company records because no incident reports were available.

Videorecordings

Video recordings are used extensively for obtaining evidence about violent incidents and crimes, and they provide immediate objective information. However, they only record incidents that occur in observed areas, usually where a high incidence of violence is expected. In addition, people intent on causing trouble may take pains to avoid being caught on camera. For example, one licensee in the present study reported:

> "The situation is now out of hand. (Assailant) continues to threaten my family and staff. For fear of reprisals people will not give statements. (Assailant's) actions always take place out of the view of cameras and video recording equipment."

Video recordings provide a high level of detail when the action is in view, none at all when it is in an obscured area. They record some immediate physical effects but no long term consequences. Video recordings are much more

useful in enclosed settings, such as mental health wards (e.g. Crowner, Stepcic, Peric & Czobor, 1994), or very controlled premises, such as banks, than they are in open social settings or places where violence is relatively uncommon.

Direct observation

Direct observation has been used by a number of researchers, particularly within licensed premises (e.g. Graham, La Rocque, Yetman, Ross & Giustra, 1980; Homel & Clarke, 1994; Homel, Tomsen & Thommeny, 1992). This type of research can provide very detailed information and reveal features of the incident that no other method can access. Wells, Graham & West (1998), for example, were able to study how staff behaviour initiated or exacerbated some aggressive incidents.

However, there are a number of drawbacks to direct observational methods. Researchers may spend many hours of observation when no incidents occur. Homel et al. (1992) spent 300 hours of observation to collect 32 incidents. Such expenditure of time is only practicable for venues known to have a high frequency of violent incidents, but this has implications for observer safety. The presence of observers can also affect the environment or alter the dynamics of situations. Further, there may also be observer bias, or problems with seeing only part of the action from the observation position, as with video cameras.

Police records

Police records can provide a high level of detail about individual incidents as they contain evidence from all parties involved and other witnesses. Of course, they only provide information about incidents in which the police became involved, and many incidents are not reported to the police because they are not considered serious enough or because the victims fear reprisals from the assailants. This is illustrated by comments made by licensees in the present study:

> "She is a member of the local family of troublemakers on the estate, which is why we didn't bother with the police."

> "It's very worrying these people are, I've found out [that they are] always involved in trouble. You never know what they're going to do next. I've got the video of the knife being dropped and hidden, but I'm scared to hand it over to the police for fear of reprisals."

Another illustration is provided by the Victorian Community Council Against Violence (1990) survey of nightclub patrons in Melbourne. This revealed that, while 22% of respondents who had been victims of actual violence in late night venues sought formal medical treatment, only 16% reported the incident to the police.

In England and Wales, only around half (51%) the robberies and woundings reported to the 1998 BCS were recorded by the police (Mirrlees-Black et al., 1998). Reasons given by victims for not reporting acquaintance or stranger violent crime were that the incident was too trivial, that it was private and had been dealt with by the victims, that the victims felt the police would not be interested or could not do anything, that they feared reprisal, or that it was inconvenient to report.

Police statistics can be useful in evaluating measures that are introduced by, or in collaboration with, the police. Burns, Flaherty, Ireland and Frances (1995), for example, unexpectedly found that frequent visits by police to licensed premises, instead of acting as a deterrent, actually increased the number of crimes that were recorded.

Police records are, therefore, useful for investigating particular incidents, for reviewing security at individual premises, and for checking the effectiveness of measures relating to policing practice, but are too detailed for deriving overall principles and common occurrences. Further drawbacks of both the police records and video recordings for finding common patterns is the sheer time it would take to examine the volume of evidence for sufficient numbers of incidents to provide statistically valid results (see Felson & Steadman, 1983: p. 62).

2.2 INCIDENT REPORTING SYSTEMS

The use of incident reporting systems provides several pragmatic advantages in studying the nature of violent incidents. First, organisations are increasingly obliged to maintain such systems to comply with legal requirements. Second, there may be access to a large number of *real* incidents in a wide variety of locations. Third, each incident is reported soon after it occurs and potentially at a useful level of detail.

RIDDOR 95 requires employers to report, to either the HSE or the local authority, depending on industry sector, violence done to a person at work if it results in (i) workers suffering death or specified major injuries, being in hospital for more than 24 hours or being off work for three days or more, following an assault that has resulted in physical injury, or (ii) any other person being taken to hospital from the scene. Employers also have to maintain their own records of such incidents. Compliance with this legislation requires that organisations have effective systems established to enable their staff to inform them that incidents have occurred, and to record sufficient information to pass on to the HSE or local authority.

There has been disappointment with the requirements of RIDDOR 95. Beale, Cox and Leather (1996) make the criticism that reporting is entirely dependent on the physical outcome of the incident and not on its nature. This appears to undervalue the serious psychological damage and lasting distress that can be caused by an incident that was very frightening but did not result in major physical injury. Further, while there is provision in the regulations for the reporting of "dangerous occurrences" that can shed light on the processes that can lead to accidents, these do not include potentially violent incidents. However, it would be unrealistic to expect all minor incidents to be reported nationally because of the unmanageable workload for the HSE, local authorities and some employing organisations, and a limit has to be set at some level. The major benefit of RIDDOR 95 is that it has acted as an impetus for organisations to establish internal reporting and recording systems that can be used as a valuable learning resource.

Incident reporting systems, then, have to be the mainstay of any monitoring systems. Although their limitations have to be recognised, and their findings supplemented by other methods, reporting systems can be designed to provide a wealth of information about patterns in violent incidents that can benefit organisations and their staff in reducing the risks from future violence (Beale, 1999).

2.2.1 Design of reporting systems

Incident reporting systems serve two main purposes: (i) to trigger help for staff involved in a violent incident, and (ii) to record information about the incident. Effective reporting systems, therefore, have to incorporate two stages. The first extracts sufficient information for the organisation to provide timely assistance, the second extracts more detailed information to

determine further support required by the staff involved, to complete company records and to be used for future learning. Good systems allow employees involved in incidents to report at either of the two stages.

Stage 1. If employees are asking for immediate help from the organisation, then obviously they enter the system at this stage, and facilities for rapid and appropriate action have to be in place. Employees need to be aware of how to access this help both inside and outside working hours. Once the immediate help has been provided, further details of the incident are recorded in Stage 2.

Stage 2. If employees do not feel that they require immediate help, they can report at the second stage, providing details to the organisation so that relevant individuals, such as the health and safety advisers, can gain an accurate picture of the incidents that employees are encountering. The provision of such information may also be important at a later stage if the incident turns out to be more significant than first realised. For example, employees may develop physical or psychological symptoms at a later stage, or the incident may have repercussions leading to more serious violence, or it may be part of a pattern that can be identified.

Good systems have well defined procedures to be followed when an incident is reported. These ensure that all relevant personnel can be informed so that they can take appropriate action. Relevant personnel include the line manager, the health and safety department, security, occupational health, perhaps auditors and estates departments. It is important for all the different departments to follow integrated and agreed procedures, so that action is co-ordinated rather than piecemeal, thus avoiding either duplication of action or lack of action. Discussion of appropriate actions is beyond the scope of this thesis, but they have been outlined by the author and her colleagues elsewhere (Beale, Leather, Cox & Fletcher, 1998; Leather, Cox, Beale & Fletcher, 1998).

Efficient systems require a designated initial contact point for the reporting of incidents, such as the health and safety department or a security monitoring station. However, it is also necessary for the system to have sufficient redundancy built in to ensure that if the incident is reported to someone else, for example, the line manager, then that person will trigger the whole system. Organisations cannot expect employees who have just

experienced a violent incident to have to contact more than one department. Care has to be taken, however, that information is not passed on that would breach confidentiality, for example from an occupational health consultation.

Reporting instruments

Reporting can be via paper forms or computer based, depending on access to computers and familiarity of reporting employees with computer systems. Even those that are familiar with the computer systems may need support while filling in the details because they are recounting what might have been a very painful experience. Support should always be available to help anyone upset by an incident to fill in a reporting form.

The basic information required in incident reports forms is now determined by RIDDOR 95 although most work published in the academic literature predates this. However, to provide the most useful information from an organisation's point of view, forms need to be customised to extract information specific to the setting or type of work, as advocated by Nigro & Waugh (1996), for example. In addition, the questions and design of the form have to be tailored for any additional use that the organisation wants to make of the information, for example if it is to be used it for making insurance claims, or monitoring the action taken by the organisation following an incident.

Analysis

Analysis and design of forms are mutually dependent. The types of questions asked need to be designed to produce information appropriate to the analytical techniques available and most suitable. However, it has to be borne in mind that it is rarely practicable to include sophisticated psychological measures in an operational reporting system because the person reporting the incident may be very upset as a result of the incident. Additionally, reporting might have to be done over the telephone for incidents that are not very serious and do not necessitate a visit to distant premises. This determines that questions have to be very straightforward and do not depend on a scale that has to be seen, or is long-winded to explain.

Communication

Other important aspects of incident reporting systems involve communicating with staff. Regular reminders are needed on how to report and the use made of reports. Staff have to be assured of confidentiality and

assistance in completing forms. Results have to be fed back to staff both to demonstrate that the organisation is taking the issue seriously and making use of their reports, and to provide staff with the information they need to reduce the risks from violence.

2.2.2 Advantages of incident reporting

Incident reporting has the obvious benefit for the staff involved that it should trigger help and support from the organisation. The advantages of incident reporting systems for the organisation, in terms of analysis of the information concern:

- Identification of vulnerable people, places, times and situations;
- Details of the nature and development of common incidents, providing input for the design of appropriate intervention strategies;
- Detection of changes in the frequency or nature of incidents over time, allowing some evaluation of measures implemented;
- Identification of new factors in incidents, such as an increase in the involvement of drugs, or factors becoming less important, such as a decrease in the involvement of football fans in incidents;
- Provision of relevant input into staff training in terms of both statistics and real (but usually anonymised) examples;
- Contemporaneous evidence about the incident for future reference, perhaps for legal or insurance purposes, or if there are unexpected developments or repercussions at a later date.

2.2.3 Limitations of incident reporting

It has to be recognised that detailed reporting systems can take years to establish uniformly throughout an organisation. They also take time to build up sufficient numbers of incidents for reliable statistics to be obtained. Results taken over a short time period are likely to be unrepresentative, giving undue import to some features or types of incidents while missing other important details. Reporting systems also suffer from a range of other limitations which demand that they should not be used alone in determining the extent or nature of violence or the assessment of risk.

Subjective view of the members of staff

One obvious criticism of incident reporting systems is that they usually represent only the subjective view of the members of staff involved in the incident. This is obviously an incomplete picture of the whole incident

because other parties, or witnesses, might have viewed it very differently. Further, the report may be affected by a social desirability response bias (Gosling, John, Craik & Robins, 1998; Saunders, 1991), as already discussed. However, when treating violence as a health and safety issue, rather than simply an objective academic subject, it is important to remember that it is the effect of incidents on members of staff that is of prime importance. Their perceptions of the event are important both in the way that they are treated after the incident and in how a repetition of the situation may be avoided. Reports may also suffer from eye-witness recall reliability problems such as selectivity, stereotypical assimilation, intergroup biases and the effects of increased arousal (Christianson & Hubinette, 1993; Hollin, 1984; Lindholm & Christianson, 1998a, 1998b).

Amount of detail

There will always be a conflict between the amount of information that is required for proper analysis of incidents by researchers and the amount of time that employees can afford to spend completing reports. A form that takes too long to complete will militate against less serious incidents being reported. A compromise has to be reached.

Short term information only

Reporting systems by themselves only record the consequences of incidents up to the time of reporting, which, under RIDDOR 95, has to be within 10 days. Serious physical injury or obvious damage can be followed up by the organisation's support systems, but consequences that are less obvious at the time may be missed. The most likely outcome to be missed in this way is psychological damage, which may not become apparent until well after the incident.

Information on psychological harm

The normal time scale for the reporting of incidents does not allow for a valid assessment of the consequent psychological harm. While physical injury is normally obvious within a short time, psychological harm, in the form of post trauma reactions and, more particularly, post traumatic stress disorder (PTSD), may not be evident until some considerable time later (Brady, 1999). This time delay undoubtedly results in the loss of information about this type of outcome in reporting systems. It is also likely that a "macho" organisational culture could make people reluctant to admit to psychological problems, as found by Kopel and Friedman (1997), for example, in the police.

In addition, it is becoming increasingly recognised that repeated exposure to abuse, threats and minor acts of aggression can have a cumulative effect and may lead to prolonged duress stress disorder (PDSD) similar in nature to the more widely known PTSD (Scott & Stradling, 1994). However, the individual acts of aggression may be considered too minor to report, and the threat to the psychological well-being of the employees goes unrecognised. It is in these situations, where aggression and violence constitute a chronic stressor, rather than an acute stressor, that sampling strategies that supplement on-going reporting become so valuable.

Under-reporting

It is well established in the literature that reporting of both accidents and violent incidents at work suffer from substantial under-reporting. Painter (1987) stated that "whenever a problem of violence has been recognised by employers or unions and whenever this has been investigated, there is considerable under-reporting of violence in the workplace."

There are a number of contributory factors involved in the under-reporting of incidents, such as (i) lack of knowledge about the reporting system, (ii) time pressures, (iii) an unhelpful organisational culture or team climate, (iv) a professional culture of coping, (v) differing perceptions of what constitutes a violent incident, and (vi) fear of reprisals.

Perhaps the most overlooked reason for under-reporting is that victims simply do not know how to report or, if they know how to report, they are not aware of the purpose of reporting and what the reports are used for. Organisations have to ensure that staff understand the mechanics and purpose of the system, through training and awareness campaigns, and make reporting procedures easy and accessible, as suggested by Leather, Cox, Beale & Fletcher (1998).

Employees often find that it is too time consuming to report incidents formally, particularly in occupations where there is a high frequency of minor incidents of violence. This has been found for healthcare staff, for example, both in the community (Beale, Fletcher, Leather & Cox, 1998) and in accident and emergency departments (Arnetz, 1998).

Employees have to see some benefit to themselves to take the time and trouble to report an incident. The benefits are obvious for incidents where

there has been injury necessitating time off work, or damage requiring repairs, or where the police are involved and legal action may follow. Other incidents may have been equally upsetting for employees or customers but have had little physical outcome and require less obvious management action. Reporting of such incidents may elicit little in the way of immediate action or support from management, so may not be seen as worthwhile.

More seriously, the organisational culture, or the team climate, may cause employees to expect that reporting will actually produce a negative reaction, such as questioning of their professional competence. Arnetz (1998) found that accident and emergency staff did not report all incidents because they were afraid of being blamed for allowing them to happen. George (1993) was unable to use examples of assaults on social workers in his article because the victims were afraid of being recognised by their employers and jeopardising their careers. Breakwell and Rowett (1989) found that social workers considered the distinguishing characteristics of their colleagues who had been assaulted as "more provocative, incompetent, authoritarian and inexperienced", in other words they thought it was partly their own fault.

Closely allied to this is a professional culture of coping in one of two ways. Victims might feel themselves that they have failed professionally in not being able to prevent the incident occurring, and are reluctant to admit to that failure. Alternatively, incidents of violence are thought of as inevitable in the job and professionals feel that they should not need to report incidents because they ought to be able to cope by themselves. This latter occurs both in caring professions and in "macho" cultures where the attitude is that "if you can't stand the heat, get out of the kitchen!". In other words, employees may accept a certain amount of violence as "part of the job" (Beale, Fletcher, Leather & Cox, 1998; Kopel & Friedman, 1997).

People's ideas about, and tolerance of, violent behaviour varies widely. Some regard abuse and shouting as violence while, at the other extreme, some do not regard fighting as violence unless it involves a weapon or more than two people (Dickson et al., 1994b). Such differences of opinion inevitably affect employees' decisions about whether to report a particular event. Similarly, what they think their managers will regard as violence will also affect that decision, as highlighted by George (1993). Painter (1987) noted that employees within public services exercise a high level of tolerance towards those who abuse them at work, citing such factors as unemployment, ill-

health, poverty, cuts in services, staff shortages and long queues as mitigating factors. Similarly, there is evidence that public house staff make allowances for the effects of alcohol, for special occasions, family circumstance or known character (Beale, Lawrence, Leather & Cox, 1997). In some service industries, employees might feel that taking further action would lose customers, particularly in areas with close-knit communities and strong family ties.

Employees may be reluctant to report incidents for fear of reprisal, either from a violent customer or client, as already discussed regarding reporting to the police, or from other employees involved in the incident. This is especially salient where the aggressor is another employee. Research into bullying at work has cited this as a particular problem, because complainants are uncertain of how management will view their complaint (e.g. Quine, 1999; Rayner, 1997).

Victims may also be uncertain of the correctness of their own conduct in an incident. As a social worker stated: "If you or a colleague have to deal with a violent client, it's not clear whether you would be justified in using physical violence to sort the problem out ... It may not be possible to know whether or not you had used reasonable force until a case is heard before a court of law." (George, 1993).

All these causes of under reporting point to the importance of a supportive culture that encourages mutual learning from problem occurrences rather than a condemnatory culture of blame and recrimination. People will only report incidents if they feel safe to do so and if they feel they will get some benefit from reporting.

Reporting phenomena

Many apparent trends seen in reporting of incidents may not reflect trends in the actual occurrence. Factors that can affect the number of incidents reported include awareness campaigns, widespread training about violence, changes in organisational structure, changes of personnel and changes of policy. Other factors that might affect reporting are increased media coverage of similar problems, civil and criminal court proceedings and changes in legislation.

Information on successful strategies

Reporting systems usually only obtain information on situations where there has been a breakdown in acceptable behaviour and violence has resulted. They fail, in general, to gather information about situations that were potentially dangerous but were handled successfully and defused without violent outcome. Information of this type is essential in the design of effective organisational intervention strategies. Similar considerations apply in the reporting of accidents where the reporting of "near misses" gives insight into how accidents might occur and how they might successfully be avoided (van der Schaaf, Lucas & Hale, 1991). For this reason, some near misses are required to be reported under RIDDOR 95 as "dangerous occurrences".

Reason (1991: 9) suggests that "while incident and accident reporting systems are a necessary part of any safety information system, they are, by themselves, insufficient to support effective safety management. The information they provide is both too little and too late for this longer-term purpose." He suggests that incident reporting is the easy option in measuring the safety of staff, but is inadequate to inform proactive safety management. "Safety, like health, is a difficult notion to pin down and an even harder one to measure. By comparison, unsafe states (like diseases) are all too clearly signalled by fatalities, injuries, physical damage and financial losses. Each of these negative aspects readily translates into numbers of one kind or another. So should we not settle, as many organisations have, for assessing the relative safety of their various activities by the number and severity (actual or potential) of the incidents and accidents they sustain over a given period?"

Rizzo, Pasquini, Di Nucci & Bagnara (2000) agree that many organisations take only a reactive approach to learning, based on the analysis of reports from accidents, incidents, and near misses. They consider this approach to be "too limited, too late, and too slow for supporting an efficient experience feedback", and espouse "a proactive method tailored for introducing human factors in a safety critical company, which is based on a distributed knowledge view of the working processes". They claim that the method "stresses the positive face of safety" and "should allow a positive return of experience from the human practices". While such a proactive approach is much to be welcomed, and the practice of safety be positively reinforced in daily working, learning from those cases where things have gone wrong, to a lesser or greater extent, cannot be dismissed in this way. Good safety

practice utilises as many complementary sources of information as possible, optimising the benefits and recognising the limitations of each source.

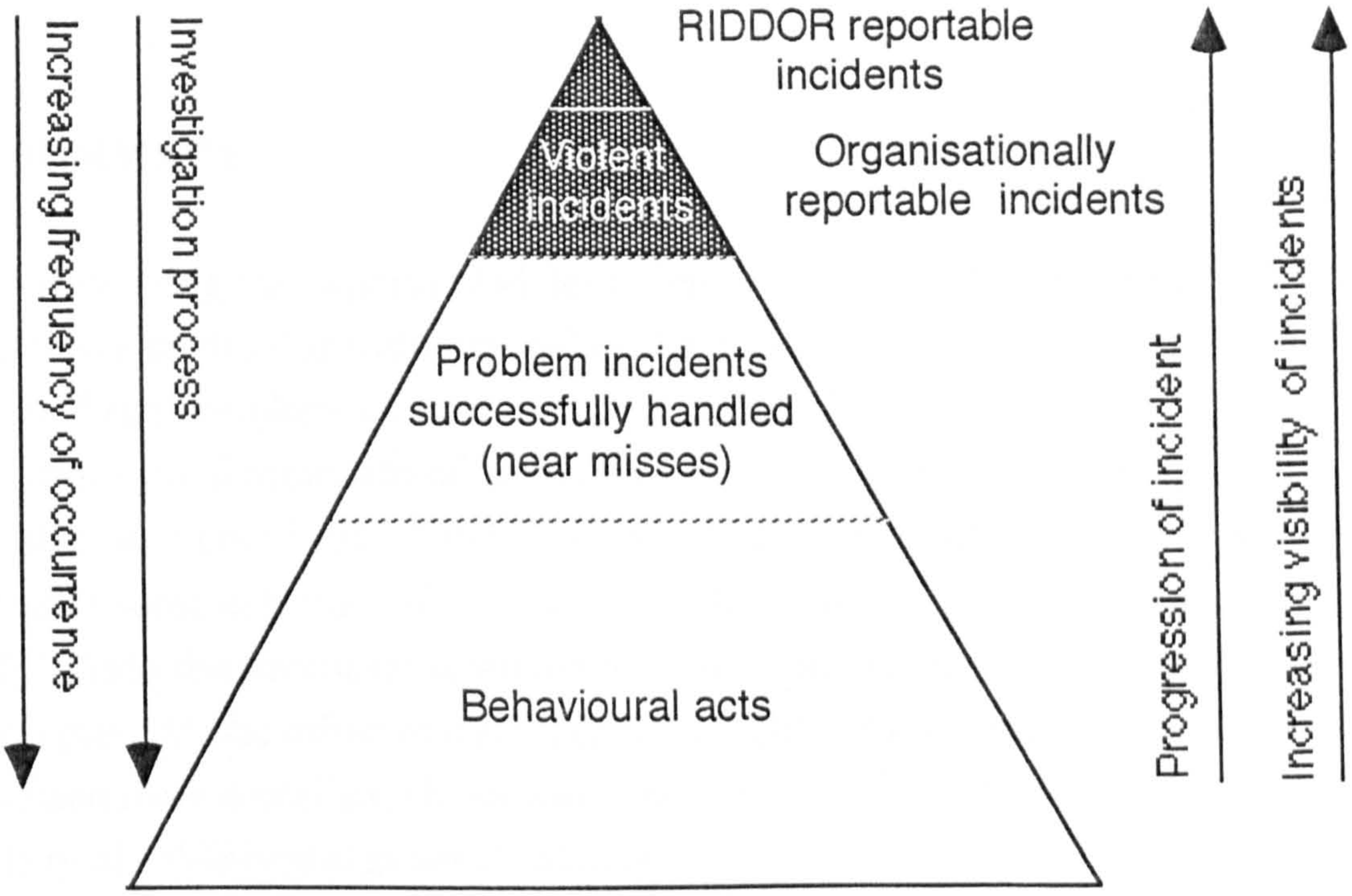
Good risk assessment takes account both of incidents that have occurred and of those that might occur. It is the potential for harm that must be anticipated and, if possible, eliminated (see, for example, Leather, Cox, Beale & Fletcher, 1998). Experienced staff commonly have insight into those situations that could put them most at risk, often because they have been in such situations and felt that something almost went wrong, or would have gone wrong if one thing had been different. It is this insight that near miss reporting attempts to tap.

Van der Schaaf (1991) describes the qualitative iceberg model, where actual accidents are the "tip of the iceberg" that has a much larger base made up of the numerous behavioural acts that constitute errors but are followed by recovery without an accident occurring, with the near misses in between. He suggests that near misses may provide an optimum between highly visible (and detectable) but rare accidents, and very frequent but almost invisible behavioural acts, and that they are therefore worthwhile collecting. An adaptation of this model for violent incidents is given in Figure 2.1.

Van der Schaaf (1991) points out that the utilisation of this model makes a number of assumptions. Adapted to the model for violence, these include that incidents progress from the bottom to the top, that is, from more minor behavioural acts to the serious aggressive actions that constitute a violent incident, so that the chances for preventing the violent incident decrease from bottom to top of the triangle. This accords with the model of escalation of aggressive incidents described in Section 1.2. It also assumes that both minor and serious incidents have similar origins and root causes. It would be appropriate, for example, when investigating violent arguments at a supermarket checkout, to examine any problems with customers at checkouts that have been resolved satisfactorily; it is less likely to be appropriate when investigating armed hold-ups at supermarkets.

A further assumption is that investigation will always try to get as far towards the bottom of the iceberg as possible and not stop at superficial descriptions of only the immediate events leading to a violent incident and its short term consequences. This accords with the theoretical perspective outlined in Section 1.2 which encourages examination of aspects of the social

Figure 2.1 A qualitative iceberg model of the relationships between violent incidents, near misses and behavioural acts (adapted from van der Schaaf, 1991)



and physical environment and the normal working practices and procedures that could trigger aggression.

In order for staff to be willing to report the minor incidents and the near misses, there has to be a supportive organisational culture, which encourages mutual learning, a high level of trust, and no fear of blame. Additionally, the number of incidents reported should not be used as a (negative) measurement of performance. Lucas (1991) points out that, for a near miss reporting system to work effectively, there must be assurance of anonymity, and/or forgiveness by management, and feedback of useful information to those supplying the reports. The Confidential Human Factors Incident Reporting Programme (CHIRP) run by the Royal Air Force Institute of Aviation Medicine, for example, depends on a guarantee of freedom from prosecution to encourage pilots to report the errors that might have led to accidents but had been recovered successfully (Lucas, 1991).

Incidents that are reportable under RIDDOR 95 are well defined by their outcome in terms of injury. However, the boundaries between violent

incidents, minor incidents, near misses and behavioural acts that are potential precursors to violence are very ill defined. Effective systems have to be designed to encourage the reporting of events that cover as much of the range of incidents and behaviours as possible.

2.3 SUMMARY

Research using the reports of violent incidents compiled by an organisation, or across a particular industry, takes the middle ground between the broad brush of epidemiology and detailed psychological experimentation. The epidemiological approach of national reporting aims to categorise and quantify at a population level. The data demonstrate that there is a problem, and give some estimate of its extent, but they cannot provide sufficient insight into the processes involved to suggest appropriate intervention strategies. At the other extreme, some insight into these processes can be obtained from social psychological experiments but these often lack ecological validity and generalisability.

Despite the acknowledged limitations of incident reporting systems, there is an abundance of information that can be obtained and used for organisational learning. There are also several pragmatic advantages in using incident reporting systems to study the nature of violent incidents. First, organisations are increasingly obliged to maintain such systems to comply with legal requirements. Second, there may be access to a large number of real incidents in a wide variety of locations. Third, each incident is reported soon after it occurs and potentially at a useful level of detail.

Violent incident reporting and recording have been required since April 1996, under RIDDOR 95. The following chapters describe work carried out using an incident reporting system, established and maintained by the author and her colleagues, which predated this requirement by eight years. The remainder of the thesis goes on to demonstrate that, if properly developed and explored in inventive ways, such a reporting system can be an invaluable learning tool within the wider system for obtaining information for risk assessment and risk management.

CHAPTER 3: ESTIMATING NUMBERS OF INCIDENTS

Reporting systems essentially provide information concerning three aspects of violent incidents: the ***numbers*** of incidents occurring, the ***nature*** of incidents and the ***timing*** of incidents. These aspects are considered in this and subsequent chapters in relation to the Keeping Pubs Peaceful Incident Reporting System (KPP IRS) established and maintained by the author and her colleagues for the managed licensed premises owned by Allied Domecq Retailing (ADR). The KPP IRS operated between 1988 and 1998. The author worked on the reporting system from 1989 and had overall responsibility for developing the system from 1991.

After outlining the operation of the KPP IRS, this chapter presents the numbers of incidents reported through the KPP IRS and then examines how accurately these reflect the numbers of incidents that actually occurred. It introduces a framework for assessing the accuracy of the reporting system as a diagnostic tool for the occurrence of violent incidents within licensed houses, and briefly describes two subsidiary studies utilised in this assessment. Finally, it explores the variation in the numbers of incidents reported according to their seriousness. The chapter also discusses some of the problems encountered in carrying out long-term research with a commercial organisation.

The benefits and limitations of incident reporting systems have already been considered in Section 2.2. The acknowledged problem of underreporting of violent incidents to employing organisations (Section 2.2.3) has to be expected in the licensed trade, as with other professions. This chapter discusses whether appreciable underreporting of violent incidents adversely impacted on the effectiveness of the incident reporting system as a diagnostic tool. It also examines the expectation that underreporting would be a lesser problem for serious incidents than for relatively minor incidents and, therefore, that the numbers of reported incidents that licensees regarded as serious would reflect more closely the number actually occurring than would the numbers of reported incidents regarded as minor.

3.1 THE KEEPING PUBS PEACEFUL INCIDENT REPORTING SYSTEM

During the period covered by this study, Allied Domecq Retailing (ADR), the major international food and drinks retailer, operated around 4500 licensed premises spread throughout England, Wales and Scotland. These premises comprised a wide variety of public houses in terms of size, style, location and clientele. Approximately 2500 of these premises were run as managed houses, that is, the licensees and their staff were employees of the company. Initially, ADR's public house operation was organised through six semi-autonomous regional trading companies, but was reorganised in 1995 into two nation-wide trading companies according to the types of premises. Details are given in Appendix 2.

The SEP Group worked with ADR from 1986 to 1999 to develop an integrated system to manage the problem of violence in their public houses as a risk to the health and safety of their staff. Following an initial violence audit, the SEP Group made a number of recommendations including the establishment of an enhanced incident reporting system. The SEP Group designed and implemented the KPP IRS to facilitate the reporting of violent incidents that occurred in the managed houses of ADR. They maintained the system from 1988 to 1998. The KPP IRS, its history and its function within the integrated organisational strategy for ADR are described in detail in Appendix 2.

When a violent, or potentially violent, incident occurred at an ADR managed house, the licensee was expected to contact the company and report the incident. After the provision of any immediate assistance required, a regional security manager talked to the licensee either by visiting the premises, for a more serious incident, or by telephone, for an obviously minor incident. The regional security manager was responsible for completion of the Keeping Pubs Peaceful Incident Report Form (KPP IRF) either directly by the licensee, or by himself in consultation with the licensee and any other staff involved in the incident. A copy of the completed KPP IRF was sent to the Incident Report Centre at the University of Nottingham where data from the report forms were coded and analysed. Dissemination of results, and their implications for ADR, was via summary and focused reports for ADR management (see Appendix 1), response to specific queries for interrogation of the data, and incorporation of results

into the on-going training for licensees (Leather, Beale, Lawrence & Maxwell, 1996).

The definition of violence that was adopted for the reporting of incidents (Farnsworth, Beale & Cox, 1989) was:

> Any behaviour deliberately intended to damage staff or customers (or pub/brewery property) either physically or psychologically (through abuse or threat).

This definition was intended to generate information about as wide a range of incidents as possible by focusing on behaviour rather than just on outcome, in contrast to RIDDOR 95, as discussed in Section 2.2. It was hoped that this would encourage licensees to report some "near misses", that is, potentially violent incidents that were managed successfully, as discussed in Section 2.2.3 and explained in the leaflet circulated to licensees (see Appendix 3). The definition specifically included non-physical violence, in order to encourage a recognition of the importance of psychological damage as well as the more obvious physical injury. It also included attacks on property as well as on people, since these can be closely associated, as discussed in Section 1.3.2.

3.2 NUMBERS OF INCIDENTS REPORTED THROUGH KPP IRS

The numbers of violent incidents reported through the KPP IRS are given in Table 3.1. The wide variation in the numbers for the different years suggests that they cannot be taken to represent exactly the numbers of incidents actually occurring but that other explanations for this variation must be sought. The numbers can be seen to reflect, to some extent, the development of the system and organisational changes within ADR, which are explained in detail in Appendix 2. The numbers increased during the establishment of the system throughout the six trading companies of ADR between 1989 and 1991, then suffered a setback during 1991 due to the long term illness of a key security manager. Reporting increased in parallel with increased publicity and licensee training to reach and maintain a relatively stable state of 300-400 incidents per year between the beginning of 1992 and the middle of 1995.

The disruption caused by the major reorganisation of ADR in autumn 1995 is reflected in the numbers for 1995, but the system was re-established at the beginning of 1996. The effect of an internal reporting system running in parallel from April 1996, following implementation of RIDDOR 95, can be seen in the decline in numbers reported through the KPP IRS in 1997 and 1998. KPP IRS was terminated in the summer of 1998 and incorporated into an enhanced reporting system internal to ADR. This fluctuation in the numbers over time serves to illustrate the dynamic nature of a reporting system, particularly within a widely dispersed organisation, and the dependence on factors other than simply the numbers of incidents actually occurring.

Table 3.1 The numbers of incidents reported through KPP IRS by year of occurrence

Year	Number of reported incidents
before 1989	163
1989	91
1990	138
1991	112
1992	374
1993	398
1994	308
1995	232
1996	316
1997	250
1998	101
Total	**2483**

The years 1992 to 1994, when both the system and the organisation were at their most stable, provided the optimum period for examining the numbers of incidents reported, estimating how those reflected the numbers actually occurring, and calculating the proportion of houses reporting and experiencing violent incidents. The numbers of managed houses within ADR for the three years were 2596, 2380 and 2333. Table 3.2 gives a breakdown of the numbers of houses reporting incidents in each of those years. Incidents were reported by at least 283 (10.9% of managed houses), 300 (12.6%) and 245 (10.5%) houses for the three years, giving an average of

Table 3.2 Numbers of incidents reported per house for each year 1992 to 1994

	Number of houses reporting incidents			Number of reported incidents		
Number of reported incidents per house	1992	1993	1994	1992	1993	1994
1	224	242	210	224	242	210
2	45	39	26	90	78	52
3	10	12	7	30	36	21
4	2	3	0	8	12	0
5	1	2	2	5	10	10
6	1	2	0	6	12	0
Total	283	300	245	363	390	293
unidentified	-	-	-	11	8	15
Total	-	-	-	374	398	308

Table 3.3 Numbers of incidents reported per house for the 3-year period 1992 to 1994

Number of reported incidents per house	Number of houses reporting incidents 1992-1994	Number of reported incidents 1992-1994
1	465	465
2	133	266
3	54	162
4	13	52
5	6	30
6	3	18
7	1	7
8	1	8
9	3	27
11	1	11
Total	680	1046
unidentified	-	34
Total	-	1080

11.3% per year. The maximum number of incidents reported by any one house in any one year was 6.

Over the three-year period 1992 to 1994, 1080 incidents were reported, as shown in Table 3.3. Of these, 1046 were reported by 680 (27.9%) houses, while 34 occurred in houses that were not completely identified. The maximum number of incidents reported by any one house was 11 in the three years. On average, ADR managed houses reported 0.15 incidents per year.

Probability of staff sustaining physical injury

For two of ADR's regional trading companies, it was possible to make a rough estimate of the percentages of monthly paid staff (i.e. managers, assistant managers and relief managers) that sustained physical injury in reported incidents during 1992 to 1994. The figures are given in Table 3.4. The percentages in brackets refer to the individual results for the two trading companies, and are provided to illustrate the consistency across the companies.

Table 3.4 Injuries to monthly paid staff reported during 1992 to 1994 for two ADR trading companies.

Year	No. reported injuries to monthly paid staff	No. full time equivalent monthly paid staff	Percentage monthly paid staff reporting injury (for the two separate trading companies)
1992	101	2030	5% (5%, 5%)
1993	108	1994	5% (6%, 5%)
1994	61	1811	3% (4%, 3%)

The percentage of monthly paid staff sustaining physical injury in a reported violent incident in 1992 or 1993 was 5%, and in 1994 was 3%. Whether this was a real improvement of the situation or a change in reporting behaviour was difficult to determine. Extensive KPP training was taking place within these two companies, so it is feasible that a real improvement did occur. Similar calculations for other staff were not possible because the casual and fluid nature of much of the workforce in the licensed trade prevented reliable numbers of employees being obtained.

3.3 KPP IRS AS A DIAGNOSTIC TOOL

3.3.1 Accuracy of a diagnostic test

It was important to assess the power of the KPP IRS as a means of quantifying the problem of violent incidents, in order to use the results properly in risk assessment. In medicine, particularly epidemiology, the accuracy of a diagnostic test for a disease or condition is assessed using the criteria of sensitivity, specificity, positive predictive value and negative predictive value (Fletcher, Fletcher & Wagner, 1988). These are explained in Table 3.5. The different criteria assume greater or less importance according to the context in which the test is being selected or used, and the consequences for the patient of a positive or negative test result. This idea is developed further in Section 3.3.3.

Table 3.5 Criteria for the assessment of diagnostic tests

Criterion	Meaning in medicine	Meaning in relation to incident reporting
Sensitivity	Proportion of patients having the disease who tested positive	Proportion of houses experiencing incidents that reported incidents
Specificity	Proportion of patients not having the disease who tested negative	Proportion of houses not experiencing incidents that did not report incidents
Positive predictive value	Proportion of patients testing positive who actually had the disease	Proportion of houses reporting incidents that actually experienced incidents
Negative predictive value	Proportion of patients testing negative who did not have the disease	Proportion of houses not reporting incidents that did not experience incidents

These criteria can be adapted for the assessment of incident reporting as a diagnostic test for the occurrence of violent incidents at a public house, as shown in Table 3.5. The public house was used as the unit for calculation of

these criteria, and the grid shown in Table 3.6 was constructed. It should be noted that the incident cannot be used as the unit for this type of calculation because "the number of incidents that did not occur" is a meaningless concept.

Table 3.6 Reporting as a diagnostic test for the occurrence of a violent incident at a particular venue

	Percentage of houses experiencing violent incident	Percentage of houses *not* experiencing violent incident
Percentage of houses reporting violent incident	**a** Correct reporting Known problem (True positive)	**b** Over-reporting False problem (False positive)
Percentage of houses *not* reporting violent incident	**c** Under-reporting Hidden problem (False negative)	**d** Reporting unnecessary No problem (True negative)

Sensitivity

$$= \frac{\text{Percentage of houses experiencing incidents and reporting}}{\text{Percentage of houses } \mathbf{experiencing} \text{ incidents}}$$

$$= \frac{\mathbf{a}}{\mathbf{a+c}}$$

Specificity

$$= \frac{\text{Percentage of houses } \textit{not} \text{ experiencing incidents and } \textit{not} \text{ reporting}}{\text{Percentage of houses } \textit{not} \mathbf{\ experiencing} \text{ incidents}}$$

$$= \frac{\mathbf{d}}{\mathbf{b+d}}$$

Positive predictive value

$$= \frac{\text{Percentage of houses experiencing and reporting incidents}}{\text{Percentage of houses } \mathbf{reporting}}$$

$$= \frac{\mathbf{a}}{\mathbf{a+b}}$$

Negative predictive value

$$= \frac{\text{Percentage of houses } \textit{not} \text{ experiencing and } \textit{not} \text{ reporting incidents}}{\text{Percentage of houses } \textit{not} \mathbf{\ reporting}}$$

$$= \frac{\mathbf{d}}{\mathbf{c+d}}$$

For a perfect diagnostic test, the values of **b** (the false positive) and of **c** (the false negative) would be zero, and each of the four criteria be 1. However, few tests are perfect and incident reporting is no exception.

In order to calculate these criteria, values for **a**, **b**, **c** and **d** need to be measured. The value of **a+b** is the percentage of houses reporting incidents through the incident reporting system. The value of **b** can be estimated by examination of the incident reports, and the value of **a**, therefore, can also be determined.

As with medical diagnostic tests, information on the negative tests (non-reporting), whether true negative, **d**, or false negative, **c**, is much less complete than that for the positive tests (reporting). The value of **c+d**, the percentage of houses that have not reported incidents, is simply 100-(**a+b**). However, the problem comes in distinguishing whether a house not reporting any incidents should fall into cell **d** or cell **c**, that is, whether there was no problem and reporting was unnecessary, or whether there were incidents at the house but the licensee did not report, constituting a hidden problem (underreporting). One of the main difficulties in determining the extent of underreporting is that the boundary between **c** and **d** is not clear cut because of varying perceptions of what constitutes an incident that warrants reporting. Subsidiary studies are generally required to explore these perceptions and the extent of underreporting.

Underreporting was expected for the KPP IRS in common with most other incident and accident reporting systems, as discussed in Section 2.2.3. Direct evidence for underreporting came from two main sources. First, incident reports sometimes mentioned previous incidents at the house that had not been reported. Second, comments from licensees at KPP training workshops run by the SEP Group (see Appendix 2) revealed that some of the houses experiencing the highest numbers of violent incidents did not report any incidents because of the time taken by reporting. Other methods needed to be used to estimate the amount of underreporting and to explore licensees' perceptions of violence. Two studies, a questionnaire survey and a sampling study, were carried out by the author, and by other members of the SEP Group, in an attempt to quantify the amount of violence experienced in the licensed houses of ADR.

3.3.2 Questionnaire survey

The survey *Working in Public Houses: A Study of the Licensee's Job* was carried out largely by other members of the SEP Group in 1994 (Dickson, Leather, Beale & Cox, 1994b). The author was involved only in the later stages of the study, that is, in cleaning up and analysing the data, and completing the final report. The survey was not designed specifically to evaluate the performance of the incident reporting system, rather, the questionnaire was developed following discussions with ADR personnel and a pilot study undertaken on licensees in the Nottingham and Derby region. The study is described briefly here.

Questionnaires were mailed to the licensees of all 479 houses in the London area of ADR. Licensees were assured that the questionnaire was confidential and that individual responses would not be made known to anyone within the organisation. A stamped addressed envelope was included for the return of the questionnaire directly to the research team. 242 questionnaires were returned, giving a response rate of 51%. Of the respondents, 76% were male and 24% female with ages ranging from 20 years to 62 years (M = 38, SD = 10). Total experience of working in the licensed trade ranged from 6 months to 32 years (M = 11, SD = 7), with tenure in the present unit ranging from 1 month to 17 years (M = 2.5, SD = 3). The distribution of pub category for the respondent licensees reflected the distribution of ADR pubs as a whole, almost half (48%) being broad based locals.

Frequency of occurrence of aggressive incidents

As a small part of that questionnaire, licensees were asked to indicate how often six different types of aggressive incident occurred in their public house. The results are given in Table 3.7. The most obvious result is that the frequency of occurrence of incidents decreased markedly as the physical component and use of weapons increased. In summary, the survey revealed that:

- 55% of respondent licensees reported experiencing shouting or abusive language at least once a month;
- 26% reported experiencing incidents of pushing and shoving at least once a month;
- 11% reported experiencing fights without weapons at least once a month;

Table 3.7 Numbers of survey respondents reporting frequencies of occurrence of different types of aggressive or violent incidents (N = 242) (from Dickson, Leather, Beale & Cox, 1994b)

Aggressive or violent incident	Reported frequency of occurrence						
	Daily	Weekly	Fort-nightly	Monthly	2- to 6-monthly	Less than 6-monthly	Never
Shouting, abusive language	41	51	13	29	38	55	15
Pushing and shoving	4	19	15	25	47	70	53
One to one fight, no weapons	0	4	4	19	46	86	78
More than two fighting, no weapons	0	1	2	6	26	53	149
One to one fight, with weapons	0	0	0	3	12	38	181
More than two fighting, with weapons	0	0	0	2	5	31	196

- 1% reported experiencing fights involving weapons at least once a month;
- only 6% of reporting licensees said that they had never experienced any of these types of incidents, but 32% had never experienced a fight.

Licensees were also asked how often they faced physical attack from their customers. Unfortunately, this wording of the question was somewhat ambiguous so that the results were felt to be unreliable and are not included here.

Underreporting of incidents

The licensees were asked whether incidents had ever occurred in their public house that they had not reported to ADR, and what the main reasons were for not reporting. 62% said they had failed to report incidents that had taken place. Typical examples of the reasons given are shown in Table 3.8. They mirror those found in other studies and discussed in Section 2.2.3, falling into six broad categories concerning the severity of incidents, perceived lack of support from the company, ability to handle the situation locally, handling violence being seen as part of the job, lack of knowledge about the system, and time constraints.

Variation in definitions of violence

A variation in views about what should be reported was evident in that some licensees used the criterion of no one being hurt ("Not considered major enough if someone pushed but not hurt"), others of no one needing hospital treatment ("Didn't feel necessary to report as no hospital cases"). To explore such variation, licensees were asked which of the six types of aggressive incident given in Table 3.7 best represented their own personal definition of violence. The responses were that:

- 21% of the respondent licensees thought that abuse and shouting was violence;
- a further 15% thought that pushing and shoving was violence;
- a further 36% agreed that a one to one fight was violence; but
- 14% required there to be a weapon or more than two people involved in a fight to regard an incident as violence.

Table 3.8 Reasons given by licensees for not reporting violent incidents

Reason	Examples
Incident not considered serious enough (37%)	"Not considered major enough if someone pushed but not hurt" "Didn't feel necessary to report as no hospital cases" "Police not involved, no damage to property or injury caused"
Lack of support from company perceived (20%)	"No action would be taken" "A lot of talk, no real help" "Sometimes its not really worth telling the area manager, he's not really concerned about daily problems" "Because it happens so often you could not be bothered and they don't want to know anyway" "Definite feeling that [company] do not regard too many reports as a sign of positive management" "Seen by upper management as inability to control customers"
Incident handled locally (13%)	"Handled it myself" "Satisfied with own action" "Dealt with at time by people on site" "Usually sorted out without needing assistance"
Dealing with violence considered as part of the job (6%)	"I feel that ejecting or asking customers whose behaviour is unacceptable to leave is the Manager's responsibility" "Part and parcel of the job" "Doing what I am paid to do"
Faulty understanding of reporting system (5%)	"Did not know I had to" "I would not know who to report it to" "Don't think its necessary to report every incident to [the company] - report to area manager should be sufficient"
Reporting too time consuming (4%)	"I would never be off the phone" "Not worth the bureaucracy"

These results serve to illustrate the wide range of views about what constitutes violence, and the consequent difficulties of determining what should or should not be reported.

To allow this exploration of licensees' perceptions of violence, the survey did not give the licensees the definition of violence used in the KPP IRS. This meant that the survey results could not be used as a direct measure of underreporting, that is as a direct measure of the value **c** in Table 3.5. The figure of 62% of respondents who had failed to report incidents is rather a high figure for several reasons:

- the question about failure to report was not related to any particular time period, but to any time in the past;
- it was not possible to tell what proportion of the licensees who said that they had failed to report an incident had reported other incidents; and
- the underreporting might relate mainly to the apparently milder forms of aggression given in Table 3.7, particularly since the question regarding underreporting followed closely the questions about the different types of incident.

Consequently, the figure of 62% can be taken as above the maximum in a range of possible values for **c**. A minimum for the range can be roughly estimated if the fight is taken as the criterion for reporting. 30% of the licensees stated that they experienced at least 2 fights per year, so, at a conservative estimate, 30% of houses should have been expected to report incidents through KPP IRS in one year. This gives a minimum vale for **a+c** of 30%.

Licensees were also asked how much they felt personally at risk from violence. On a scale from 0 ("not at all at risk") to 50 ("extremely at risk"), 24% of respondents indicated that they felt highly at risk from violence, scoring 41-50, while 45% scored above the half-way point of the scale. Although this question did not ask about actual incidents, this 45% might be seen as a rough estimate of the percentage of licensees who felt there was a problem in their house, that is, as a rough estimate for the value of **a+c** in Table 3.5. Combining these three figures suggests a range for **a+c** of 45±15%, i.e. 30-60%. The value of **a** (11%) is already known from the KPP IRS, giving a range for **c** of 19-49%.

3.3.3 Accuracy of KPP IRS as a diagnostic tool

The above study and examination of the KPP IRFs allowed some assessment of the KPP IRS as a diagnostic tool using the criteria explained in Tables 3.5 and 3.6. The corresponding grid for the KPP IRS is given in Table 3.9. The value of **a+b**, the total number of incidents reported, was taken as 11.3% directly from the KPP IRS (Section 3.3.1). Over-reporting, the false positive, **b**, might occur for two main reasons. First, licensees might be so sensitised by reports in the media or company publicity that they report trivial occurrences. Second, licensees might put in false reports in order to make fraudulent claims on the company or the insurance. In the absence of independent evidence that licensees were over-reacting or were making false claims, it has to be assumed that all reports were of real incidents. For the KPP IRS, few reported incidents appeared trivial and, in any case, people who were not present at an incident cannot make a valid judgement about how serious it was (see Section 5.2). In addition, security personnel have thrown doubt on the veracity of only a very small number of reports (3-5). Thus, the value of **b** can be taken as less than 0.5%, giving a value for **a** of approximately 11%.

The value of **c+d**, the number of houses not reporting incidents, was the total number of licensed houses less the number reporting through KPP IRS (i.e. 89%). Underreporting, the false negative, **c**, was very roughly determined from the questionnaire study, probably in the range 19-49%. This lack of accuracy was caused by the interpretation of what ought to be reported (i.e. the boundary between **c** and **d**), and the shortcomings of the particular study. Taking **c** (19-49%) from **c+d** (89%) gives a value for **d** in the range 40-70%.

Table 3.9 KPP IRS as a diagnostic test for the occurrence of violent incidents at public houses in a one-year period

	Percentage of houses experiencing violent incident	Percentage of houses *not* experiencing violent incident
Percentage of houses reporting violent incident	**a** 11%	**b** <0.5%
Percentage of houses *not* reporting violent incident	**c** ~19-49%	**d** ~40-70%

Sensitivity

$$= \frac{\text{Percentage of houses experiencing incidents and reporting}}{\text{Percentage of houses } \mathbf{experiencing} \text{ incidents}}$$

$$= \frac{\mathbf{a}}{\mathbf{a+c}} \qquad \approx \frac{11}{60} \text{ to } \frac{11}{30} \qquad \approx .18 \text{ to } .37$$

Specificity

$$= \frac{\text{Percentage of houses } \textit{not} \text{ experiencing incidents and } \textit{not} \text{ reporting}}{\text{Percentage of houses } \textit{not} \mathbf{\ experiencing} \text{ incidents}}$$

$$= \frac{\mathbf{d}}{\mathbf{b+d}} \qquad \approx \frac{40}{40.5} \text{ to } \frac{70}{70.5} \qquad \approx .99$$

Positive predictive value

$$= \frac{\text{Percentage of houses experiencing and reporting incidents}}{\text{Percentage of houses } \mathbf{reporting}}$$

$$= \frac{\mathbf{a}}{\mathbf{a+b}} \qquad \approx \frac{11}{11.5} \qquad \approx .96$$

Negative predictive value

$$= \frac{\text{Percentage of houses } \textit{not} \text{ experiencing and } \textit{not} \text{ reporting incidents}}{\text{Percentage of houses } \textit{not} \mathbf{\ reporting}}$$

$$= \frac{\mathbf{d}}{\mathbf{c+d}} \qquad \approx \frac{40}{89} \text{ to } \frac{70}{89} \qquad \approx .45 \text{ to } .79$$

The specificity and the positive predictive value of KPP IRS are seen to be very high, approaching unity. However, the sensitivity and negative predictive value are low. In clinical medicine, the purpose for which the diagnostic test is to be used determines which criterion is the most important. A test to be administered to a large number of people in order to identify everyone with an easily treatable disease needs to be highly

sensitive (e.g. a tuberculin skin test). On the other hand, a test which, if positive, leads to invasive treatment such as major surgery or chemotherapy needs to be highly specific (e.g. tissue diagnosis) (Fletcher et al., 1988). Once a test has been selected for use, the predictive values are the more important criteria since those utilising the test need to know how much reliance can be placed on the results.

The main purposes of the incident reporting system were: (i) to trigger help for staff involved in a violent incident, (ii) to record information about incidents for company records and for external reporting, (iii) to provide information for risk assessment, and (iv) to provide information to feed into the design of intervention measures.

Assuming that ADR personnel acted correctly to provide help when an incident report came in, the KPP IRS was effective in its role of triggering help for those houses reporting that actually needed help (high positive predictive value) and not triggering help for those who did not need it (high specificity). However, it was not effective in triggering help for *all* those who did need it (low sensitivity).

In terms of recording incidents, the high positive predictive value of KPP IRS provided that those reported from all houses were worth recording, but the low sensitivity meant that there were many houses not reporting incidents that should have been recorded. Whether this applied to the incidents that would have met the criteria for external reporting under RIDDOR 95, had it been in effect during the period studied here, is considered in the Section 3.4.

For risk assessment, the high positive predictive value of KPP IRS determined that assessment made from the reported incidents, as in Table 3.4, could be taken as a minimum level of risk. However, the low sensitivity means that there may be additional levels of risk that have not been taken into account by the KPP IRS. It is clear that assessment of risk should not rely on incident reporting alone. In addition to the problems from underreporting possibly underestimating the risks of physical harm, incident reports cannot capture reliable information on psychological harm. Further, the wide variation in the numbers of incidents occurring in different licensed houses suggests that risk assessment should be carried

out, in part, at a local level, taking the organisation-wide figures into account.

3.3.4 Sampling study

Although the questionnaire study (Section 3.3.2) provided some measures of exposure to aggression and violence, and of underreporting, it was obviously unsatisfactory as an evaluation tool for the KPP IRS. A sampling study was designed to obtain some more direct measures of underreporting and to access those incidents that licensees did not consider serious enough to report through the KPP IRS, in order to get a realistic picture of the day-to-day problems that some licensees had to deal with. This study was due to take place in autumn 1995, involving a representative sample of 20% of the licensed houses in the largest of the trading companies. Unfortunately, the major reorganisation of ADR (see Appendix 2) occurred just as the study began and it had to be abandoned. Although the SEP Group made a number of further attempts to conduct the study, organisational considerations within ADR prevented it. However, a pilot study was carried out in autumn 1996. Its results provide some insight into the occurrence and reporting of incidents, but it was on too small a scale to provide the figures required to assess the accuracy of KPP IRS as a diagnostic tool.

A very simple incident diary was completed by a sample of licensees over a period of a fortnight, recording all incidents, whether minor or more serious, independently of company personnel. The study was designed to overcome some of the problems of incident reporting and questionnaire surveys in a number of ways:

- Information was requested about minor as well as serious incidents;
- Recording was simple, quick and for a limited time period;
- Reporting was completely independent of company personnel; and
- Incidents were recorded on the day they happened, enhancing the reliability of numbers and details given.

Method

Sample: Incident diaries were sent to an opportunistic sample of 20 ADR licensees known to the SEP Group through KPP training courses. 13 of the licensees completed and returned the diary, giving a response rate of 65%.

Materials: The incident diary was designed in the form of a "tick sheet", for each day of the study, that allowed licensees to record very quickly brief details of any aggressive or violent incident that occurred at their premises. A sample diary is given in Appendix 7. It included columns for recording the time of any problem incident, who was involved in the incident, types of aggressive behaviour, injury sustained, any weapons involved and whether the incident had been reported through the normal reporting procedure. The categories were chosen to mirror and combine those used in the incident reporting system and in the questionnaire survey described above. Further comments about the incident could be added on a separate sheet.

Procedure: Licensees were contacted by telephone, the study was explained and their agreement to take part was obtained. All the licensees approached agreed to participate. They were each sent a diary pack comprising a letter from the author, a dated 2-week incident diary, completion instructions (see Appendix 7) that included the KPP definition of violence, a sample completed diary sheet (see Appendix 7), a comment sheet and a pre-paid return envelope.

Each licensee, or a designated member of staff, completed the diary each day simply by noting the time of any incident that had occurred, ticking the columns that most nearly described the incident, noting any item used as a weapon and recording whether the incident had been reported through the formal reporting system. The diary was completed for a period of two weeks and returned directly to the author. Licensees were asked to return the diary whether there had been any incidents or not. A reminder letter was sent to licensees whose incident diary had not been received one week after the end of the study period. A letter of acknowledgement was sent to each licensee on receipt of the incident diary.

Results

The 13 houses experienced a total of 27 incidents in the 14-day period. The maximum number of incidents for any house was 7. The mean number of incidents per house was 2. The maximum number of incidents on one day in any house was 4. None of the incidents recorded by these houses in the 14-day period was reported to ADR through the KPP IRS. None of the incidents was reportable under RIDDOR 95.

The types of aggressive behaviour recorded are given in Table 3.10. Verbal abuse was the most common, being recorded for 20 of the 27 incidents, in 10 incidents by itself and in 10 in combination with other types of aggressive behaviour. Threats were made in 8 incidents, in 4 of these in combination with physical aggression. Physical aggression occurred in 9 incidents including 2 attacks on staff, and there were also 2 fights. 2 reported incidents involved objects used as weapons, although neither was a recognised weapon. One was a bottle and the other a cup of coffee thrown at the glass front door. No injuries to members of staff were reported. Customers were injured in 1 incident and property was damaged in 2 incidents.

This study demonstrated, as expected, that many more violent or aggressive incidents occurred in licensed houses than were reported to ADR. However, the majority of incidents (52%) recorded in the diaries involved verbal abuse or threat but not physical violence, which occurred in 33% of incidents, in general agreement with the results from the questionnaire survey of licensees (Section 3.3.2.). However, the study was much too small to get a generalisable picture of the amount and type of violence and aggression actually occurring. A much larger incident diary study, involving many more licensed houses, would be needed to make any meaningful estimate of the extent of underreporting through KPP IRS.

Table 3.10 Types of aggressive behaviour reported during incidents

Type of aggressive behaviour	Number of incidents
Verbal abuse	20
Threat	8
Pushing, shoving	7
Physical attack on staff	2
Physical attack on customers	0
Physical attack on property	0
Fight between 2 people	2
Fight involving more than 2 people	0
Not specified	4

3.4 REPORTING OF INCIDENTS BY SERIOUSNESS

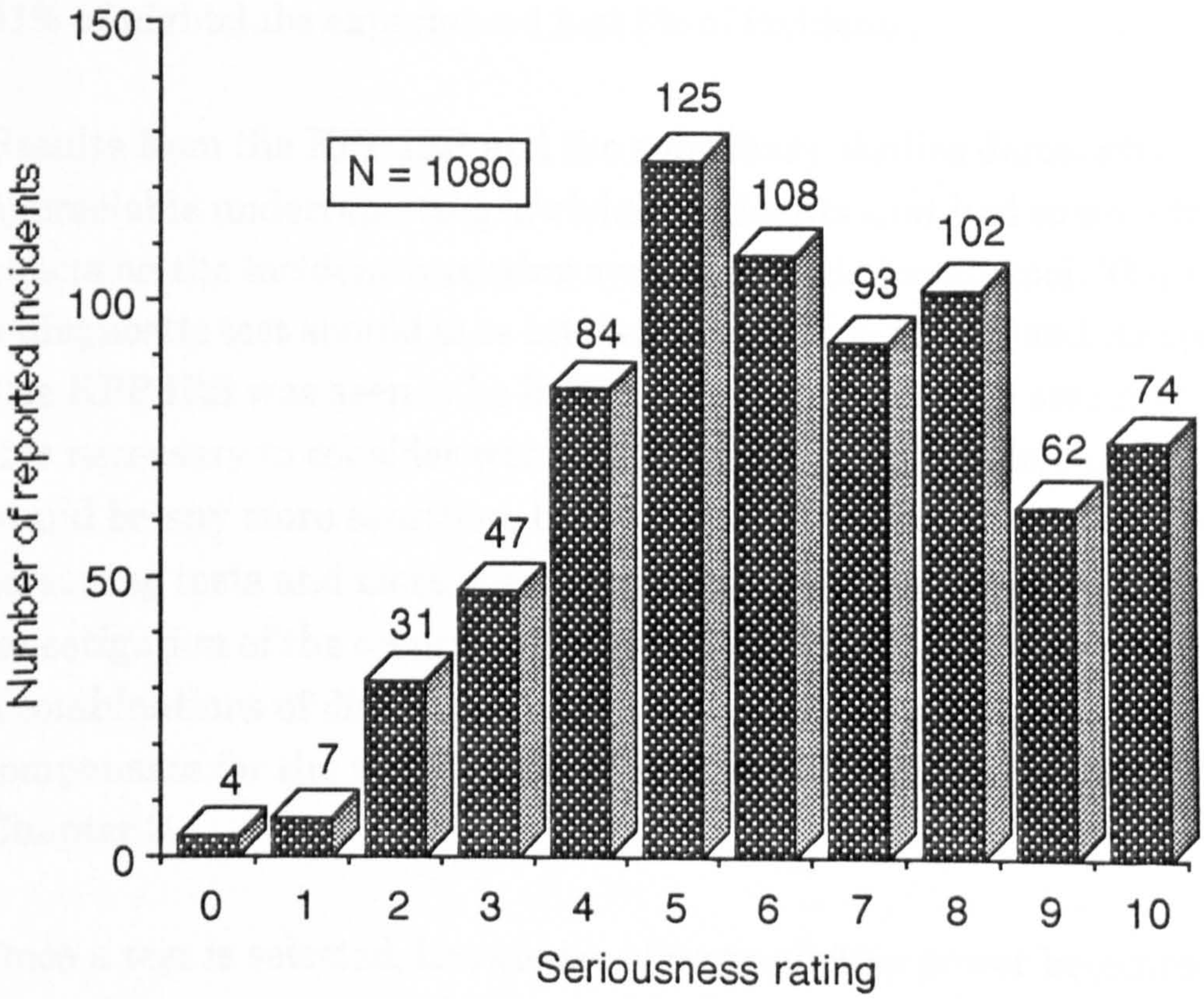
The previous section demonstrated that many houses were not reporting, through KPP IRS, incidents that fulfilled the KPP definition. Whether this applied to the incidents that would meet the criteria for external reporting under RIDDOR 95 required further consideration. The two subsidiary studies demonstrated, as expected, that:

- licensed houses experienced higher numbers of incidents involving apparently less serious forms of aggression, such as verbal abuse, than of those involving physical violence or weapons; and

- there was appreciable underreporting of aggressive and violent incidents, the most frequent reason given being that the incident was not considered serious enough.

The incident report form (KPP IRF) contained a simple measure of the seriousness of the reported incident, as assessed by the licensee or other members of staff involved in the incident. This measure comprised a score from 0 to 10, where 0 represents "trivial" and 10 represents "the most serious you could ever imagine". The distribution of seriousness scores given for incidents reported during 1992 to 1994 is shown in Figure 3.1. It shows an increase in numbers of incidents with increasing seriousness score up to the mid-point (5), then a general decline in numbers towards the highest scores. This pattern can be explained as the balance between the decrease in numbers of incidents actually occurring with increasing seriousness, and an increase in the likelihood of reporting with increasing seriousness, the lower end of the scale being dominated by underreporting, and the higher end of the scale being dominated by the numbers of incidents actually occurring. These competing trends resulted in a maximum number of reports at the mid-point score. This suggests that numbers of incidents reported more closely mirrored the numbers of incidents actually occurring for serious incidents than for less serious incidents. The seriousness of incidents is discussed in detail in Section 5.2.

Figure 3.1 Numbers of incidents reported by seriousness score for 1992 to 1994.



3.5 DISCUSSION

This chapter has attempted to assess the usefulness of the incident reporting system in providing numbers of violent incidents and its accuracy in identifying those houses that have experienced violent incidents. For the period 1992 to 1994, the ADR managed houses reported a mean of 0.15 violent incidents per house per year with a maximum of 6 incidents reported in any one house in one year. Around 11% of houses reported incidents each year. The percentage of monthly paid staff reporting physical injury sustained in a violent incident in each year was seen to be around 5%.

A questionnaire study confirmed, as expected, the uneven distribution of incident frequency over different houses. This agrees with the 1987 survey of ADR licensees which found that the majority of public houses experienced little violence on a regular basis, but that some licensees were working and living under threat of violence even if it did not always materialise as actual physical assault (Cox, Boot, Higgins & Hillas, 1988; Hillas, Cox & Higgins,

1988). Around 8% of premises reported experiencing violent incidents at least once a month. The results are also in accord with, for example, Macintyre and Homel's (1997) finding of "hot spots" within a holiday area of Australia, where 18% of nightclubs accounted for 64% of incidents, while 41% of nightclubs experienced just 3% of incidents.

Results from the KPP IRS and the subsidiary studies demonstrated appreciable underreporting of violent incidents that had some adverse effects on the incident reporting system as a diagnostic tool. The selection of a diagnostic test should take into account its sensitivity and its specificity. The KPP IRS was seen to be highly specific but not very sensitive. However, it is necessary to consider whether there are practical alternative tests that would be any more sensitive. In medicine, clinicians use a combination of screening tests and more specific tests to detect the presence of disease. The investigation of the occurrence of violent incidents similarly needs to utilise a combinations of different methods to exploit the strengths, and compensate for the weaknesses, of each of the methods, as advocated in Chapter 2.

Once a test is selected, knowledge of its predictive power becomes key to its correct interpretation. For the KPP IRS, the positive predictive value was good, in that all reported incidents were seen to require some sort of assistance, support or investigation. Sometimes dissatisfaction was expressed by licensees at the response, or lack of response, from the company to the reporting of an incident. Lessons need to be learned by management in that every incident report is worth taking seriously. The negative predictive value for the KPP IRS was fairly low, indicating, as expected, a need to use other means of detecting a problem of violence within a public house. A sampling study such as that piloted within ADR could be expected to provide a better picture of day-to-day problems of aggression and violence, in terms of the number of incidents that occur.

The demonstrated underreporting in the KPP IRS affected its ability to provide complete information for the assessment of risk. This supports the argument that incident reporting systems should not be used as the sole basis for assessing the risk to staff from violent incidents, as has often been found by, for example, Beale, Fletcher, Leather and Cox (1998). Incident reporting should be supported by other methods of assessing the amount of

violence occurring (Leather, Cox, Beale & Fletcher, 1998). However, the reporting system is useful in providing minimum values for the level of risk.

In terms of the seriousness of incidents, the subsidiary studies demonstrated that many more apparently minor incidents occurred than apparently more serious ones. However, the KPP IRS did not receive greater numbers of reports of less serious incidents. The seriousness scores from the KPP IRS indicated that numbers of incidents reported reflected more closely the numbers actually occurring for serious incidents than for minor incidents.

These studies demonstrated the benefits and the limitations of an incident reporting system in terms of estimating numbers of incidents occurring. The limitations were particularly marked in the KPP IRS because of the diversity and scattered nature of the individual licensed houses, and the semi autonomous nature of the regional trading companies. These also impacted on the ability of the SEP Group to carry out the subsidiary studies effectively. The combination of methods, however, has illustrated what might be achieved by such complementary studies. This combination of methods could be used internally by organisations to assess more accurately the numbers of incidents actually occurring and, thus, to enhance the effectiveness of their reporting system as a tool in risk assessment and risk management, rather than just as a means of meeting their strict legal requirements under RIDDOR 95.

The difficulties encountered with the subsidiary studies illustrate the problems of working with commercial organisations. Studies cannot always be as systematic as researchers would wish because commercial concerns are given a higher priority than such research. This is particularly marked when the research is conducted over many years in a fluid organisation such as ADR. Changes in organisational structure, in priorities and in personnel, as well as geographical spread, impinge on the researcher's ability to sustain systematic research.

Despite the problems outlined in this chapter, the incident reports provide a rich source of information about the nature of violent and aggressive incidents. The following three chapters examine the features occurring in reported incidents and explore the incidents as developing situations.

CHAPTER 4: EXAMINING THE NATURE OF REPORTED INCIDENTS

This chapter begins to examine the nature of incidents reported through the reporting system (KPP IRS) within ADR. First, it describes briefly the structure of the Keeping Pubs Peaceful Incident Report Form (KPP IRF) and the scheme for coding the data. It then outlines the types of information collected on the report forms and gives frequency data concerning some of the most salient features so as to provide an overall picture of the incidents that occurred. It also introduces the treatment of an incident as a developing situation, in accordance with the theoretical model described in Section 1.2. This consideration of an incident as a dynamic process is elaborated in later chapters.

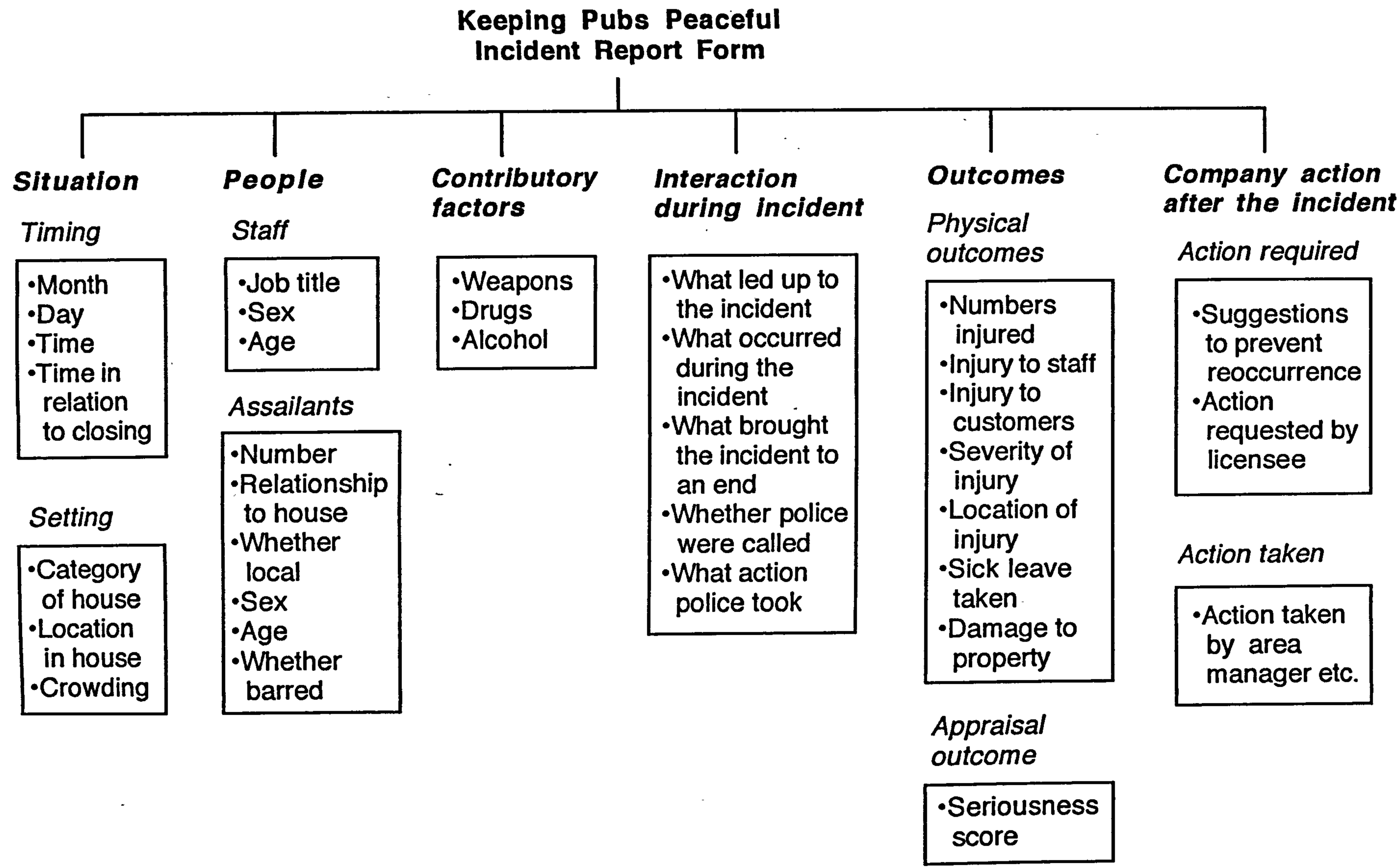
4.1 THE INCIDENT REPORT FORM

4.1.1 Structure of the form

The KPP IRF requested information from the reporting licensee regarding a range of features of the incidents. Closed questions, often with "tick boxes" for the answers, were used when "hard" information was required. Open questions were also used, with prompts to elicit detailed descriptive information about the incident. The form, based on the pilot form devised by the SEP Group in 1988, was adapted progressively by the author to increase the clarity of the system and to accommodate changes in the law, changes in the types of incident, and requirements of the company. The final version of the KPP IRF is given in Appendix 5 and its evolution described in Appendix 2.

The structure of the KPP IRF was based on the theoretical position outlined in Section 1.2, asking for information regarding the situation, the people, the progress of the interaction and the outcome. Further information related to action required and taken by the company after the incident had occurred. A simple diagrammatic description of the information requested is given in Figure 4.1. The main features considered in this chapter relate to the time, the setting, the staff involved, the assailants, contributory aspects such as weapons or drugs, what happened during the incident and the outcome of the incident.

Figure 4.1 Information structure of the KPP IRF



4.1.2 Coding scheme

The original coding scheme for KPP IRS was derived by Cook and Cox (1988) from the early reports of violent incidents using content analytical techniques. While it was appropriate at the time, this type of scheme does not cater for the evolving character of a long term reporting system. As the database grew, it became increasingly clear that an unacceptable amount of information about the nature of incidents was being lost in the coding. Furthermore, it was difficult to fit some incidents to the coding structure. In 1992, the author completely reconstructed the coding scheme.

This new coding scheme, given as Appendix 6B, was designed to capture as much of the descriptive detail as possible by extensive use of dichotomous variables signifying the presence or absence of features. This approach produced a more flexible, and easily extendible, coding scheme that enabled any combination of features to be entered into the database for any incident. The final version of the scheme included 236 different variables. This coding also facilitated the retrieval of information about incidents with particular features, or combinations of features, to satisfy enquiries from ADR personnel, for example concerning the relative effects of bottles and glasses used as weapons, or the problems of staff going outside. Furthermore, the coding relied less on the judgement of coders and provided data suitable for use in a wider range of statistical techniques (e.g. Pearson-Woodd, 1998). The derivation of the coding scheme is described in Appendix 2. Inter-rater reliability for coding of descriptive information is considered in Section 6.2.3

4.2 DESCRIPTIVE FREQUENCY INFORMATION

The first section of this chapter presents straightforward descriptive frequency information regarding reported incidents, of the type obtained from conventional incident reporting systems. It is not the intention to include minute details of all the variables but to provide a general picture covering the main features of reported incidents. The fine detail is of greatest use when interrogating the database to obtain the answers to specific queries and in providing descriptive information for company reports. The whole range of variables was examined critically by Pearson-Woodd (1998) using a sample of 410 of the incident reports. The frequencies given here are based on the 1983 incidents reported to the KPP IRS as occurring from the beginning of 1992 until reporting finished in the summer of 1998.

4.2.1 Timing

The timings of reported incidents were examined in order to identify patterns that could assist in predicting the most likely times for incidents to occur. The simple frequencies over time are given here. A more complex pattern in timings is explored in Chapter 7.

The only pattern that emerged regarding the months in which reported incidents occurred involved an increase around the Christmas period. Such an increase is generally expected by licensees. It was attributed by one member of ADR staff both to an increase in numbers of customers and to people unaccustomed to drinking much alcohol consuming more than usual at celebratory occasions.

The distribution of reported incidents over the days of the week is shown in Figure 4.2. Almost two thirds of the incidents (64%) occurred at the weekend, that is, on Friday, Saturday or Sunday. Tuesday and Wednesday were the days on which the fewest incidents occurred.

Figure 4.2 Days of the week on which reported incidents occurred (N = 1980)

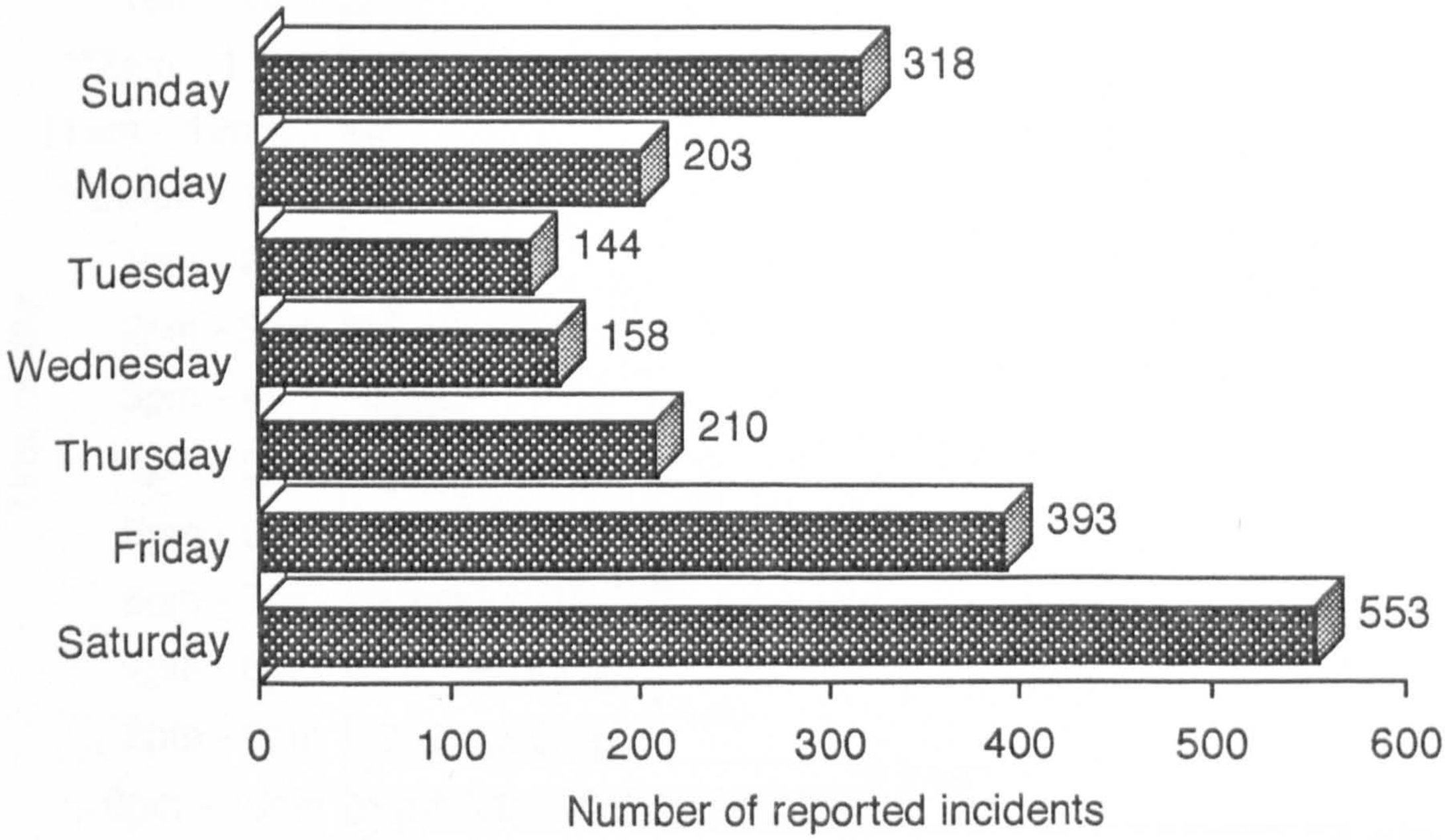
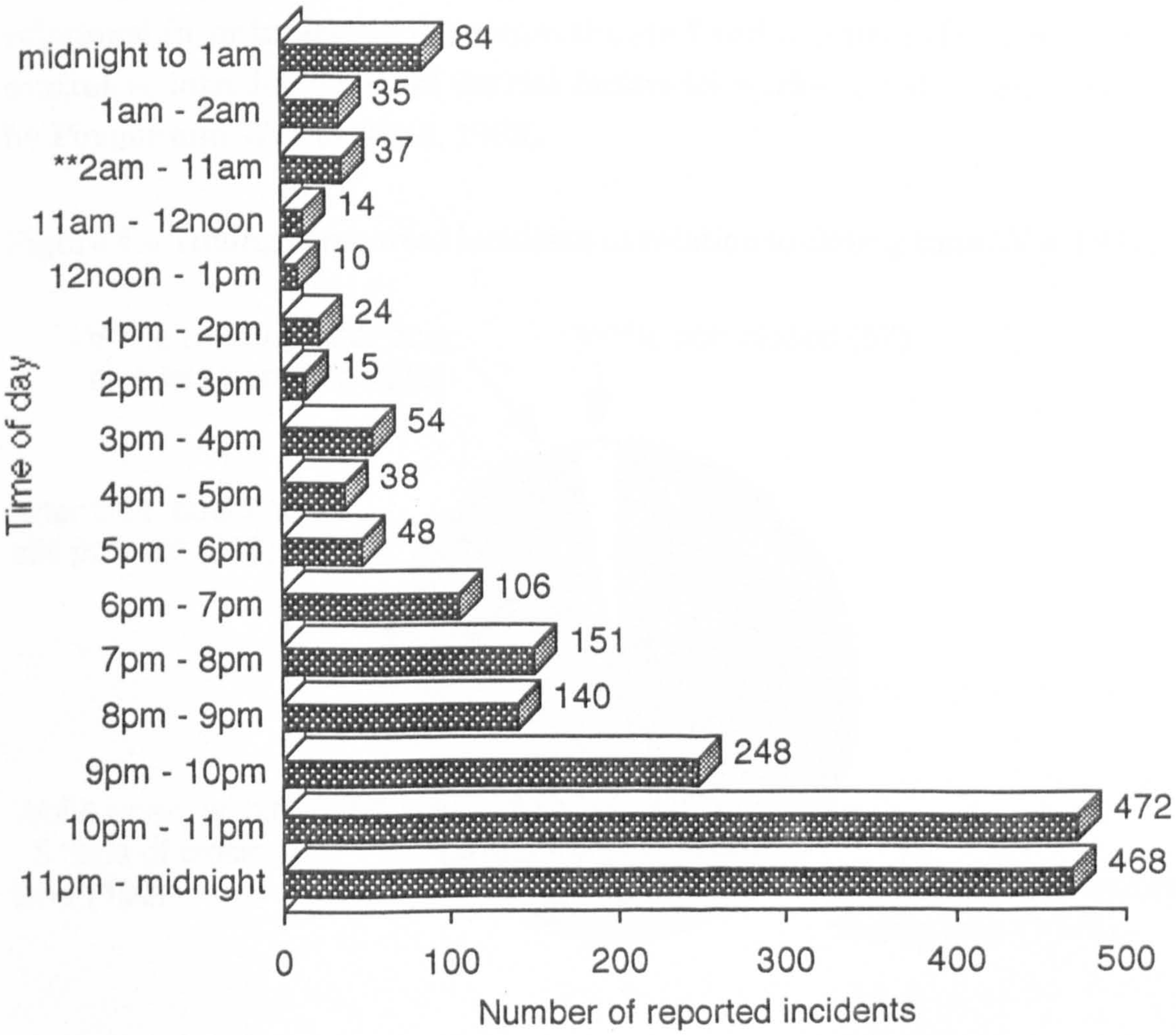


Figure 4.3 shows the distribution of reported incidents over the hours of the day. Few incidents occurred between 2am and 3pm. During the afternoon and evening hours, the numbers of incidents increased steadily, rising sharply after 6pm and again after 9pm, to reach a peak between 10pm and midnight.

After midnight, numbers decreased dramatically. These timings were obviously determined to some extent by public house licensing hours, which most commonly were 11am to 11pm (12 noon to 10.30pm on Sundays) although there were regional variations, such as public houses staying open until midnight in Scotland. Many nightclubs stayed open until 2am and any public house could apply for an extension of opening hours for special events.

These patterns in timings were not unexpected. Salminen (1997, 1998), for example, noted an increased risk of work-related violence occurring in Finland during weekend nights and linked this to the consumption of alcohol. He found that the most hazardous time for assaults at work was 11pm-1am on Friday and Saturday nights. Additionally, he noted that leisure time incidents were more common than work ones on Friday, Saturday and Sunday. Both these findings are likely to be affected by violence connected to drinking in licensed premises.

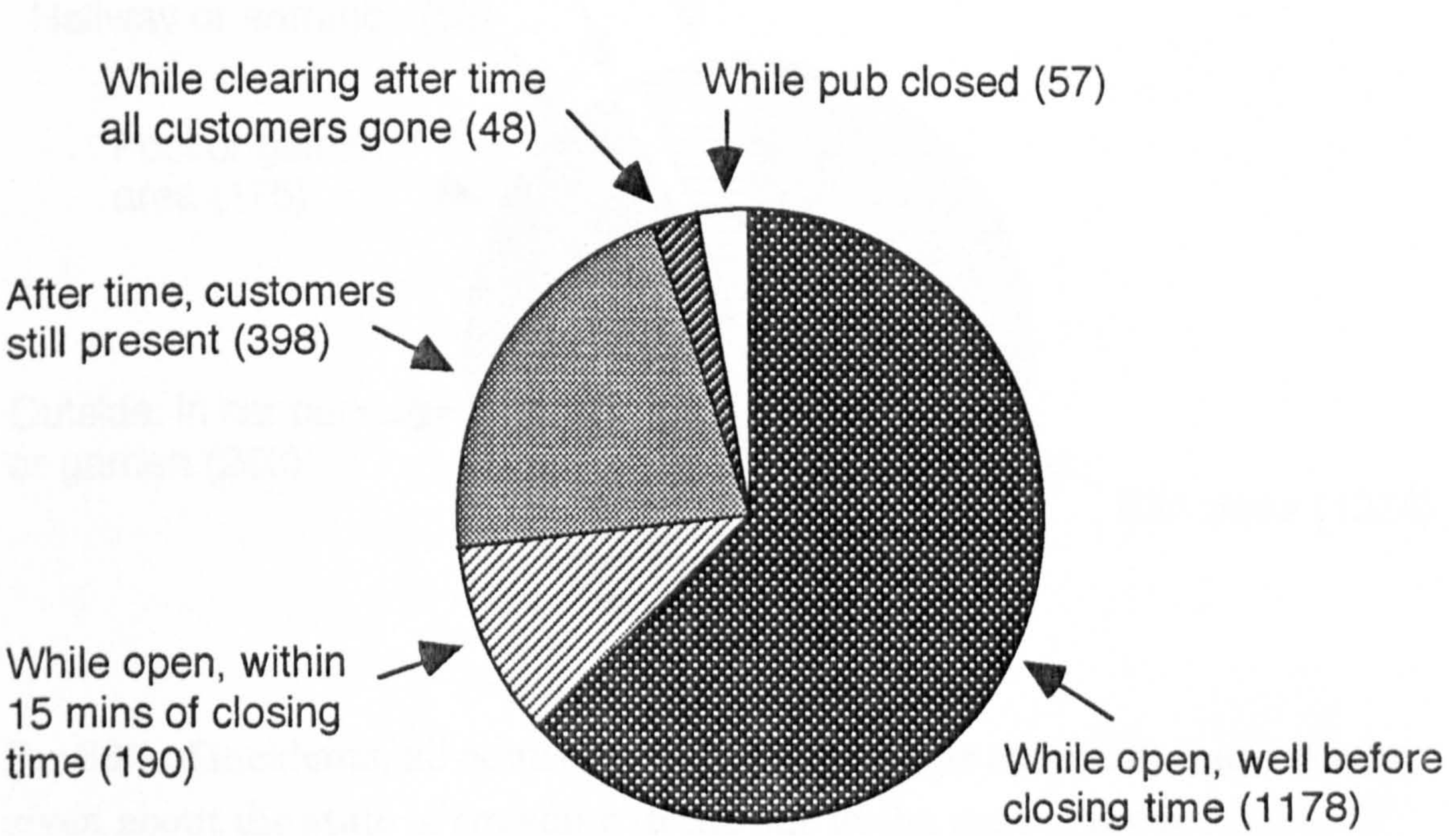
Figure 4.3 Times of day at which reported incidents occurred (N = 1944)



** 9-hour period

The concentration of incidents around closing time is illustrated in more detail in Figure 4.4. In public houses, licensees call "last orders" a few minutes before closing time, to give customers adequate warning that serving is soon to finish, and then call "time" when they have to close the bar and stop serving. In law, customers are then allowed 20 minutes to finish their drinks and to leave the premises. It is the licensee's responsibility to ensure that this occurs, with his or her licence being put at risk of revocation by serious non-compliance. In practice, most public houses are clear of customers within 30 minutes of closing time. The two processes of satisfying the demand for final drinks and clearing the premises, when customers are reluctant to stop drinking and leave, can be problematic for licensees and their staff . Figure 4.4 shows that 31% of the incidents, for which the timing in relation to closing could be determined, occurred around closing time, that is, within a period of about 45 minutes. Of these, the majority occurred after time but while customers were still on the premises. The most obvious thing that marks out the time around closing is the change in the tasks to be carried out by the staff, from serving customers to finishing serving and clearing the premises. This change in task inevitably changes the relationship, or interaction, between the staff and customers from service to control, so introducing one of the risk factors for work-related violence cited by Poyner and Warne (1986, 1988).

Figure 4.4 Timing of reported incidents in relation to closing time (N = 1871)

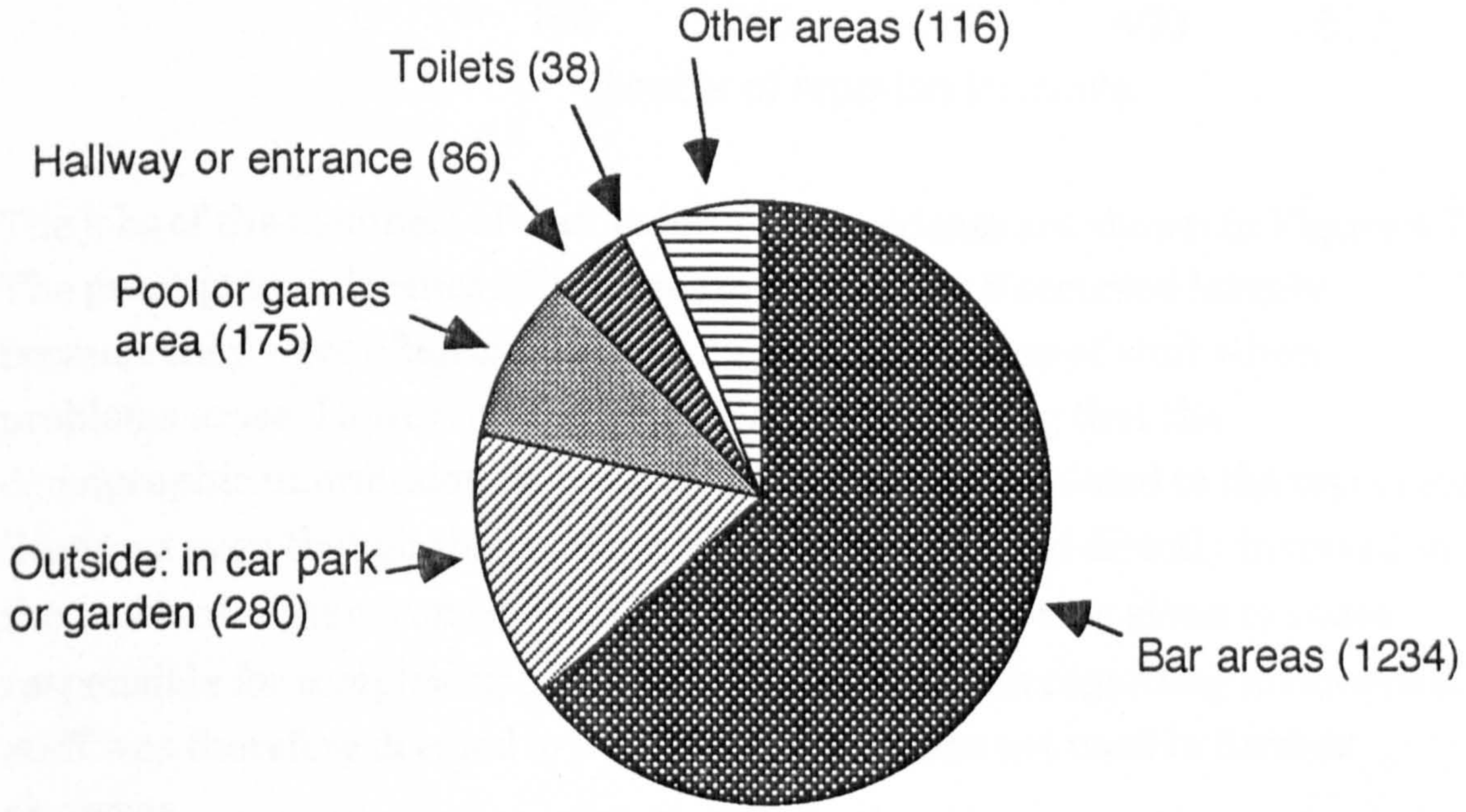


4.2.2 Settings for reported incidents

Reported incidents occurred in all types of licensed premises, including locals (44%), young people's venues (21%), pool-based venues (18%) and quality branded premises (15%). Even houses specifically catering for families experienced a small number of incidents. The most common category occurring in incident reports was the local, but this reflected the much larger numbers of locals than of other categories within ADR. Comparative rates by category cannot be given because the numbers of houses in each category fluctuated considerably throughout the study period.

The majority of reported incidents (62%) began in the bar areas, 14% occurred outside the pub, in the garden or car park, 9% occurred in a room or area used for playing pool or other games, and 4% occurred in the entrance or hallway. Although relatively few incidents (2%) occurred in the toilets, those incidents sometimes involved vicious attacks hidden from public view. A small number of reported incidents occurred off the premises, particularly when members of staff were banking the takings. The overall pattern is shown in Figure 4.5.

Figure 4.5 Areas where incidents occurred (N = 1929)



For 66% of incidents, all occurring while the pub was open, information was given about the state of crowding in the pub at the time of the incident. Of these cases, 60% occurred when the pub was considered to be crowded and 40% when it was not crowded. It has to be remembered, however, as

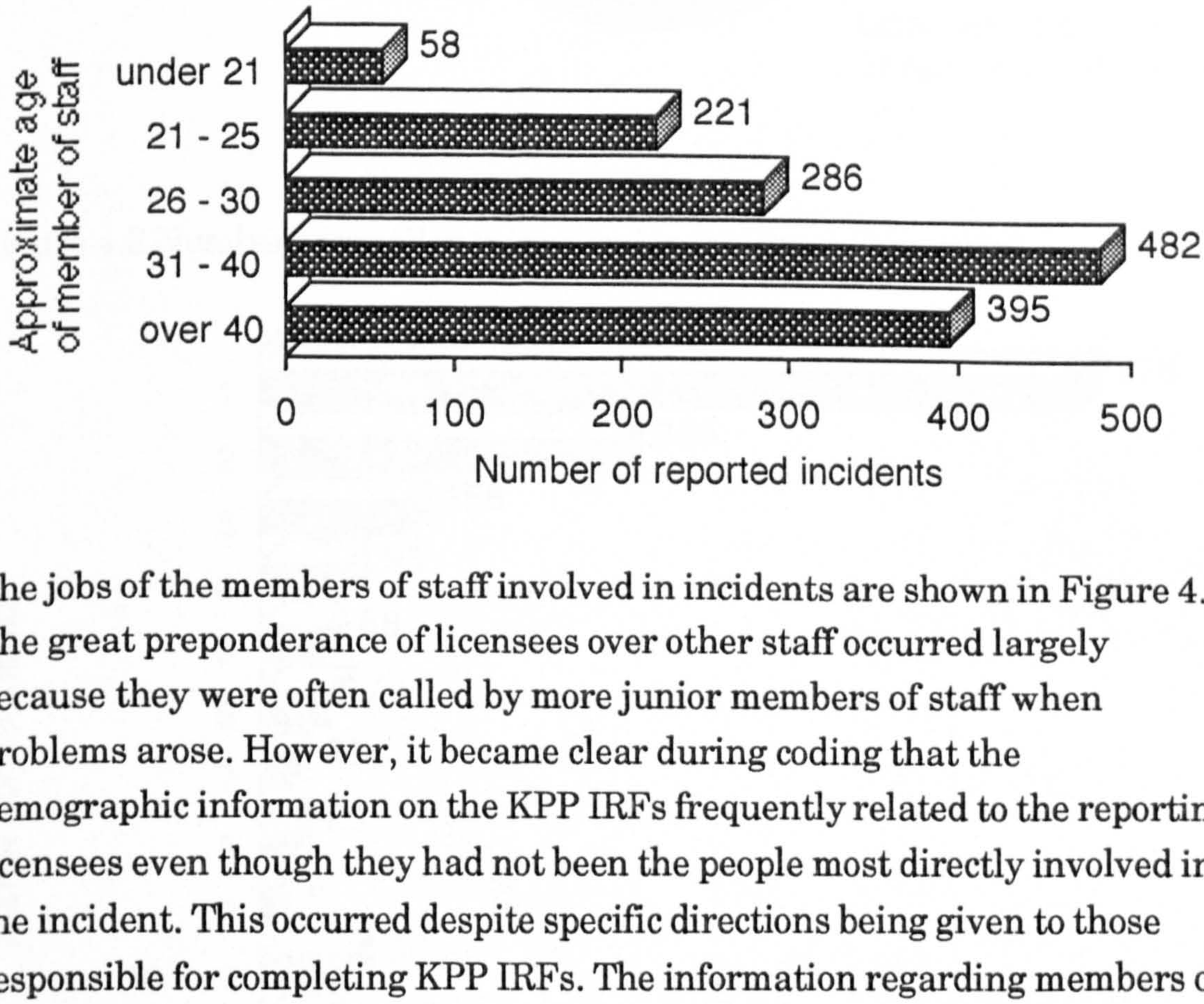
Macintyre and Homel (1997) pointed out, that crowding is a function of the physical layout of the premises as well as of the density of customers, such that certain areas produce increased customer contact because of competition for space or movement. The incident reports rarely give sufficiently detailed information to access this level of detail about crowding.

4.2.3 People involved in incidents

Members of staff

The approximate ages of the members of staff involved in incidents are given in Figure 4.6; 60% were aged above 30. Where the gender of the member of staff was given, 75% were male and 25% female.

Figure 4.6 Approximate age of member of staff involved (N = 1442)



The jobs of the members of staff involved in incidents are shown in Figure 4.7. The great preponderance of licensees over other staff occurred largely because they were often called by more junior members of staff when problems arose. However, it became clear during coding that the demographic information on the KPP IRFs frequently related to the reporting licensees even though they had not been the people most directly involved in the incident. This occurred despite specific directions being given to those responsible for completing KPP IRFs. The information regarding members of staff was therefore deemed to be unreliable and was not used in further analyses.

Assailants

As shown in Figure 4.8, 45% of the reported incidents involved a single assailant, 28% involved two or three assailants, and a further 27% involved four or more assailants, including 9% that involved ten or more assailants.

Figure 4.7 Job titles of members of staff involved in reported incidents (N = 1641)

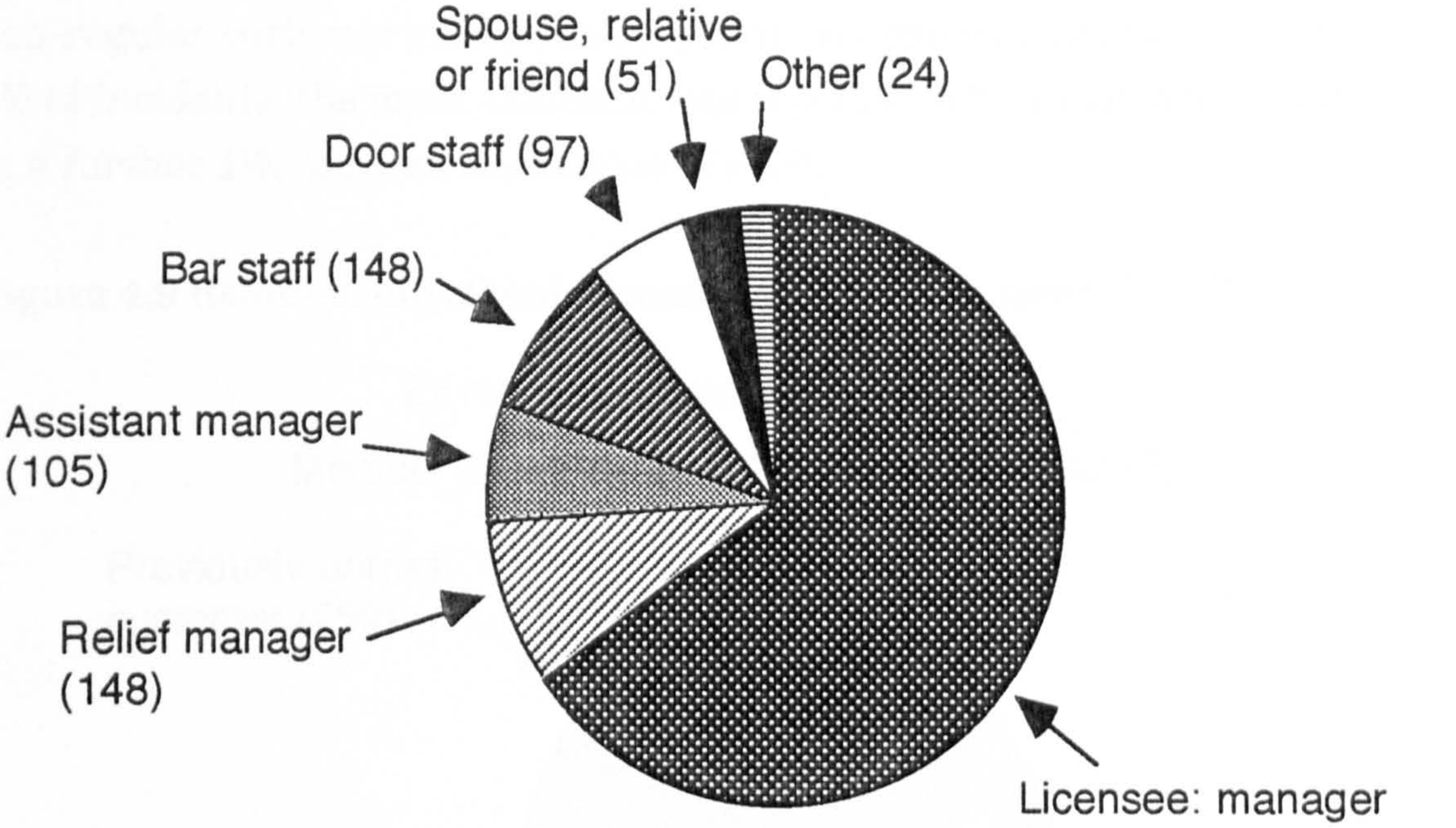


Figure 4.8 Number of assailants involved in incidents (N = 1928)

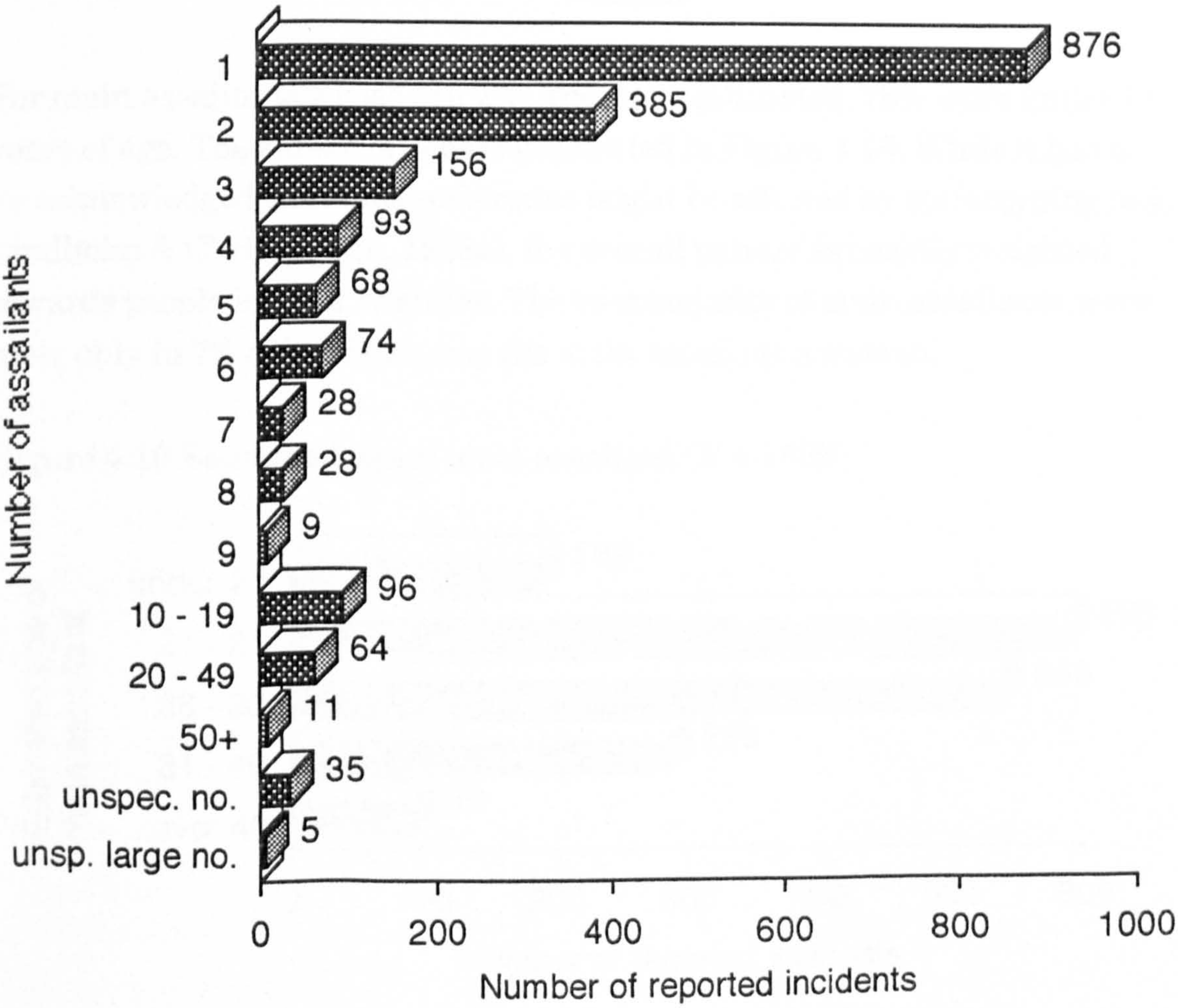
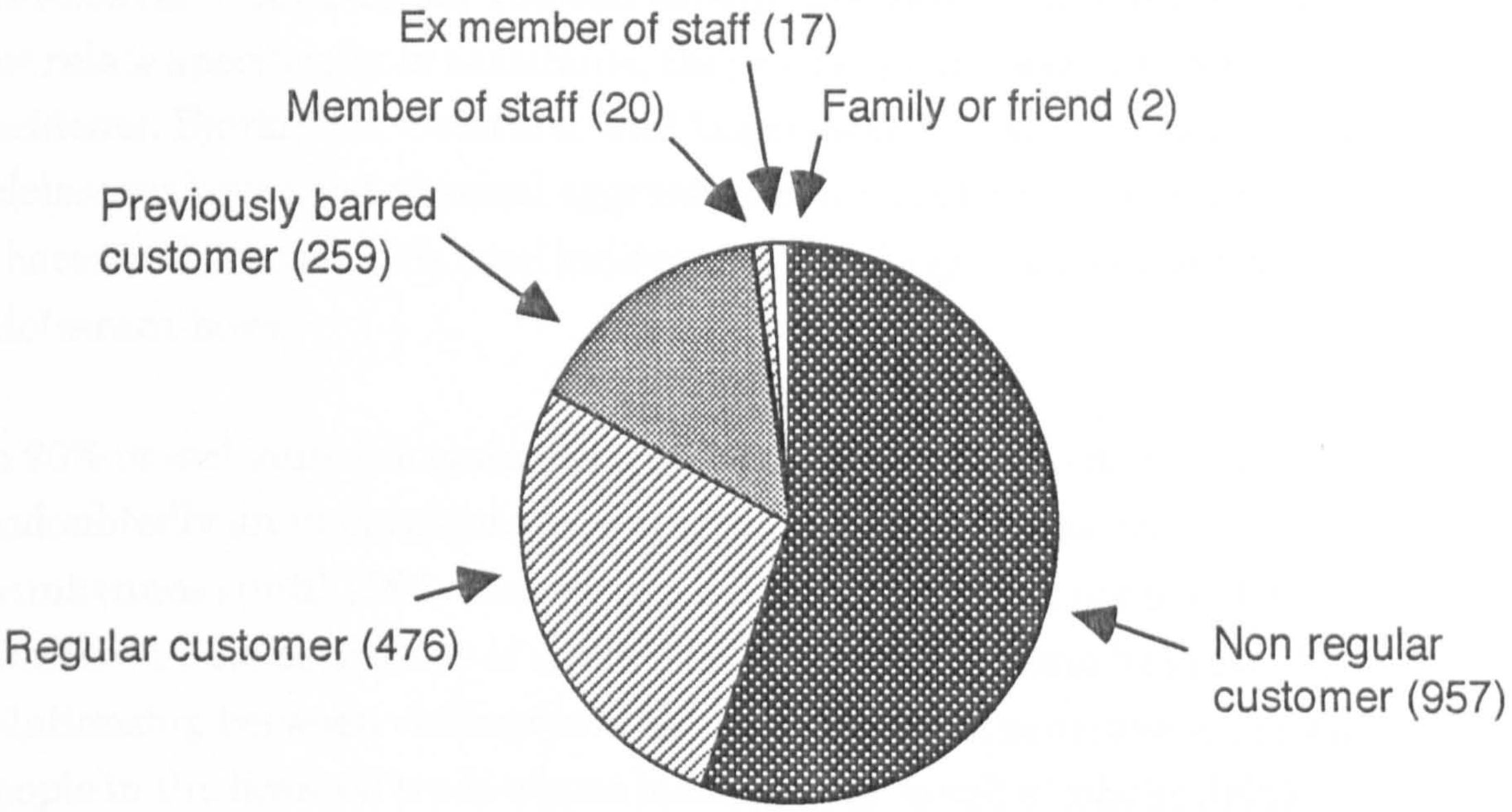


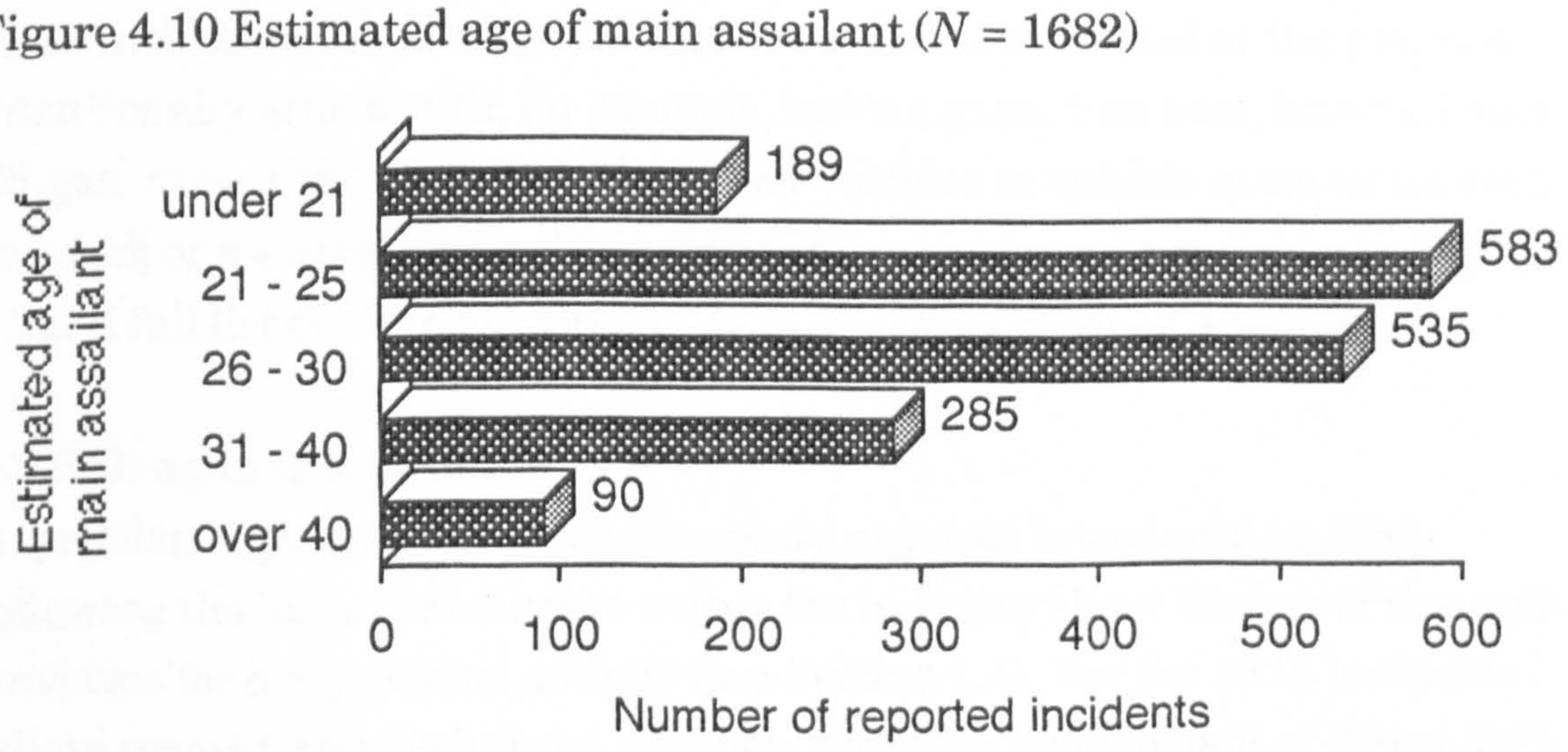
Figure 4.9 shows that, for incidents where the information was given, the main assailant was reported to be a regular customer in 27% of incidents, a non-regular customer in 55%, and a previously barred customer in 15%. In 1% of incidents, the main assailant was reported to be a member of staff and, in a further 1%, to be an ex-member of staff.

Figure 4.9 Relationship of main assailant to the premises (N= 1731)



For main assailants whose age was known or estimated, 78% were under 31 years of age. The spread of ages is illustrated in Figure 4.10. While it has to be acknowledged that these estimates might be affected by stereotyping (e.g. Lindholm & Christianson, 1998a), the overall pattern is heavily weighted towards people in their twenties. The vast majority of main assailants were men; only in 7% of incidents was the main assailant a woman.

Figure 4.10 Estimated age of main assailant (N = 1682)



These profiles of assailants tie in with the findings of Homel, Tomsen and Thommeny (1992) that the presence of several groups of males increased the risk of violence occurring. In addition, Langley, Chalmers and Fanslow (1996), in New Zealand, found that the proportion of the population hospitalised after being involved in assaults in licensed premises was much higher for males (14.3 per 100,000 persons per year) than for females (0.9 per 100,000 persons per year). In addition, hospitalisation rates peaked for people in their mid-20s (at around 25 per 100,000 persons per year). While these figures do not relate specifically to assailants, they do relate to those involved in violent incidents. Bjorkqvist, Osterman and Lagerspetz (1994) emphasised that adolescent boys used physical aggression more than adolescent girls, whereas adolescent girls used indirect means of aggression more than adolescent boys.

In 20% of incidents the main assailant was reported to be drunk. This is undoubtedly an underestimate as no specific question was asked about drunkenness until 1995. There was a deliberate decision not to ask this question in the early days of the incident reporting system because the relationship between violence and alcohol was then a sensitive issue with people in the licensed trade whose business was to sell alcoholic drink.

4.2.4 Weapons

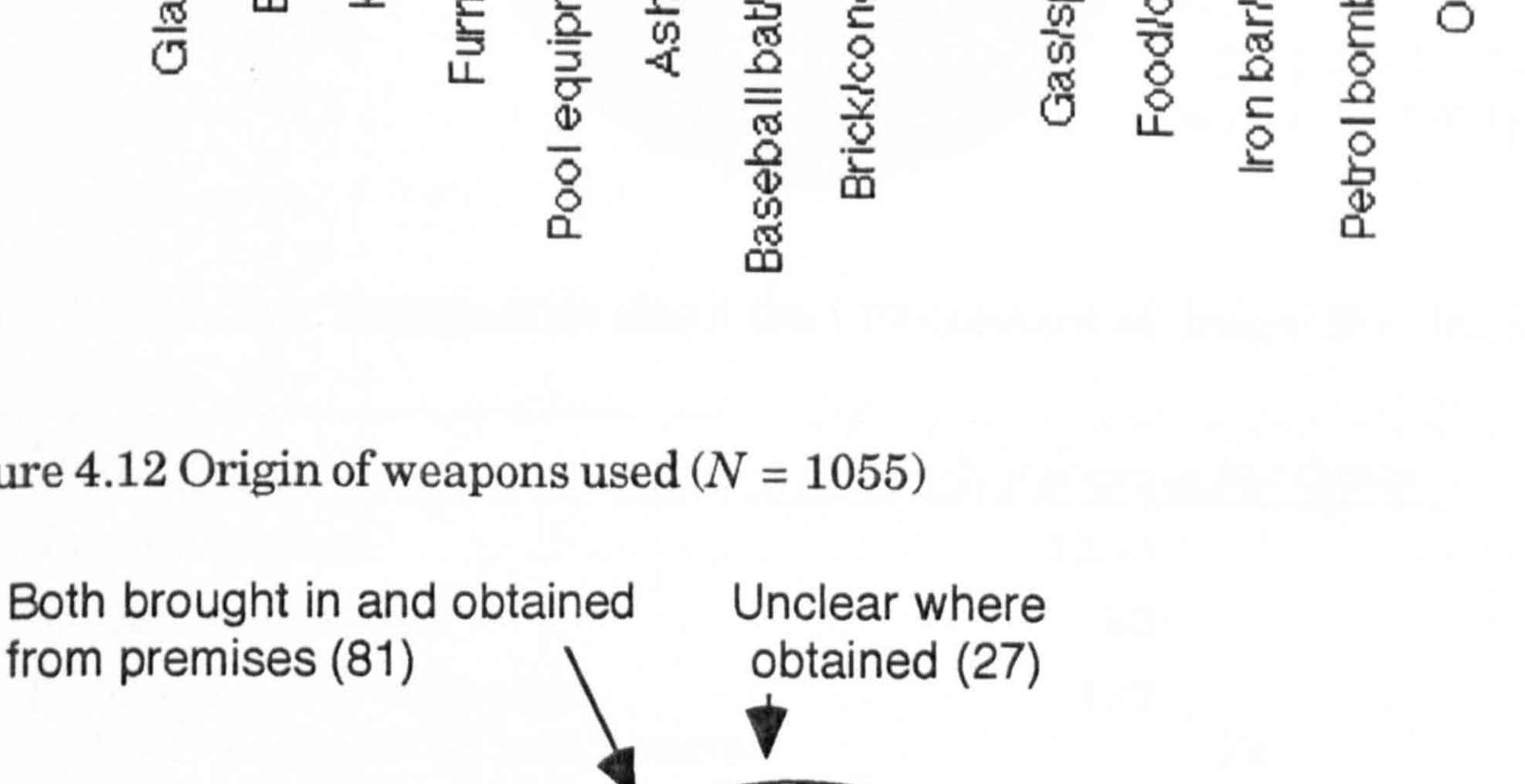
In 54% of reported incidents, a weapon of some kind was known to have been involved in the incident, used either as a threat or in a physical attack. In 68% of incidents that did involve a weapon, ordinary objects obtained from the pub were used, typically glasses, bottles, furniture, ashtrays and pool equipment, as shown in Figure 4.11, although objects as unlikely as potted plants, a mop bucket and a warming pan were used on occasion. In 37% of these incidents, it was reported that the assailants arrived at the premises intentionally armed with, for example, knives, guns, iron bars, baseball bats, CS gas, even a snake, or that they used vehicles or vehicle accessories such as a jack or a steering lock. The origins of weapons used are shown in Figure 4.12. A full list of weapons involved in incidents is given as Appendix 9.

4.2.5 Drug involvement

A question regarding the involvement of drugs was introduced in 1992, following the increased concern within the industry about the use of licensed premises for drug-related activity (see Section 1.4). For the 1815 incidents whose report forms included a question about the involvement of drugs, 24%

Figure 4.11 Weapons involved in incidents (N = 1064)

Figure 4.12 Origin of weapons used (N = 1055)



were known or suspected to involve drug-related activity. Indications of drug involvement were that assailants appeared "high", were caught using drugs on the premises, were known users or known dealers or were involved with gangs known to deal in drugs. A small number of incidents involved the use of prescribed drugs which should have precluded the drinking of alcohol. Responses to the questions are depicted in Figure 4.13 and Table 4.1.

Figure 4.13 Answers to questions relating to the involvement of drugs (N = 1815)

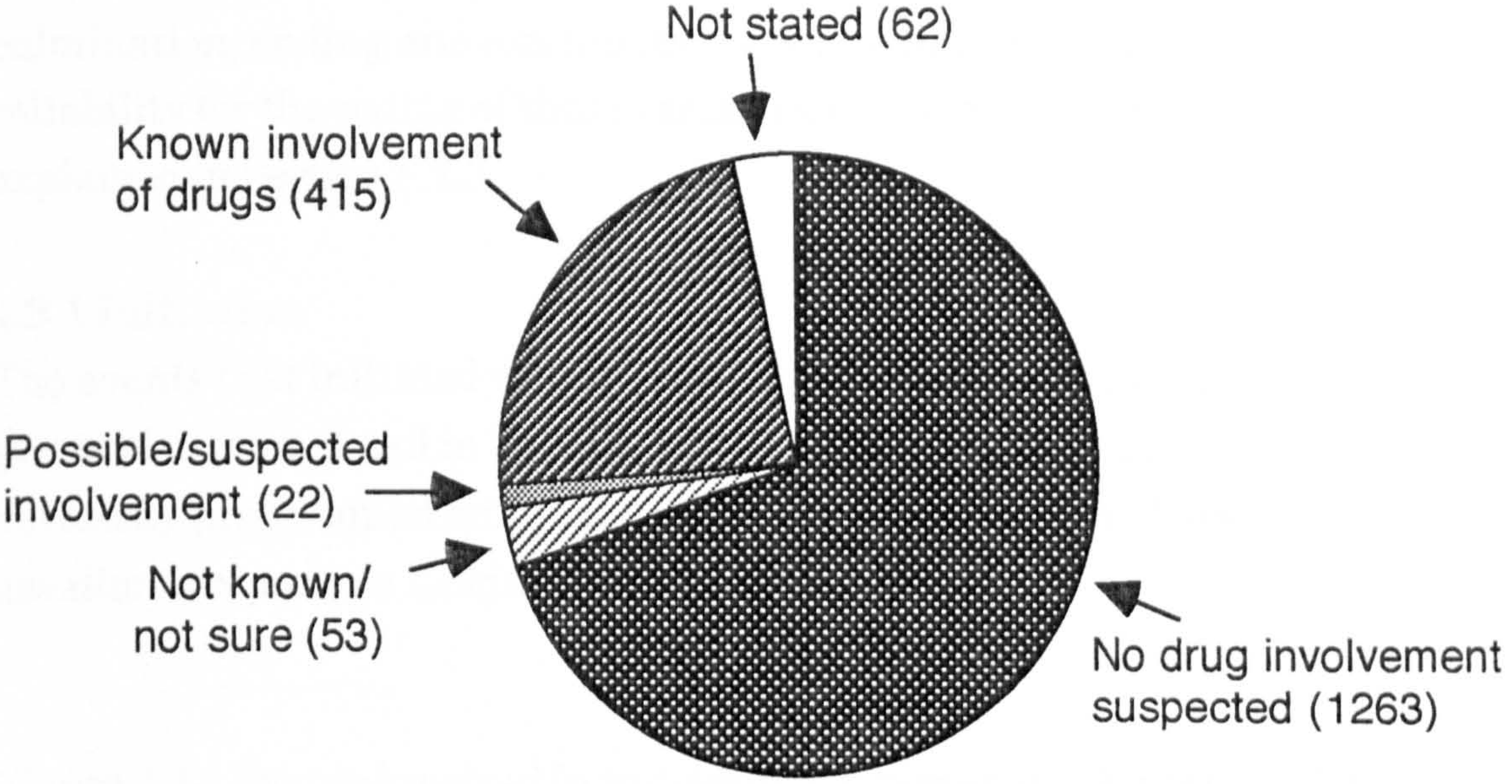


Table 4.1 Answers to questions about the involvement of drugs (N = 1815)

Answer	Numbers of incidents	
No involvement	1263	
Not known/not sure	53	
Total suspected or known:	437	
Possible / suspected involvement		*22*
Involvement (no details)		*23*
Assailant appeared 'high'		*191*
**Known user involved*		*100*
**Known dealer involved*		*64*
Person caught using drugs on premises		*42*
Person had possession of drugs		*4*
Evidence of use found on premises		*6*
Member of group involved in drugs		*8*
Local problem		*23*
Repercussions from "clean-up"		*3*
Prescribed drugs involved		*12*
Other		*24*
No answer given	62	

* "Known" did not necessarily mean known to staff prior to the incident.

4.3 THE INCIDENT AS A PROCESS

In accordance with the theoretical model described in Section 1.2, which sees an aggressive incident as an escalating process, it was appropriate to explore the analysis of incidents as developing situations. The descriptive accounts given in the incident reports were not detailed enough to pick out every individual action, but they could be examined at a coarser level of granularity that provided information about the overall temporal structure of incidents. The variables were grouped according to the stages of initiation, development, culmination, ending and continuation after exiting. Satisfactory inter rater reliability for the coding of these variables was demonstrated, as will be explained in Section 6.2.3.

4.3.1 Initiation

The events that initiated violent incidents are summarised in Figure 4.14 and given with more detail in Table 4.2. Only 8% of reported incidents were obviously pre-planned criminal activity, such as armed robberies or assailants coming in looking for victims.

Figure 4.14 Events involved in initiation of reported incidents (N = 1983)

Table 4.2 Behaviour that initiated reported incidents (N = 1983)

Initiating event	Numbers of incidents	
Customer misbehaviour	794	
Abusive language		*262*
Rowdy behaviour		*155*
Annoying other customers		*130*
Being intentionally provocative		*87*
Attempting to steal		*83*
Throwing things around		*76*
Attempting to get behind bar or into private areas		*72*
Interfering with equipment		*49*
Caught using drugs		*42*
Indecent behaviour		*29*
Refusal to pay		*28*
Other misbehaviours		*110*
Misbehaviour related to closing	151	
Refusing to drink up / leave		*110*
Demanding service after time		*51*
Barred customer entering premises	155	
Conflict between customers	623	
Domestic / family arguments		*65*
Argument over pool		*55*
Arguments over man / woman		*50*
Outside argument brought in		*48*
Conflict between separate groups		*32*
Racial conflict		*30*
Conflict between rival gangs		*17*
Conflict between regulars & non-regulars		*17*
Conflict between families		*12*
Conflict between rival football fans		*8*
Arguments involving members of staff	154	
Related to service		*140*
Between 2 or more members of staff		*14*
Pre-planned attacks	165	
Planned robberies / break-ins		*100*
Assailant looking for particular victim		*65*
Repercussions from previous incidents	130	
Attack immediate on entering premises	75	
Accident or misunderstanding	42	
No obvious cause	147	

Most incidents started as the type of customer misbehaviour or argument that is encountered by many pub staff on a regular basis. This balance of incidents supports the adoption of the model of a violent incident as an escalating process when examining violence in a public house setting. A variety of misbehaviours on the part of customers was reported in the initial stages of 48% of incidents. These misbehaviours included, for example, refusing to co-operate at closing time, using abusive language, being rowdy, attempting to steal and refusing to pay, and are detailed in Table 4.2. A barred customer entering the premises initiated 8% of the incidents.

Arguments or fights between customers initiated 31% of incidents. Details of the apparent cause of the argument, where this was known, are given in Table 4.2. Arguments between customers and members of staff, generally concerning service, preceded 7% of incidents while less than 1% involved arguments between two or more members of staff. 7% of incidents were stated to be direct repercussions from previous incidents at the premises, involving either the same people or their associates. For 7% of incidents, the licensee could see no obvious reason for the incident to have occurred.

4.3.2 Development

As incidents developed from the initial argument or misbehaviour, staff were reported to have intervened in 46% of incidents. Many of the interventions were unspecified, but some specific actions are itemised in Table 4.3. The most frequently recorded actions were requests to leave, which immediately preceded more violent behaviour in 28% of cases, and refusal of service, which was involved in 11% of incidents. Physical attack that followed was often directed towards the member of staff intervening or towards property. It is not often possible to infer from the incident reports whether staff intervention was sensitive or heavy-handed.

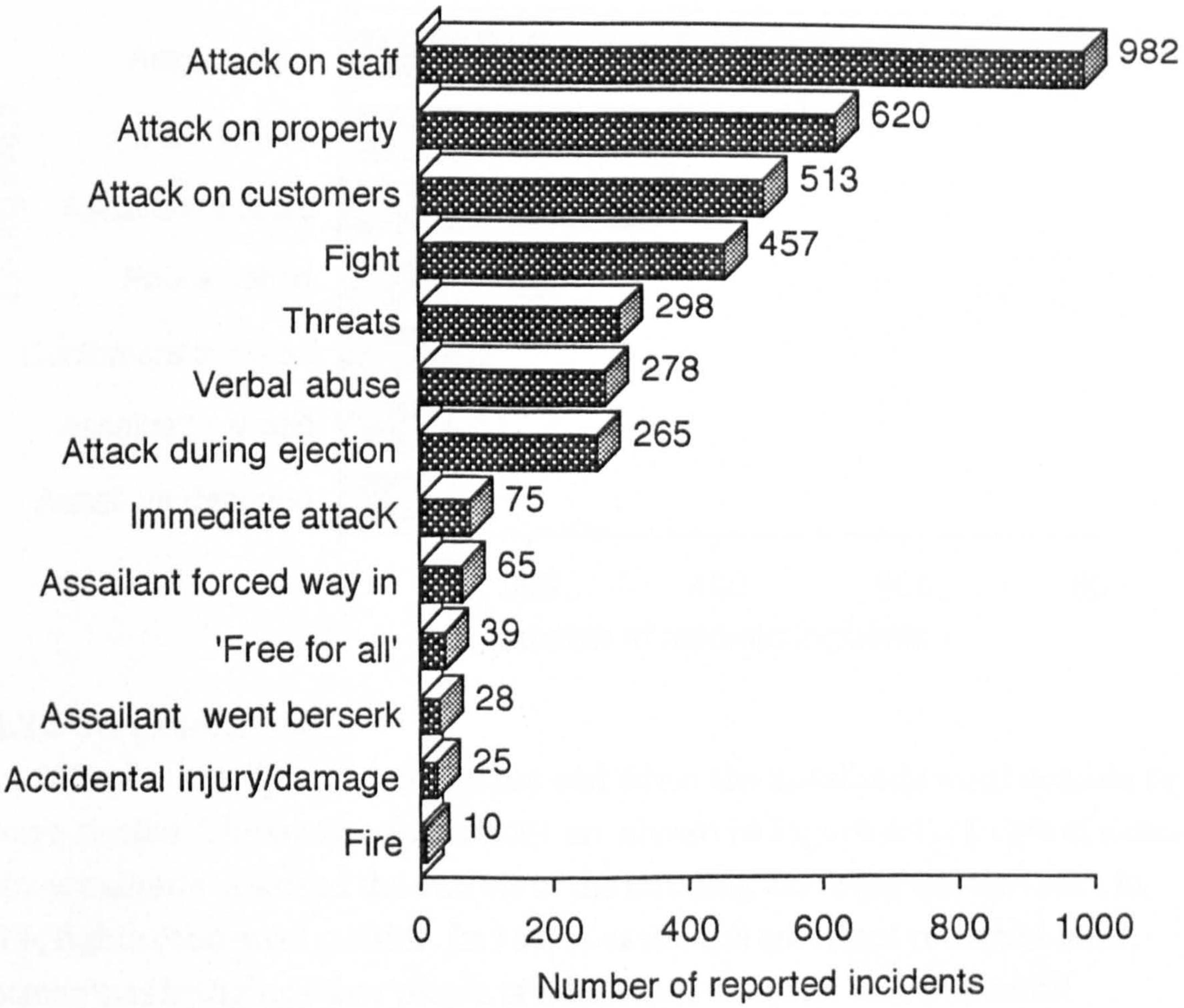
4.3.3 Culmination

Common events that happened at the climax of incidents are shown in Figure 4.15. The most common form of physical violence, reported in 50% of incidents, was an attack on members of staff. Attacks on property occurred in 31% of incidents and attacks on customers in 26%. In 13% of incidents, the assailant made an attack while being ejected, having made no physical attack up to that point. Fights were reported in 23% of incidents, threats were recorded in 15% and verbal abuse in 14%. It might be supposed that the amount of verbal abuse recorded here is lower than in reality because people

Table 4.3 Interventions by members of staff (N = 918)

Action taken by staff	Numbers of reported incidents	
Request to leave	563	
Barred customer		*104*
Refusal of service	211	
Barred customer		*83*
Present behaviour		*90*
Previous behaviour		*19*
Underage customer		*19*
Informing customers they were barred	41	
Refusal of entry	37	

Figure 4.15 Culmination of incidents (N = 1983)

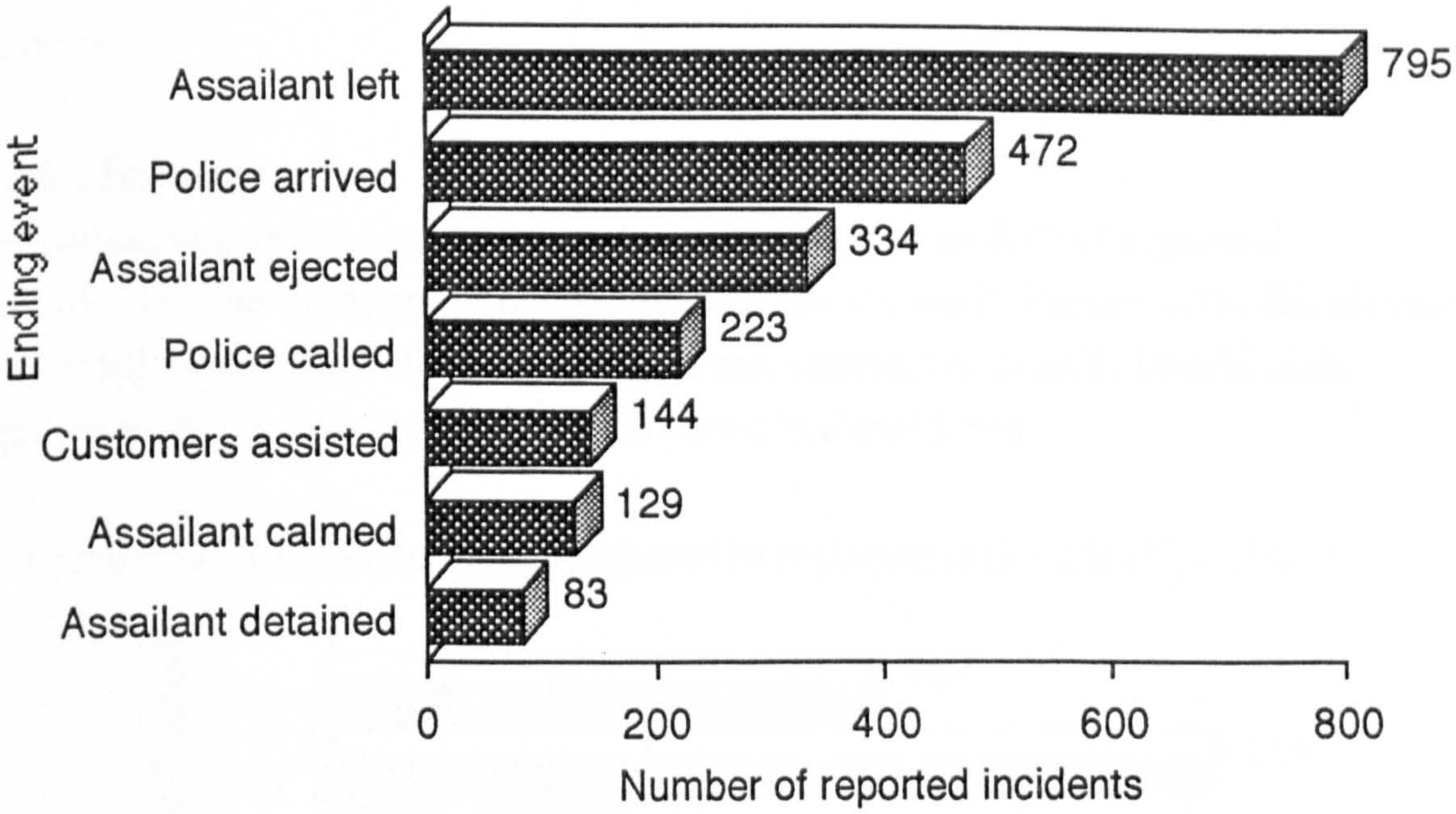


reporting incidents tended to concentrate on the more severe forms of aggression, such as physical attack, when describing what occurred. The type of physical attack, that is kicking, punching, head-butting, etc., was not specified sufficiently often in the description of the incidents to provide useful statistics.

4.3.4 Ending

The most common events that brought incidents to an end, shown in Figure 4.16, were that the assailants left (42%) or were ejected (18%), the police arrived (25%), or the assailants knew that the police had been called (12%). Other factors mentioned as contributing to the ending of an incident were the assistance of customers, calming of assailants, the detaining of assailants until police arrived, escape of staff from the situation, injury to staff or customers and injury to the assailant. Descriptions of what brought an incident to an end were often unclear, and the information was thought not to be reliable enough to be used in analysis. It is included here for completeness.

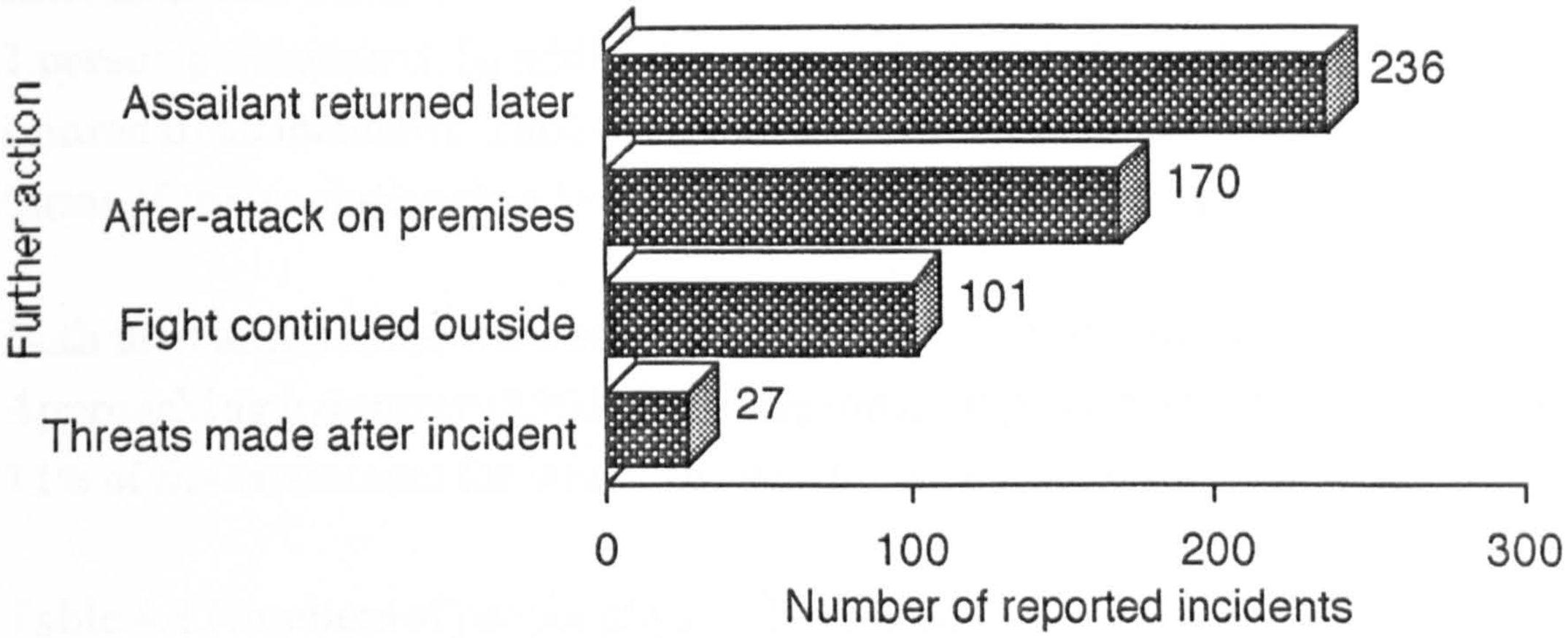
Figure 4.16 What brought the incident to an end (N = 1889)



4.3.5 Continuation

In 25% of cases, the incident did not end when the assailants went outside or were ejected. The continuing actions are shown in Figure 4.17. In 9% of cases, the assailants attacked the outside of the building following ejection and, in 5%, fights continued outside. In 12% of cases, the assailant returned later, sometimes bringing other people or additional weapons and, in a small number of cases, staff received threats following incidents.

Figure 4.17 Continuing action after assailants exited the premises (N = 1983)



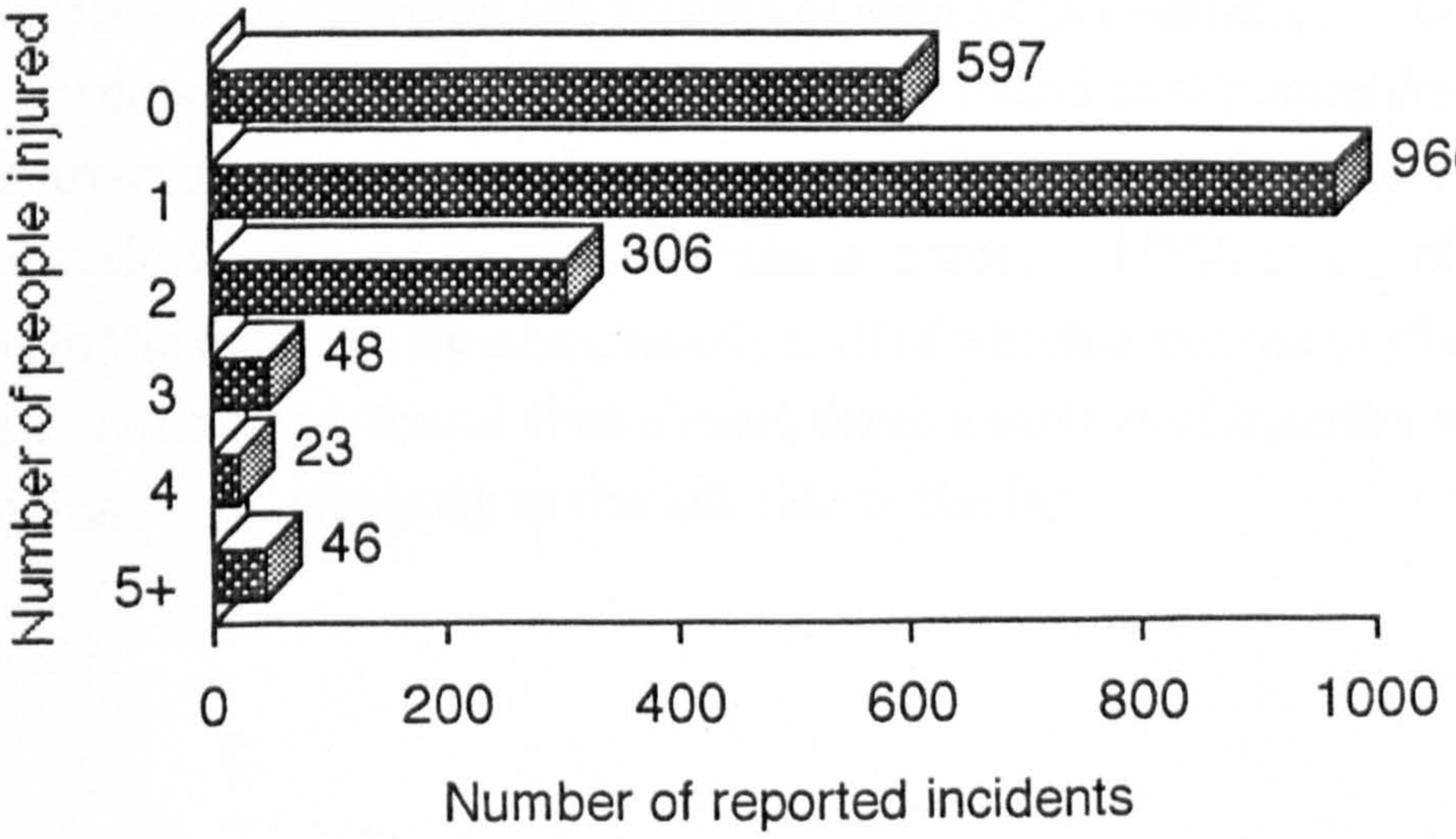
4.4 THE OUTCOME OF INCIDENTS

As has been discussed in Section 2.2.3, incident report systems are generally effective in recording physical injury and damage to property, but not psychological injury. While the KPP IRF included the category "upset" in the question about type of injury, this only captured a small amount of the psychological harm incurred. The outcomes given here relate only to physical injury.

4.4.1 Injuries

Physical injury was caused to at least one person in 70% of reported incidents. The numbers of people injured are shown in Figure 4.18. Employees were injured in 49% of reported incidents, customers in 28%. In addition, police were reported to have been injured in 6 incidents.

Figure 4.18 Numbers of people injured in reported incidents (N = 1983)



At least 1952 people were known to have been injured in the 1983 reported incidents that occurred between 1992 and 1998, that is an average of around 1 person per incident. In addition, unspecified numbers of customers were injured in 22 incidents. Table 4.4 gives a breakdown of the persons injured in terms of their relationship to the licensed house, and their gender.

Both men and women were seen to be injured in violent incidents. Approaching a quarter (23%) of the employees injured were women, as were 11% of the customers for whom the gender was stated.

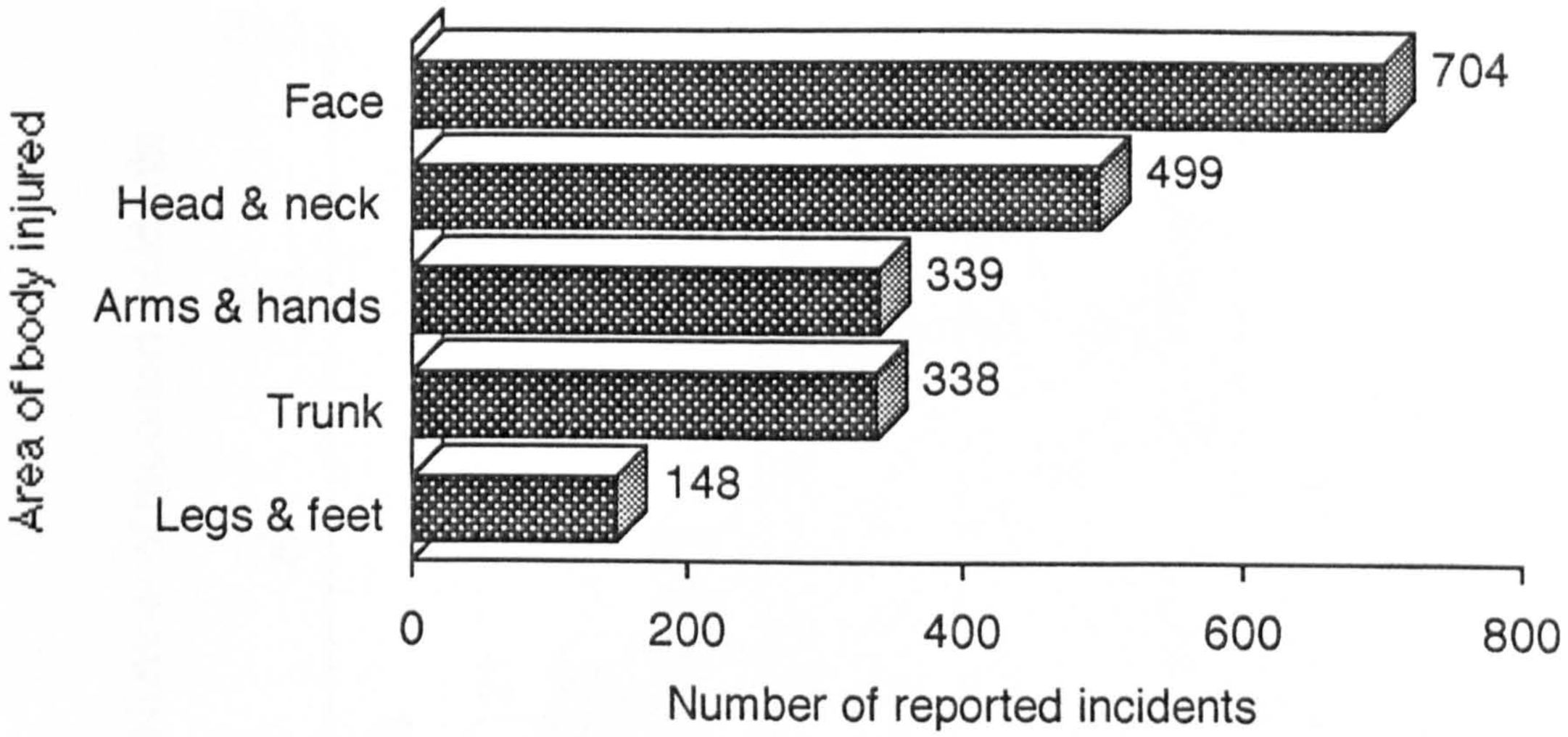
Table 4.4 Numbers of people physically injured in reported incidents
(N = 1983)

	Gender			
Job/role	Male	Female	Unspecified	**Total**
Employees	929	284	19	**1232**
Customers	535	77	99	**711†**
Police	0	0	9	**9**
Total	**1464**	**361**	**127**	**1952†**

† In addition unspecified numbers of customers were injured in 22 incidents

Almost half the reported incidents (49%) resulted in injury to members of staff, 27% in injury requiring medical attention and 6% in-patient treatment. Many employees suffered multiple injuries as a result of assaults. Almost three quarters of the incidents (74%) resulting in employee injury produced injuries to the face, and half (54%) produced injuries to the head. Areas of the body injured are shown in Figure 4.19. A similar pattern was found for customer injuries. This finding ties in with that by Langley, Chalmers and Fanslow (1996) who studied the victims of assault presenting at hospital emergency departments in New Zealand. They found that homicides and assaults around licensed premises were more likely to involve head injury than those that occurred in other locations. Ström's (1992) study of assaults reported to the police in Sweden, nearly half of which occurred in places of public entertainment, found that almost three quarters of injuries were to the head and neck, particularly to the left side of the face.

Figure 4.19 Area of body injured for employees (N = 1983)



4.4.2 Damage to property

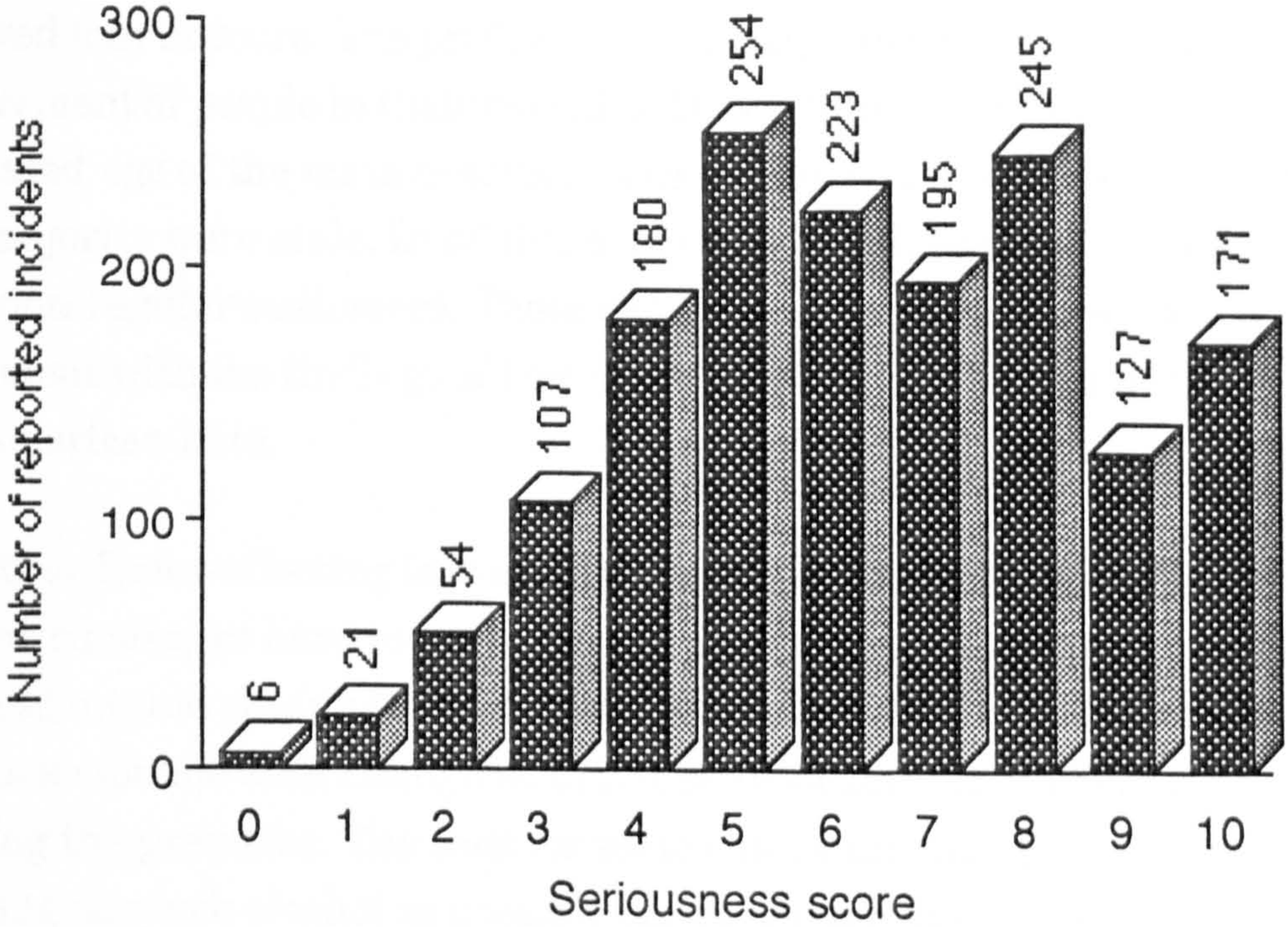
Damage to property was reported in 60% of incidents. Such damage ranged from breakage of a few glasses to damage so extensive that individual items were not specified, for example, "entire lounge area damaged", "pub ransacked". The most frequently damaged items were glasses (17%), clothing (15%), windows (15%), furniture (9%) and doors (5%).

4.5 THE SERIOUSNESS OF INCIDENTS

As already mentioned in Section 3.4, the KPP IRF asks the respondent to rate how serious the incident was on a scale of 0-10, where 0 was "trivial" and 10 was "the most serious you could ever imagine". This scale was chosen because it is a means of scoring familiar to most people. Further, it could be easily explained over the telephone and did not rely on a visual scale. The seriousness score gives a crude assessment of the severity and importance of the incident as appraised by those members of staff actually involved in it. Its usefulness and its limitations are considered in detail in Section 5.2.

80% of incidents were scored in this way. The pattern for the whole period 1992 to 1998 remained similar to that seen previously for the period 1992 to 1994, showing an increase in numbers with increasing seriousness score up to the middle of the scale, then a general decrease going towards higher scores. The mean rating was 6.3, the median 6. The responses are shown in Figure 4.20.

Figure 4.20 Seriousness ratings for reported incidents (N = 1583).



4.6 DISCUSSION

This chapter has provided a general overview of some of the features of incidents reported through the KPP IRS and has begun to consider their dynamic nature. Only 8% of incidents were planned criminal attacks. The great majority involved the behaviour of customers during normal drinking. A picture of typical incidents can be built up.

The majority of incidents occurred at the weekend, half occurred late in the evenings, between 10pm and midnight, and the majority when the premises were crowded. The times of highest frequency fit with the busiest times most for public houses so this type of pattern would be expected simply on an incident to customer ratio basis. In addition, the socialising in groups that is so important for young people tends to occur particularly on weekend evenings (Engels, Knibbe & Drop, 1999; Felson, Baccaglini & Gmelch, 1986), so increasing the likelihood for group effects and inter group rivalries to come into play (Mummendey & Otten, 1993). This view is reflected in the fact that 59% of incidents involved groups of men, and 18% mixed groups. When groups were involved, only those people who actually became aggressive were counted as assailants. Indeed, on occasion, other members of a group brought incidents to an end by calming or removing the person acting aggressively.

However, the involvement of groups is demonstrated in that over half the incidents involved more than one assailant or aggressor, and over a quarter involved four or more. The profiles of the assailants also reflected the involvement of people in their twenties. In two thirds of incidents the estimated age of the main assailant was between 21 and 30 years and the vast majority were male. In addition, more than half the main assailants were non-regular customers. These characteristics of assailants are in agreement with the findings of Felson, Baccaglini and Gmelch (1986) in Irish and American bars.

The other factor affecting late evening is, of course, that the premises close and the customers have to leave. Almost one third of the reported incidents occurred around closing time, that is, within a period of about 45 minutes. The tasks for the staff change at this time from serving customers to clearing the premises. The task for some customers may also change - to drinking as much alcohol as possible before leaving and trying to stay on the premises for as long as they can (Hillas, Cox & Higgins, 1988). This alteration in the relationship between the staff and customers is a ready source of conflict which requires careful managing (Leather, Beale, Lawrence & Maxwell, 1996).

The amount of alcohol consumed by late evening is also likely to influence the possibility of conflict occurring and people reacting aggressively at that time (e.g. Murdoch, Pihl and Ross, 1990; Pernanen, 1991). In addition to the alcohol legitimately consumed, however, drugs were also thought or suspected to be affecting the behaviour of around 15% of main assailants. In total, around a quarter of incidents were known or suspected to involve drug-related activity of some kind. As discussed in Section 1.4, drugs provide danger for licensed house staff both in the unpredictability of the behaviour of people under the influence of drugs and in the likelihood of disputes occurring around drug dealing activity. This involvement of illegal drugs was seen to increase over the period of study. Indeed, it did not appear as an issue when the initial violence audit was carried out in 1987, and was not introduced to the KPP IRF until 1992.

Almost half the reported incidents (48%) began as some kind of misbehaviour by customers. Sometimes this involved obviously illegal behaviour, such as stealing or using drugs on the premises. More often it involved behaviour that was deemed inappropriate by the staff, that is it broke the norms for

behaviour in those premises, for example by using abusive language or being too rowdy. Norm violation is one of the precursors to aggressive behaviour most often cited in the literature (see Geen, 1990; Tedeschi & Nesler, 1993) including within licensed premises (Felson, Baccaglini & Gmelch, 1986). It provides a difficult problem for staff to manage because of the necessity to challenge the behaviour in some way, and the differences in perceptions of what constitutes acceptable behaviour.

Around a third of incidents (31%) began as conflict between customers. Arguments involving close relationships, either within families or concerning a boyfriend or girlfriend, were common. Other conflict concerned "rules of the game" as in the playing of pool, or involved inter group differences such as regulars versus non-regulars, racial differences or gang rivalry. Management by staff in these cases often involved intervention to try to calm an already heated situation, posing rather a different problem from that of misbehaviour.

Staff intervention was reported in almost half the incidents (46%). Whether the manner of the intervention was appropriate cannot often be ascertained from the reports, particularly as the people reporting were often the people who intervened, so that some social response bias has to be expected (Saunders, 1991). Of relevance to the manner of intervention is that around a quarter of incidents (22%) did not finish when the assailants exited the premises but continued in some form, such as an attack on the building, a fight outside or return at a later time to further the action. This suggests that intervention may not always have resolved the conflict satisfactorily for all parties but may have left grievances that led to continued or later aggressive action (see Tedeschi & Nesler, 1993; Skarlicki & Folger, 1997). Responses to aggressive incidents by staff in licensed premises was described by Wells, Graham & West (1998) as "the good, the bad and the ugly", emphasising the pivotal role of the manner of intervention in determining how incidents progress.

Half the incidents (50%) involved a physical attack on members of staff, a quarter (26%) involved an attack on customers and a third (31%) an attack on property. In over half the incidents (54%), a weapon of some kind was either brandished as a threat or used in a physical attack. For 36% of incidents, these weapons were ordinary objects obtained from the premises, typically glasses, bottles, furniture, ashtrays and pool equipment. In 20% of

incidents, however, a weapon was brought into the premises, most commonly a knife, although a wide variety of other weapons was faced by licensees, as shown in Appendix 9.

Physical injury was caused to some person in over two thirds of reported incidents (70%) and damage to property resulted from 60% of incidents. Staff were injured in half the incidents (49%), customers in over a quarter (28%). Injury to members of staff requiring medical attention was incurred in a quarter of incidents (27%). The majority (59%) of injuries were to the face and head, in line with the findings of Langley, Chalmers and Fanslow (1996) and Ström (1992).

The rating of seriousness by the licensee, or other members of staff involved in the incident, was an innovative measure for incident reporting systems. Although it is a simple measure, it is important because, as Barling (1996) states, people's perceptions of events reflect psychological stress, and it is the stress that ultimately generates psychological strain. The important question of how the seriousness rating relates to the other features of the incident is investigated in the next chapter.

Relationships between the different features of incidents are examined in the following chapters utilising both standard and innovative methodologies. Each chapter introduces different strategies that further the exploration of the incident as a developing process in line with the theoretical approach adopted in this thesis.

CHAPTER 5: EXPLORING THE OUTCOMES AND SERIOUSNESS OF INCIDENTS

One of the purposes of gathering information about violent incidents is to determine the possibility of relating the outcome of incidents to factors or events that occurred during the incident. Consideration of the incident as a process has already been introduced in Section 4.3. This chapter extends this thinking to examine the features of incidents that are most likely to affect the outcome as the incident progresses. This should provide information to enable risk reduction measures to be targeted, as far as possible, at features that occur early in problem incidents, so as to be preventative in preference to being reactive, in accordance with the model of violence explained in Section 1.2.

Some aspects of the incidents occurring within licensed premises seem, both intuitively and from the literature, to be likely to increase the severity of the outcome of those incidents. Such aspects include the amount of crowding, the number of assailants involved, the assailants being men rather than women, the involvement of weapons and of drugs. However, these assumptions needed to be tested in this context. It was suggested that the severity of the outcome of incidents would be increased by increased crowding, a higher number of assailants, men assailants rather than women, the involvement of weapons and the involvement of drugs.

In accordance with the dynamic model of the incident as a developing situation, and in order to demonstrate the potential benefit of early intervention in problem situations, what happened early in incidents needed to be shown to affect the outcome of incidents. It was contended that relationships could be demonstrated to exist between the outcomes of incidents and events that happened at the early stages of incidents.

In addition to the physical outcome of incidents, this chapter examines the appraisal outcome in terms of how serious the licensees, or their staff who were actually involved in the incidents, judged those incidents to have been. This is to challenge the view that the seriousness of incidents can be determined by the physical outcome alone, but to emphasise that incidents that were potentially dangerous but did not result in major physical injury can be very distressing to those involved. Accordingly, it was anticipated that

analysis would reveal that, although licensees' appraisal of how serious incidents had been would be related to the physical outcomes, other, less obvious factors would also affect those appraisals.

In order to test these hypotheses, the relationships between the physical outcomes and the features of incidents that were expected to affect those outcomes were examined initially. These same features plus the physical outcomes themselves were then examined in relation to the seriousness scores given by reporting licensees.

5.1 DETERMINATION OF PHYSICAL OUTCOMES

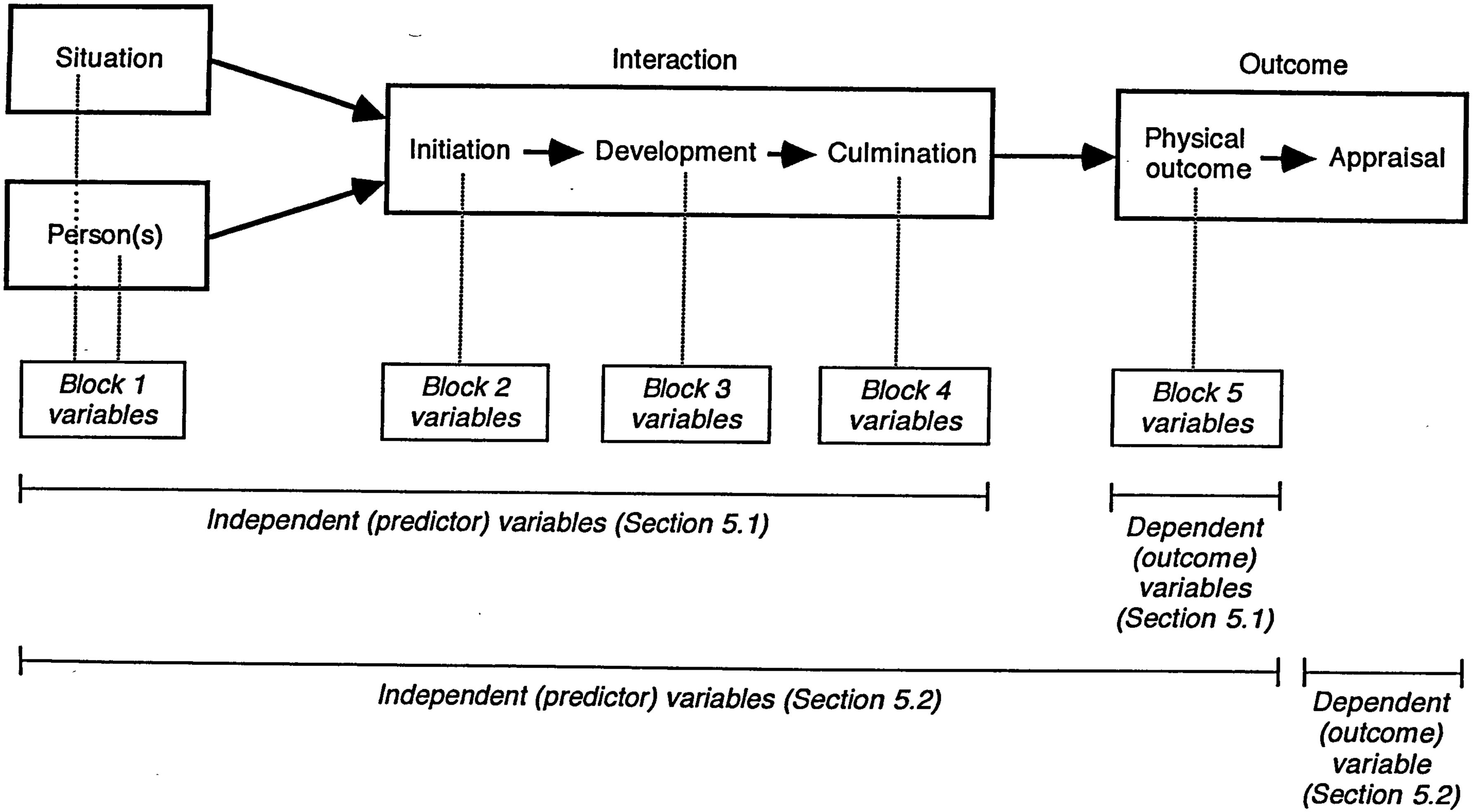
5.1.1 Method

Hierarchical multiple regression was chosen to determine features of incidents that were related to the outcome of incidents, as this allowed entry of the predictor (independent) variables into the regression equation according to progress through the incident. This is shown diagrammatically in Figure 5.1, based on the model developed in Section 1.2.

The outcomes that were most readily identifiable from incident reports were physical injury and damage. Four outcome (dependent) variables were chosen relating to whether customers were injured, whether members of staff were injured, whether any person suffered injury that was serious enough to require medical attention, and whether property was damaged. Other outcomes, such as psychological damage or financial harm, could rarely be ascertained from incident reports as they would not be obvious, or not quantifiable, by the time the reports were completed, whereas physical outcomes were normally apparent immediately.

Possible predictor variables to enter into the regression equations were selected on the basis of a number of different criteria. Some were selected because intuitively they would be expected to have an effect on the outcome of the incident. These included, for example, the number of assailants, whether a weapon was involved, whether the incident began as an argument between customers, whether a member of staff intervened, or whether there was an attack on a member of staff.

Figure 5.1 Model of progression through incident and entry of variables into regression equations



Other variables were selected to discover whether they had any effect on the outcome of incidents. Such variables included, for example, the day of the week and time of the day, the gender and age of the assailants, and the involvement of drug-related activity.

Another criterion for selection of predictor variables was association with the occurrence of violence as found in the academic literature. However, such association often relates to the likelihood of involvement in violent incidents rather than to the outcome of those incidents. Situational variables chosen related to:

- Time of the day and of the week: These have been shown to be related to the occurrence of violence by, for example, Felson, Baccaglini and Gmelch (1986) and Salminen (1997, 1998);
- Type of premises: This reflects the influence of the physical and social environment in the occurrence of assaults in licensed premises (e.g. by Stockwell, Somerford & Lang, 1992); in particular the presence of pool tables has been found consistently to be related to the incidence of violence (Dickson, Leather, Beale & Cox, 1994b; Graham et al., 1980; Hillas et al., 1988);
- Crowding: This might be expected to affect the likelihood of a more serious outcome for a number of reasons including (i) group effects, such as "deindividuation" (Zimbardo, 1970), and (ii) audience effects, as discussed by Mummendey and Otten (1993) and by Lawrence and Leather (1999), as well as (iii) an increased likelihood of transfer to third parties (Felson & Steadman, 1983) and (iv) increases in noise levels, temperature and number of invasions of personal space associated with increasing density (Macintyre & Homel, 1997).

Person variables related to:

- Numbers of assailants: Homel, Tomsen and Thommeny (1992) demonstrated that the presence of several groups of males increased the risk of violence occurring.
- Gender: In addition to the above finding by Homel et al. (1992), Langley, Chalmers and Fanslow (1996), in New Zealand, found that hospitalisation after involvement in assaults in licensed premises was much higher for males than for females. In addition, Lindholm and Christianson (1998a) found that eyewitnesses judged

males as more culpable than females in corresponding violent crime scenarios.

- Age: Felson et al. (1986) found that age of protagonists was the best predictor of occurrence of physical violence while Langley et al. (1996) found that hospitalisation rates after involvement in assaults peaked for people in their mid-20s.

Variables that concerned existing interaction between the person and the situation related to:

- Weapons having been brought in to the premises.
- The involvement of drugs: This might pertain to the direct effects of some drugs to increase the propensity to behave violently, e.g. for amphetamines, crack or cocaine (Leather, Lawrence, Beale & Maxwell, 1996a), or to participation in the illegal traffic in drugs, as discussed in Section 1.4.
- Assailant having previously been barred: Previous violence has been found to be a good predictor of future violence by, for example, Greenberg and Barling (1999).

Also taken into account was the confidence placed in the accuracy of the information given. For example, details regarding the member of staff involved were rejected because it was noted that the details given on report forms often related to the licensee rather than to the member of staff most directly involved in the incident. Other variables relating to the presence or absence of a particular feature were rejected if the feature only occurred in a small number of incidents.

Some variables were combined to give features at a coarser level of granularity; for example, a number of types of unacceptable behaviour such as stealing, refusing to pay for drinks, being rowdy or acting indecently, were combined to produce the variable misbehaviour. Conversely, the variable regarding where a weapon was obtained provided two predictor variables relating to (i) whether a weapon was brought in and (ii) whether an object was obtained from the premises for use as a weapon.

All the possible predictor variables and the physical outcome variables were manipulated to produce dichotomous variables, coded as 0-1, that could legitimately be employed in multiple regression (Bryman & Cramer, 1999: 255; Tabachnick & Fidell, 1996: 281). Hierarchical multiple regression was

chosen in preference to logistic regression, which might have been the obvious choice at this stage since all the variables were in a dichotomous form. However, the appraisal outcome variable seriousness, which was included at a later stage, could be treated as approximating to normal distribution, as described in Section 5.2.2. Hierarchical multiple regression was chosen for consistency throughout.

Details of the possible predictor variables and the outcome variables are given in Table 5.1. It can be seen from the means that some of the dichotomous variables (i.e. assailant's gender, misbehaviour re closing, argument involving staff, barred customer entering, pre-planned attack, repercussion) are split very unevenly with over 90% of responses falling into one category. However, it was decided to retain these variables of interest accepting that their correlation with other variables would be lowered (cf. Tabachnick & Fidell, 1996: 92).

Predictor variables to enter into the regression equation for each outcome variable were then selected according to correlation with the outcome variables significant at the .05 level. Pearson product-moment correlation *r* could legitimately be used as the measure of association between the dichotomous variables as they were all coded 0-1 (Tabachnick & Fidell, 1996: 814).

Rationale for entering data

A hierarchical approach was adopted for entering predictor variables into the regression equations. They were entered in four blocks for the physical outcome variables, following the development of the incident, as shown in Figure 5.1. Variables relating to the situation, the assailant(s) and conditions existing at the start of the incident were entered in the first block, initiation variables in the second block, development variables in the third block and culmination variables in the fourth block (see Table 5.5).

The variables were generally straightforward to place in the different blocks. However, a few need some explanation. The variables relating to weapons come into different blocks on the basis that bringing a weapon intentionally into the premises is different, both qualitatively and temporally from picking

Table 5.1 Variables used in multiple regression

Variable	Description	Scoring		Mean
		Predictor variables		
Situation and person variables				
Day	Weekday (Monday to Thursday) *or* Weekend (Friday to Sunday)	0 (Weekday)	1 (Weekend)	.639
Time	Late evening, i.e. 10pm - 2am	0 (Not late evening)	1 (Late evening)	.544
Closing	Around closing time, i.e. from 15 mins before end of serving until premises cleared of customers	0 (Not around closing time)	1 (Around closing time)	.340
Pool venue	Premises dedicated to pool	0 (Not pool venue)	1 (Pool venue)	.181
Crowding	Premises crowded	0 (Not crowded)	1 (Crowded)	.602
Number of assailants	Number of assailants involved in incident	0 (Only 1 assailant)	1 (More than 1 assailant)	.545
Assailant's age	Main assailant's age	0 (Up to 25 years)	1 (Over 25 years)	.541
Assailant's sex	Main assailant's sex (gender)	0 (Female)	1 (Male)	.928
Assailant barred	Main assailant barred prior to incident	0 (Not previously barred)	1 (Previously barred)	.131
Drugs	Involvement of drug-related activity suspected or known	0 (No involvement of drugs)	1 (Involvement of drugs)	.245
Weapon brought in	Weapon brought in by assailant	0 (No weapon brought in)	1 (Weapon brought in)	.197

(continued)

Table 5.1b (continued)

Variable	Description	Scoring		Mean
		Predictor variables (continued)		
Interaction: Initiation				
Misbehaviour	Misbehaviour by customers, e.g. stealing, rowdiness, indecency, abusive language, going behind bar, interfering with equipment	0 (No misbehaviour)	1 (Misbehaviour)	.400
Misbehaviour re closing	Misbehaviour by customers re closing, i.e. demanding service after time or refusing to leave	0 (No misbehaviour re closing)	1 (Misbehaviour re closing)	.076
Argument between customers	Argument or fight between customers	0 (No argument between customers)	1 (Argument between customers)	.314
Argument involving staff	Argument involving staff	0 (No argument involving staff)	1 (Argument involving staff)	.078
Barred person entering	Barred person entering premises	0 (No barred person entering premises)	1 (Barred person entering premises)	.078
Pre-planned attack	Pre-planned criminal activity	0 (Not pre-planned)	1 (Pre-planned)	.080
Repercussion	Repercussion from previous problem at premises	0 (Not repercussion)	1 (Repercussion)	.066

(continued)

Table 5.1 (continued)

Variable	Description	Scoring		Mean
		Predictor variables (continued)		
Interaction: Development				
Intervention	Intervention by staff	0 (No intervention)	1 (Intervention)	.463
Weapon from premises	Object obtained from premises used as weapon	0 (No weapon from premises)	1 (Weapon from premises)	.363
Interaction: Culmination				
Threat	Threats made by assailants	0 (No threat)	1 (Threat)	.150
Fight	Fight occurred	0 (No fight)	1 (Fight)	.230
Attack on staff	Physical attack made on member of staff	0 (No attack on staff)	1 (Attack on staff)	.495
Attack on customer	Physical attack made on customer	0 (No attack on customer)	1 (Attack on customer)	.259
Attack on property	Physical attack made on property	0 (No attack on property)	1 (Attack on property)	.313
Attack during ejection	Physical attack made while assailants being ejected from premises	0 (No attack during ejection)	1 (Attack during ejection)	.134
Further action	Further action after assailants exited premises	0 (No further action)	1 (Further action)	.221

(continued)

Table 5.1 (continued)

Variable	Description	Scoring		Mean
		Outcome variables		
Physical outcome				
Injury to staff	Any physical injury to member of staff	0 (No injury to staff)	1 (Injury to staff)	.496
Injury to customers	Any physical injury to customer	0 (No injury to customer)	1 (Injury to customer)	.286
Injury (medical)	Injury to any person requring medical attention	0 (No injury requiring medical attention)	1 (Injury requiring medical attention)	.455
Damage to property	Damage to property	0 (No damage to property)	1 (Damage to property)	.603
Appraisal				
Seriousness	Seriousness score for incident given by staff involved	Range: 0 (Trivial) to 10 (Most serious you could ever imagine)		6.289 (*SD*=2.313)

up an object from the premises to use as a weapon once an incident has started. Qualitatively, bringing in a weapon is evidence of some sort of pre-existing expectation on the part of the assailant that violence will or may occur and a preparedness to act aggressively, whereas obtaining a weapon from the premises was more likely to have occurred on impulse as a reaction to events. Temporally, for the reported incidents, bringing in a weapon usually occurred before the incident started whereas obtaining a weapon from the premises normally occurred as the incident developed. Marked dissimilarity in measures of association for the two variables with the outcome variables (see Table 5.2) supported this separate treatment of the two ways of obtaining weapons.

The number of assailants might also have been placed in the development block as it could be argued that, for some incidents, more people became involved as assailants as the incidents progressed. For other incidents, however, more than one assailant was involved from the start. It was decided, on balance, to treat the number of assailants as a descriptive variable rather than giving it any temporal quality.

5.1.2 Results

Table 5.2 gives the Pearson product-moment correlations between predictor and outcome variables, identifying those that were significant above the $p <$ .05 level and, therefore, entered in the regression equation for the different outcome variables. No two predictor variables correlated above .69 so all met the criterion ($r \leq .80$, Bryman & Cramer, 1999: 254; $r < .70$, Tabachnick & Fidell, 1996: 86) for avoiding multicollinearity in the multiple regression analysis. However, because of the uneven split of some variables, output was examined carefully, particularly regarding predictor variables that correlated above .50, for example time and closing, assailant previously barred and barred person entering.

Injury to staff

The predictor variables entered in the regression equation for injury to staff were: (Block 1) time, closing, assailant's gender, drugs, weapon brought in; (Block 2) misbehaviour, misbehaviour re closing, argument between customers, argument involving staff; (Block 3) intervention; (Block 4) threat, fight, attack on staff, attack on customer, attack on property, attack during ejection, further action. The variable closing was dropped from the analysis because, although the correlation with time was only .61, time and closing

Table 5.2 Pearson product-moment correlation *r* between outcome variables and possible predictor variables (N = 1983)

Predictor variables	Outcome variables: Injury to staff	Injury to customers	Injury (medical)	Damage to property	Seriousness
Situational demographics and existing conditions					
Day	.027	.069**	.073**	-.055*	.012
Time	.072**	.029	.066**	-.031	-.020
Closing	.070**	.014	.067**	-.016	-.021
Pool venue	-.036	.044	.011	.034	.089***
Assailant's age	-.018	-.012	.002	-.049*	.000
Assailant's gender	-.099***	-.004	.005	.005	.053*
Assailant barred	.018	-.128***	-.048*	-.006	.025
Drugs	.063**	-.037	.014	.049*	.132***
Weapon brought in	-.119***	.031	-.019	.049*	.250***
Number of assailants	.021	.106***	.067**	.087***	.120***
Crowding	-.017	.088**	-.001	-.014	.004
Initiation					
Misbehaviour	.123***	-.132***	-.016	.032	-.011
Misbehaviour re closing	.111***	-.097***	.032	-.004	.017
Argument between customers	-.197***	.367***	.062**	-.049*	-.049
Argument involving staff	.119***	-.105***	.018	-.015	-.047
Barred person entering	.034	-.147***	-.051*	-.021	-.004
Pre-planned attack	-.001	-.023	-.009	.073***	.178***
Repercussion	.039	-.090***	.016	-.014	.105***

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 5.2 (continued) Pearson product-moment correlation between outcome variables and possible predictor variables (N = 1983)

Predictor variables	Outcome variables: Injury to staff	Injury to customers	Injury (medical)	Damage to property	Seriousness
			Development		
Intervention	.238***	-.114***	.039	-.014	-.042
Weapon from premises	-.010	.134***	.109***	.313***	.092***
			Culmination		
Threat	-.135***	-.148***	-.166***	-.037	.100***
Fight	-.088***	.277***	.062**	.014	-.008
Attack on staff	.689***	-.336***	.176***	-.075**	.069**
Attack on customers	-.244***	.616***	.207***	-.074**	.017
Attack on property	-.147***	-.194***	-.230***	.487***	-.010
Attack during ejection	.210***	-.100***	.040	-.060**	-.036
Further action	-.080***	.030	-.028	.116***	.001
			Outcome		
Injury to staff	-	-.288***	.311***	-.034	.113***
Injury to customers	-	-	.341***	-.067**	.096***
Injury (medical)	-	-	-	-.040	.278***
Damage to property	-	-	-	-	.065**

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

were obviously preventing each others' contributions from reaching significance. Of the two, time provided the greater contribution when the analysis was rerun. The final results of the regression are presented in Table 5.3.

These predictors entered in the regression equation explained a total of 50% of the variance in injury to staff. The demographics and pre-existing conditions accounted for 3% of the variance. The time being between 10pm and 2am, a female main assailant and the involvement of drug-related behaviour all showed small but significant positive effects on injury to staff while the presence of a weapon brought into the premises produced a significant negative effect.

Initiation accounted for 5% of the variance. Arguments involving staff and misbehaviour related to closing each showed a small but significant positive effect on injury to staff while argument between customers produced a significant negative effect.

The development of the incident accounted for a further 5% of the variance. This came entirely from intervention by staff which showed a significant positive effect.

The culminating events accounted for 37% of the variance. An attack on staff showed the largest significant positive effect; a fight and an attack while being ejected both showed small positive effects. Threat and attack on property showed small negative effects.

Comment. The positive effect of a female main assailant and the negative effect of a weapon brought into the premises on injury to staff might be thought to be unexpected, but may be explained by attitudes to reporting based on awareness of danger. It could be argued that women were generally not thought to be dangerous, so problems with women were not reported unless they had a serious outcome. This attitude finds a parallel in the findings of Dyck (1980), albeit in Western Canada, where the involvement of women in violence was generally viewed with amusement rather than as a serious risk. Conversely, a weapon was recognised as dangerous so the incident was reported although no physical harm was done. In addition, people might be more careful when faced with a potential aggressor holding a weapon, so reducing the likelihood of escalation.

Table 5.3 Hierarchical multiple regression for injury to staff (N = 1678)

Predictor variable entered	Cum R^2	Adj R^2	ΔR^2	ΔF	β	t
Demographics	**.031**	**.029**	**.031**	**13.48*****		
Time					**.068**	**2.83****
Assailant's gender					**-.088**	**-3.65*****
Drugs					**.081**	**3.35*****
Weapon brought in					**-.115**	**-4.73*****
Initiation	**.081**	**.077**	**.050**	**22.72*****		
Argument between customers					**-.177**	**-6.96*****
Argument involving staff					**.070**	**2.90****
Misbehaviour					.037	1.51 ns
Misbehaviour re closing					**.049**	**1.97***
Development	**.131**	**.126**	**.050**	**94.75*****		
Intervention					**.231**	**9.73*****
Culmination	**.498**	**.493**	**.367**	**173.63*****		
Threat					**-.063**	**-3.36*****
Fight					**.071**	**3.58*****
Attack on staff					**.623**	**29.47*****
Attack on customer					**-.022**	**-1.08 ns**
Attack on property					**-.058**	**-2.99****
Attack during ejection					**.043**	**2.31***
Further action					-.019	-1.05 ns

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

The effects of the initiation variables were as expected in that those directly involving staff and/or their control function (i.e. arguments involving staff and misbehaviour re closing) are obviously more likely to be hazardous in terms of staff personal safety than those involving only customers.

Not unexpectedly, the variable having the greatest individual effect on injury to staff, apart from direct physical attack on the staff, was intervention by staff during the development of the incident. Intervention was thus seen to be hazardous to staff irrespective of how the incident began.

The culmination variables showed the expected effects in that attack on staff had by far the greatest effect on injury to staff. However, fights and attacks during ejection were more likely to be associated with injury to staff than were threats and attacks on property.

Injury to customers

The predictor variables entered in the regression equation for injury to customers were: (Block 1) day, assailant barred, number of assailants, crowding; (Block 2) misbehaviour, misbehaviour re closing, argument between customers, argument involving staff, barred person entering, repercussion; (Block 3) intervention, weapon from premises; (Block 4) threat, fight, attack on staff, attack on customer, attack on property, attack during ejection. The results of the regression analysis are presented in Table 5.4.

These predictors entered in the regression equation explained a total of 44% of the variance in injury to customers. The demographics and pre-existing conditions accounted for 3% of the variance. The presence of more than one assailant and the premises being crowded showed small but significant positive effects on injury to customers while the assailant being barred previously produced a significant negative effect.

Initiation accounted for 12% of the variance. Argument between customers showed a significant positive effect on injury to customers while misbehaviour, misbehaviour re closing and barred person entering all produced small but significant negative effects. Although barred person entering correlated at .62 with assailant barred (deflated by uneven split on barred person entering) it demonstrated a separate contribution at the point of entry into the equation.

The development of the incident accounted for a further 3% of the variance. Obtaining a weapon from the premises showed a small but significant positive effect while intervention by staff showed a significant negative effect.

Table 5.4 Regression analysis for injury to customers (N = 1289)

Predictor variable entered	Cum R^2	Adj R^2	ΔR^2	ΔF	β	t
Demographics	.033	.030	.033	11.06***		
Day					.021	0.76 ns
Assailant barred					-.134	-4.87***
Number of assailants					.071	2.56*
Crowding					.077	2.75**
Initiation	.155	.148	.122	30.68***		
Misbehaviour					-.100	-3.61***
Misbehaviour re closing					-.074	-2.72**
Argument between customers					.268	9.11***
Argument involving staff					-.042	-1.58 ns
Barred person entering					-.092	-2.69**
Repercussion					-.038	-1.46 ns
Development	.182	.174	.026	20.64***		
Intervention					-.138	-5.29***
Weapon from premises					.093	3.62***
Culmination	.443	.435	.261	99.28***		
Threat					-.075	-3.37***
Fight					.091	3.65***
Attack on staff					-.155	-5.99***
Attack on customer					.484	19.41***
Attack on property					-.101	-4.31***
Attack during ejection					.018	0.82 ns

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

The culminating events accounted for 26% of the variance. An attack on customers and a fight showed significant positive effects. Attack on staff, attack on property and threat showed significant negative effects.

Comment. The demographics and pre-existing conditions that predicted injury to customers were completely different from those predicting injury to staff. Higher numbers of people present (crowding) and/or involved in the incident as assailants made injury to customers more likely. The fact that an assailant being barred had a negative effect can be explained in that the barring is more likely to be an issue for the staff than for other customers.

The effects of the initiation variables were as expected, in that argument between customers was obviously more likely to result in injury to customers than were the various customer misbehaviours.

The development variables demonstrated the adverse effect of the utilisation of objects found on the premises, such as glasses and ashtrays, as weapons. The intervention of staff was seen to have a beneficial effect on customer injury, in contrast to its detrimental effect on staff injury. In other words, staff appeared to be protecting their customers but putting themselves at risk.

The culminating events showed expected results in that direct attack on customers had the largest single predictive effect on injury to customers. Fights also had a small positive effect, whereas threats and attacks directed elsewhere, that is towards staff or property, lessened the likelihood of customers being injured.

Injury requiring medical attention

The predictor variables entered in the regression equation for injury requiring medical attention were: (Block 1) day, time, closing, assailant barred, number of assailants; (Block 2) argument between customers, barred person entering; (Block 3) weapon from premises; (Block 4) threat, fight, attack on staff, attack on customer, attack on property. As with injury to staff, time and closing were obviously preventing each others' contributions from reaching significance. Of the two, closing provided the greater contribution when the analysis was rerun, so time was dropped. Further consideration was given to the effect of the variable assailant barred on barred person entering. The variable assailant barred was dropped because, although it did

not allow the variable barred person entering, by itself, to reach significance, it did enable the block of initiation variables to reach significance. Similar consideration was given to the effect of the variable argument between customers on the variables fight and attack on customers. However, the overall results were better with argument between customers retained. The results of the final regression analysis are presented in Table 5.5.

These predictors entered in the regression equation explained a total of 16% of the variance in injury requiring medical attention. The demographics and pre-existing conditions accounted for just 1% of the variance. The presence of more than one assailant, the day being at the weekend and occurrence around closing time all showed small but significant positive effects on injury requiring medical attention.

Initiation accounted for less than 1% of the variance. No initiating event produced a significant effect and only argument between customers approached significance.

The development of the incident accounted for a further 1% of the variance. Obtaining a weapon from the premises showed a significant positive effect.

The culminating events accounted for 13% of the variance. Attack on staff and attack on customers showed significant positive effects and fight a small but significant positive effect. Attack on property and threat showed significant negative effects.

Comment. More serious injury to any person was predicted much less effectively than were injury of any severity to staff or to customers when considered separately. This is to be expected in that a number of the predictor variables related to the involvement of either staff or customers. It is likely that the actual physical act, such as kicking, pushing or headbutting, would be more useful in predicting the severity of the injury.

Among the demographics and pre-existing conditions, the likelihood of more serious injury was increased at the weekend and around closing time. The data do not provide explanation for these findings in terms of people being drunk or the premises being crowded at around closing time on weekend evenings. However, the fact that the number of assailants also shows a positive effect points to the importance of socialising in groups (Engels,

Knibbe & Drop, 1999), which tends to occur particularly on weekend evenings, and the effects of groups in reducing self-restraint (see Lawrence & Leather, 1999).

Table 5.5 Regression analysis for injury requiring medical attention (N = 1822)

Predictor variable entered	Cum R^2	Adj R^2	ΔR^2	ΔF	β	t
Demographics	.014	.012	.014	8.60***		
Day					.071	3.05**
Closing					.059	2.54*
Number of assailants					.061	2.62**
Initiation	.017	.015	.003	3.02*		
Argument between customers					.043	1.81†
Barred person entering					-.032	-1.35 ns
Development	.028	.025	.011	19.90***		
Weapon from premises					.104	4.46***
Culmination	.158	.153	.130	56.07***		
Threat					-.093	-4.15***
Fight					.054	2.13*
Attack on staff					.222	8.82***
Attack on customer					.223	8.89***
Attack on property					-.163	-6.88***

† $p \leq .06$ * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

How the incident started had little effect on the prediction of serious injury. During the incident, intervention by staff had no effect at all, perhaps because a decrease in the likelihood of injury to customers was balanced by an increase in likelihood of injury to staff, as shown in the two preceding sections. However, the acquisition of an object from the premises for use as a weapon showed the largest positive effect, apart from direct attacks on

people. As would be expected, direct attacks on both staff and customers showed the highest likelihood of producing serious injury.

In New Zealand, Langley, Chalmers & Fanslow (1996) studied the victims of assault presenting at hospital emergency departments. Injuries sustained in licensed premises did not tend to be less serious than those elsewhere even though they were more likely to involve unarmed combat or brawls.

Damage to property

The predictor variables entered in the regression equation for damage to property were: (Block 1) day, assailant's age, drugs, weapon brought in, number of assailants; (Block 2) argument between customers, pre-planned attack; (Block 3) weapon from premises; (Block 4) attack on staff, attack on customer, attack on property, attack during ejection, further action. The results of the regression analysis are presented in Table 5.6

These predictors entered in the regression equation explained a total of 30% of the variance in damage to property. The demographics and pre-existing conditions accounted for 1% of the variance. The presence of more than one assailant showed a small but significant positive effect on damage to property.

Initiation accounted for less than 1% of the variance. Argument between customers produced a small but significant positive effect.

The development of the incident accounted for 11% of the variance. Obtaining a weapon from the premises showed a significant positive effect.

The culminating events accounted for 17% of the variance. Attack on property showed a significant positive effect. Attack during ejection showed a small but significant negative effect.

The demographics and events occurring at the beginning of incidents had little predictive effect on damage to property, only the number of assailants increasing the likelihood of damage. It was not surprising that the use of objects from the premises as weapons had an appreciable effect as these weapons could not only be effective in causing damage to their targets but also prone to being damaged themselves in the process. It was inevitable that the predictor showing the largest effect was attack on property.

Table 5.6 Regression analysis for damage to property (N = 1545)

Predictor variable entered	Cum R^2	Adj R^2	ΔR^2	ΔF	β	t
Demographics	**.012**	**.009**	**.012**	**3.67****		
Day					-.038	-1.49 ns
Assailant's age					-.022	-0.86 ns
Drugs					.040	1.57 ns
Weapon brought in					.028	1.11 ns
Number of assailants					.084	3.28***
Initiation	**.017**	**.012**	**.005**	**3.83***		
Argument between customers					-.059	-2.26*
Pre-planned attack					.035	1.34 ns
Development	**.122**	**.117**	**.105**	**183.90*****		
Weapon from premises					.331	13.56***
Culmination	**.290**	**.284**	**.168**	**72.42*****		
Attack on staff					.031	1.24 ns
Attack on customer					-.040	-1.62 ns
Attack on property					.419	17.31***
Attack during ejection					-.057	-2.52*
Further action					.018	0.82 ns

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

5.2 DETERMINATION OF THE SERIOUSNESS OF INCIDENTS

Very little published research on work-related violence has asked the workers involved in violent incidents about their appraisals of the seriousness of those incidents. It would seem to be important to understand more about what features of incidents determine how serious an incident appeared to those involved, in order to anticipate some of the psychological upset of workers.

Some researchers have used a seriousness score, but that score has been determined by the researchers, for example by Allen & Lucero (1998) examining reports of arbitration decisions. They do not reveal anything about what caused victims or those having to manage an incident to rate it as serious or not. Lawrence (1997) has studied licensees' ratings of aspects of violent incidents in public houses. However, because this study used artificial scenarios in experimental conditions, it cannot be assumed that such judgements would contribute to how the licensees would rate the seriousness of a real incident when they were personally involved.

Assumptions have been made about the severity of incidents. Barling (1996: 38), for example, stated "It is assumed that the severity of workplace violence is related to the severity of the psychological and physiological outcomes. In the most literal sense, the more violent the crime, the more severe the direct physical threat to person, property or both." However, he agrees that workers' perceptions of events are more predictive of psychological harm.

> "A more productive approach would emphasize individuals' perceptions of workplace events, which would be consistent with a traditional work stress framework ... in which objective quantifiable workplace events are stressors; individuals' interpretations and perceptions of the events reflect psychological stress; and it is the stress that ultimately generates psychological or physical strain." (Barling, 1996: 36)

The KPP IRS was seen as a medium that could gather information regarding how licensees perceived large numbers of incidents that they had experienced. The measure had to be simple, easily explained over the telephone and not reliant on a visual scale. The scale of 0-10, outlined in Section 4.5, was chosen as being a method of scoring familiar to most people. This is a rather crude scale in psychological research terms, but it is not sensible or considerate to include complex measures in an operational reporting system. It is unreasonable to expect people who have just experienced a violent incident to answer such questions. Indeed, security personnel responsible for overseeing the completion of the KPP IRF were instructed not to ask people to give a seriousness score if they suspected that it might upset them further, but simply to make a note of relevant comments. Concern for people's immediate well-being had to override research considerations.

5.2.2 Method

A similar methodology was used for the multiple regression analysis for the outcome variable seriousness as was used for the physical outcome variables, explained in Section 5.1. In addition, the physical outcome variables were entered into the regression equation as a fifth block of predictor variables. The variable seriousness was treated as normally distributed because the skewness and kurtosis fell within acceptable limits (N = 1583, kurtosis = -.707, skewness = -.144).

5.2.3 Results

Pearson correlation coefficients for agreement between the seriousness rating and the predictor variables were given in Table 5.2. The predictor variables entered in the regression equation for seriousness were: (Block 1) pool venue, assailant's gender, drugs, weapon brought in, number of assailants; (Block 2) pre-planned attack, repercussion; (Block 3) weapon from premises; (Block 4) threat, attack on staff; (Block 5) injury to staff, injury to customers, injury (medical), damage to property. Various combinations of variables for injury to staff, injury to customer, any injury to any person and injury to any person requiring medical attention were tried in the regression equation but the existing combination was found to be optimal. The results of the regression analysis are presented in Table 5.7.

These predictors entered in the regression equation explained a total of 22% of the variance in seriousness score. The demographics and pre-existing conditions accounted for 10% of the variance. A weapon brought in, the involvement of drug-related activity and the presence of more than one assailant all showed significant positive effects on the seriousness score, and a pool venue showed a small but significant positive effect.

Initiation accounted for 2% of the variance. A pre-planned attack produced a significant positive effect and repercussions showed a small but significant positive effect.

The development of the incident accounted for 2% of the variance. Obtaining a weapon from the premises showed a significant positive effect.

The culminating events accounted for just 1% of the variance. Threat and attack on staff both showed small but significant positive effects.

The physical outcome of incidents accounted for 8% of the variance in the seriousness score. The largest effect was injury to any person requiring medical attention. Injury to staff also produced a small but significant positive effect.

Table 5.7 Regression analysis for seriousness score (N = 1487)

Predictor variable entered	Cum R^2	Adj R^2	ΔR^2	ΔF	β	t
Demographics	.096	.093	.096	31 40***		
Pool venue					.063	2.52*
Assailant's gender					.026	1.06 ns
Drugs					.108	4.35***
Weapon brought in					.232	9.27***
Number of assailants					.122	4.93***
Initiation	.114	.110	.018	15.03***		
Pre-planned attack					.112	4.41***
Repercussion					.069	2.80**
Development	.129	.125	.016	26.43***		
Weapon from premises					.128	5.14***
Culmination	.143	.137	.013	11.53***		
Threat					.064	2.56**
Attack on staff					.107	4.34***
Physical outcome	.218	.211	.075	35.49***		
Injury to staff					.073	2.15*
Injury to customers					.047	1.60 ns
Injury (medical)					.248	8.99***
Damage to property					.021	0.84 ns

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Comment: The variables displaying the largest effects on the seriousness score were a weapon being brought into the premises and injury requiring medical attention. Effects were also shown by an object being obtained from the premises for use as a weapon, the involvement of drugs, the number of assailants, an attack on staff and whether the attack was pre-planned. However, the regression equation for seriousness score predicted only 22% of the variance, the physical outcome only 8%. This is evidence that there are other features affecting the assessment of the incident apart from the obvious factors, such as the physical outcome.

Some of these were illustrated by the comments that licensees made regarding the seriousness of the incident. It has to be remembered that these comments are not considered responses to a question in a survey, but are additional comments made by some of the people who have recently experienced a violent incident, during operational reporting of that incident. The comments displayed recurring themes which are shown in Table 5.8.

Table 5.8 Recurring themes in the comments made by licensees regarding the seriousness of reported incidents

What the pub environment was like	• the type of pub • the nature of the local area • the previous history of violence at the premises
Why or how the incident started	• the apparent reason for the incident, how and why it started • the perceived intent of the assailants, e.g. just high spirits or intentionally vicious • any connection to previous incidents at the premises
What actually happened during the incident	• the content and manner of threats made • the involvement of weapons and where they were obtained • how long the incident lasted • how quickly the police arrived • the type of people who were affected, e.g. children, old people, women

(continued)

Table 5.8 (continued)

What the assailants were like	• the number of assailants involved • the physical stature of the assailants • the known previous history of violence of the assailants, e.g. did they have a record for violence or was it out of character • the involvement of drugs
What the potential outcome might have been	• the fear experienced during the incident, i.e. what people thought was going happen, e.g. if they thought someone would die • how much they felt in control during the incident • the danger posed to others • the potential outcome if circumstances had been different, e.g. if the pub had been crowded or if the police had not happened to be present • the potential outcome if staff had not intervened successfully
What the actual outcome was	• the physical outcome in terms of injury or damage • the nature of the clearing up, e.g. washing away blood, repairs
What happened, or might happen, afterwards	• any follow up action, e.g. assailants returning or threats being made after the incident • the potential for future repercussions, particularly involving local families or gangs regarded as dangerous
How the staff and their families were affected	• the previous experience of violent incidents of the staff involved (which might either mitigate or exacerbate the effect on the person) • the effect on licensee's family • how the licensee felt the incident was handled by the staff • how the staff felt and reacted afterwards
How customers were affected	• the reaction of customers • the effect on trade • the reputation of the pub

Most respondents cited a combination of a number of these factors. The fact that so many different features were taken into account has implications in particular for managers when dealing with staff who have been involved in aggressive incidents, in that their psychological state might not reflect only the physical consequences of the incident. People may be more distressed than the visible results of the incident would suggest.

5.3 DISCUSSION

In the regression analyses reported in this chapter, many of the individual features of incidents displayed effects that, although significant, were small. However, in combination, the features were able to predict respectable percentages of the variance for the outcome measures. Moreover, for this type of field study concerning such a wide variety of incidents, only small effects could be expected for most of the features. This is illustrated by Macintyre & Homel (1997), who in their study of violence in licensed premises, made "a fundamental assumption ... that no single factor - not even levels of intoxication - is of preeminent importance as a predictor of aggression. Violent occasions are characterised by subtle *interactions* of several variables." Taking this view into consideration, the fact that features occurring right from the start of the incident had some bearing on the outcome supports the design of risk reduction measures that seek to target the process at all stages, as argued in Section 1.2.

The assumptions regarding situational and person features expected to affect the physical outcome of incidents, were supported for some of the features but not for others. Crowding produced a small increase in the likelihood of injury to customers, which may be explained through a number of effects, such as audience and group effects, perhaps reducing self-monitoring of behaviour and encouraging participants not to lose face (Mummendey & Otten, 1993; Lawrence & Leather, 1999). In addition, when premises are crowded there is an increased likelihood of incidental injury to customers who are not directly involved, simply through their proximity to the action. Similarly, there may be an increased likelihood of transfer of any dispute to third parties (Felson & Steadman, 1983), so that other customers become involved. The role of other customers, once trouble had begun, was often seen to be crucially important. In particular, the friends or associates of the main instigator were often instrumental in either defusing or escalating the

incident. This last point ties in with the number of assailants having a small positive effect on the likelihood of injury to customers. It had a similar effect on injury requiring medical attention and damage to property, and also showed a positive effect on the seriousness score. These are all understandable, particularly the last, as it is likely that licensees feel their ability to control an incident is reduced when more people are involved.

In terms of time, late evening showed a small positive effect on injury to staff, while the weekend and closing showed a positive effect on injury to any person requiring medical attention. These findings might be explained by the socialising in groups which tends to occur particularly on weekend evenings and the effects of groups in reducing self-restraint (Engels, Knibbe & Drop, 1999; Lawrence & Leather, 1999). The effects of drinking quantities of alcohol before the pub closes, which may also reduce self-restraint, and then having to vacate the premises, provide further explanation. Closing procedures were found to be very important in the incidence of violence in the survey by Hillas et al. (1988), where nearly 49% of licensees saw closing time as the flashpoint of the trouble.

The only variable included in the regression that related to the social and physical environment, apart from crowding, was the premises being a pool venue. This was included because of consistent findings that the presence of pool tables was related to the incidence of violence (Dickson, Leather, Beale & Cox, 1994b; Graham et al., 1980; Hillas et al., 1988). This variable was unable to take into account the presence of pool tables in other types of premises. However, a pool venue showed no effect on the physical outcome of incidents but a small effect on the seriousness score given by the licensees. This might be explained by a higher awareness of the problem of violence by the pool venue licensees, who underwent specific training that emphasised the importance of the management of pool tables in reducing violence (Leather, Beale, Lawrence & Maxwell, 1996).

The gender of the assailant had the opposite effect to that anticipated in that women assailants were more likely to produce injury to staff. This is probably a feature of reporting practice rather than actuality, as discussed in Section 5.1.2. It can be argued that many staff may feel that women do not pose such a real threat as men, even when they become aggressive, and so do not think an incident worth reporting. It is only when women actually cause injury that the incident is reported. This accords with research by Dyck

(1980) where the involvement of women in violence was generally viewed with amusement rather than as a serious risk. This explanation is also supported by the contribution of an incident's perceived potential for harm to the licensee's assessment of seriousness, as discussed in Section 5.2.

In terms of other features relating to assailants, the only effect of the previous barring of an assailant was a negative effect on injury to customers. This is understandable in that the barring is more likely to be an issue for staff to address and would not necessarily involve any other customers.

The involvement of drugs had just a small positive effect on injury to staff, but no effect on the other physical outcomes. However, it had an effect on the seriousness score assigned by licensees. This may be for a number of reasons. The illegality of any association with drugs, either their use on the premises or involvement with dealing, would be expected to increase licensees' appraisal of the seriousness of the incident because of the threat to their licence. In addition, the "unreasonable, unpredictable behaviour" sited by licensees made customers under the influence of certain drugs at the time to be difficult to reason with or to control, e.g.

> "Male acted aggressively and during the struggle he had enormous strength, although he was not powerfully built."

Further, licensees are wary of the potential for violence associated with the traffic in illegal drugs, and some have been directly affected when trying to eliminate drug-related activity from their premises, e.g.:

> "The gang are targeted by police for violence in relation to setting a protection racket with the sale of drugs being the end objective."
>
> "(Relief licensee) has been involved with 'cleaning up' the pub of drug dealers. He and staff have been threatened. Our manager has received malicious telephone calls during the early hours of the morning."

These results reinforce the necessity for licensees to have training and up-to-date information about the use and effects of different drugs so that they can be vigilant within and around their premises (Leather, Beale, Lawrence & Maxwell, 1996). Further, they need to foster a good relationship with the police to co-operate in combating the detrimental effect of drug use or dealing on or around their premises.

The involvement of weapons had two differing effects, supporting the inclusion of two different variables in the regression. Weapons brought into the premises actually showed a negative effect on injury to staff, but a positive effect on the seriousness score given by licensees. This might be explained in two ways, as discussed in Section 5.1.2. First, the licensees are aware of the potential for severe harm when recognised weapons, such as knives or guns, are present, and therefore feel that incidents should be reported irrespective of physical outcome. Second, it may be that people are much more cautious when they become aware that a potential aggressor is armed, so keeping their distance and using calming and negotiating techniques to avert injury. Such care and politeness in the face of a recognised potential for serious violence was noted by Cohen, Vandello, Puente and Rantilla (1999) in relation to the southern culture in the U.S.

Objects obtained on the premises for use as weapons had no effect on injury to staff but a detrimental effect on injury to customers, on injury requiring medical attention, on damage to property and on the seriousness score. This finding is generally in line with expectations and suggests that licensees should be advised to minimise the number of objects, such as glasses, that are available in the public house. Some very unexpected objects were used as weapons in reported incidents, examples being a galvanised mop bucket, a miner's lamp, Christmas decorations and a toilet seat. Staff may have to examine the premises carefully to reveal potential weapons, either removing them or fixing them securely to prevent such use.

As anticipated, some relationships were revealed in the data between the outcomes of incidents and events that happened at the early stages of incidents. Initiation as an argument between customers, for example, demonstrated the expected effects of increasing the likelihood of injury to customers, but decreasing the likelihood of injury to staff. Other initiating events (argument involving staff, misbehaviour, misbehaviour re closing) showed some small effects in the opposite direction. No one initiating event showed any significant effect on injury requiring medical attention. Pre-planned attacks and incidents involving an element of repercussion from previous problems both increased the seriousness score given by licensees, perhaps reflecting licensees' concern for aggression that is directed specifically at themselves or their premises rather than occurring spontaneously.

As incidents developed, intervention by staff decreased the likelihood of injury to customers but increased the likelihood of injury to staff. Staff appeared, therefore, to be protecting their customers but putting themselves at risk by intervening. This indicates that such intervention is a vital area to be examined in terms of the practice actually followed by licensees, so that procedures can be improved and licensees trained in safer intervention techniques. Such evidence from the incident reporting system supported the inclusion of timing and manner of intervention within licensee training (Leather, Beale, Lawrence & Maxwell, 1996).

The culmination of incidents displayed the greatest effects on physical outcome, as would be expected, but the earlier events were shown to have sufficient bearing on the outcomes to warrant further examination for strategies to reduce the risks from violence. Further analysis of pathways through incidents is described in the next chapter. Threats and attacks on staff were the two culminating events that showed a positive effect on the seriousness scores.

Expectations regarding the prediction of seriousness scores were fulfilled. The physical outcomes, particularly to injury requiring medical attention, were shown to be related to licensees' appraisals of how serious incidents had been, but they only accounted for 8% of the variance in the seriousness scores. Licensees' appraisals were also affected by other factors, particularly by a weapon being brought into the premises and, to a lesser extent, an object being obtained from the premises to be used as a weapon. Other features (the involvement of drugs, the number of assailants, a pre-planned attack, an attack on staff) also acted to increase the seriousness scores.

However, the entire regression equation only accounted for 22% of the variance in the seriousness scores. This suggested strongly that other aspects of incidents, particularly the perceived potential for harm, were also important in how they were appraised by the people involved in them. Some indications of these considerations were obtained from the comments made by reporting licensees, as given in Table 5.8. They included the type of pub environment and its previous record of violence, the perceived intent of the assailants, why or how the incident started, the content and manner of any threats made, the fear experienced during the incident, what the potential outcome might have been, what happened, or might happen, afterwards, how staff and their families were affected, staff previous experience of violence,

and how customers were affected. Systematic research is required to explore more fully the relationship between features of incidents and perceived seriousness. What is evident, however, and important from an organisational point of view, is that personnel dealing with licensees, their staff and families following an incident must not assume that, because there was little injury or damage, the incident was not serious and the pub staff do not need support. Managers providing support need to ensure that they ask the people directly involved both what was most significant to them and the type of support they would find most beneficial.

This chapter has demonstrated the importance of examining the development of incidents when investigating their nature. The small size of some of the effects, however, suggests that a more detailed breakdown of the sequences followed in incidents might provide greater insight into the processes involved. The following chapter takes this approach further by analysing the progression of individual incidents over time in order to identify common pathways through the reported incidents, and the outcomes of these pathways.

CHAPTER 6: ANALYSING THE INCIDENT AS A DYNAMIC PROCESS

6.1 PATHWAYS THROUGH INCIDENTS

This chapter describes the extension of the treatment of a violent incident as a dynamic process by tracing the steps that individual incidents followed through the stages identified in the previous two chapters. Combining the sequence of steps, or pathways, for a number of individual incidents produces a visual form that displays the temporal architecture of incidents and allows the extraction of quantitative information. The innovative method of logical pathway modelling which is described here was devised by the author, and the work described here has been published in the *Journal of Occupational Health Psychology* (Beale, Cox, Clarke, Lawrence & Leather, 1998).

Pernanen (1991: 199) called for a more general sequential view of "the process whereby violence develops from conflict incitement or frustration through arousal and overt aggression to the use of physical force, and finally ends in some form of resolution of the violence episode." Incident reporting by itself cannot support analysis of detail at the level of individual actions, thoughts and feelings. Such detailed analysis requires close observational techniques as used by Clarke, Parry-Jones, Gay & Smith (1981) to study disruptive incidents in school classrooms. However, it was considered that it could provide useful information on a macro level following the main phases of incidents and revealing common patterns.

Sequence analysis is a method for finding patterns in data that has been used in a wide variety of studies, as explained by Abbott (1995). However, in its pure inductive form, as described by Bakeman and Gottman (1986), it requires huge amounts of data to reveal extended sequences in complex situations. The logical pathway technique utilises certain key pathways, defined by a "logical pathway model", to focus the analysis and produce "empirical pathway maps" that display the prominent pathways and their probabilities in a visual form. This adaptation of sequence analysis methodology was able to identify patterns within the reported violent incidents, producing a stable model from which to obtain reliable quantitative information about how incidents progressed.

6.2 METHOD

6.2.1 Reported incidents

Characteristics of reported incidents

Three characteristics of the violent incident reports from the KPP IRS shaped the analysis and the resulting model.

- The great majority of reported incidents involved problems of customer behaviour during opening hours, rather than pre-planned criminal activity, as demonstrated in Section 4.3.1.
- Physically violent acts were generally well described in incident reports, whereas verbal or postural violence, such as abuse, intimidation and threat, was generally not well reported, particularly when physical violence had also occurred, as discussed in Section 4.3.3.
- Although violent incidents may cause psychological, commercial and financial harm to the people involved, these are not immediately identifiable and were rarely mentioned in incident reports. Physical harm is usually obvious immediately and was generally well described in incident reports.

These characteristics indicated that the attention should be focused on incidents that involved customer behaviour and physically violent acts, and that only physical harm could usefully be considered in the analysis.

Incidents were included in the analysis if (i) they involved customers using the pub during trading times, or while the pub was being cleared after trading; (ii) they involved some physically violent act, whether or not injury or damage occurred; and (iii) they were recorded in sufficient detail for useful analysis.

Incidents were not included (i) if they were essentially planned criminal activity, such as armed robbery; (ii) if they occurred off the premises; (iii) if they originated when the pub was closed; (iv) if they did not involve a physically violent act, for example threat only; (v) if they involved conflict between members of staff only; or (vi) if they were not recorded in sufficient detail.

A random sample of 587 reported incidents was examined in detail. 543 incidents (92.5%) had the appropriate characteristics for inclusion and 505 of these (86.0% of the total) were reported in sufficient detail to be used in the analysis, as shown in Table 6.1. These 505 incidents were used to provide the data for constructing the logical pathway model and the empirical pathway maps.

Table 6.1 Exclusion of incidents from the analysis

Reasons for exclusion	Number of incident reports (N = 587)	
Wrong type of incident:	44 (7.5%)	
No physically violent act involved		*17*
Out of pub hours		*12*
Planned criminal activity (8 also off premises)		*9*
Only staff involved in incident		*2*
Random attack on outside		*2*
Off premises		*1*
Equipment failure		*1*
Insufficient detail	38 (6.5%)	
Total number excluded	**82 (14.0%)**	

6.2.2 Logical pathway modelling

The general case of the logical pathway model, shown in Figure 6.1, represents schematically the dynamic processes within incidents in terms of common conflict or problem situations, the violent behaviours to which they gave rise and the ensuing types of harm. The incident reports were examined to extract these situations, behaviours and types of harm, as revealed in Chapter 4. Each incident was then coded for the presence or absence of each step represented by an arrow and the frequencies of occurrence for the steps over many incidents was used to calculate the probabilities of each step occurring. Entering the frequency and probability information into the logical pathway model created a "map" which represents the pathways through the actual incidents in the data set. This map was termed an empirical pathway map. Removing steps of low probability produced more useful empirical pathway maps that allowed common steps and pathways through violent incidents to be identified readily, as represented in Figure 6.2.

Figure 6.1 The logical pathway model for the general case.

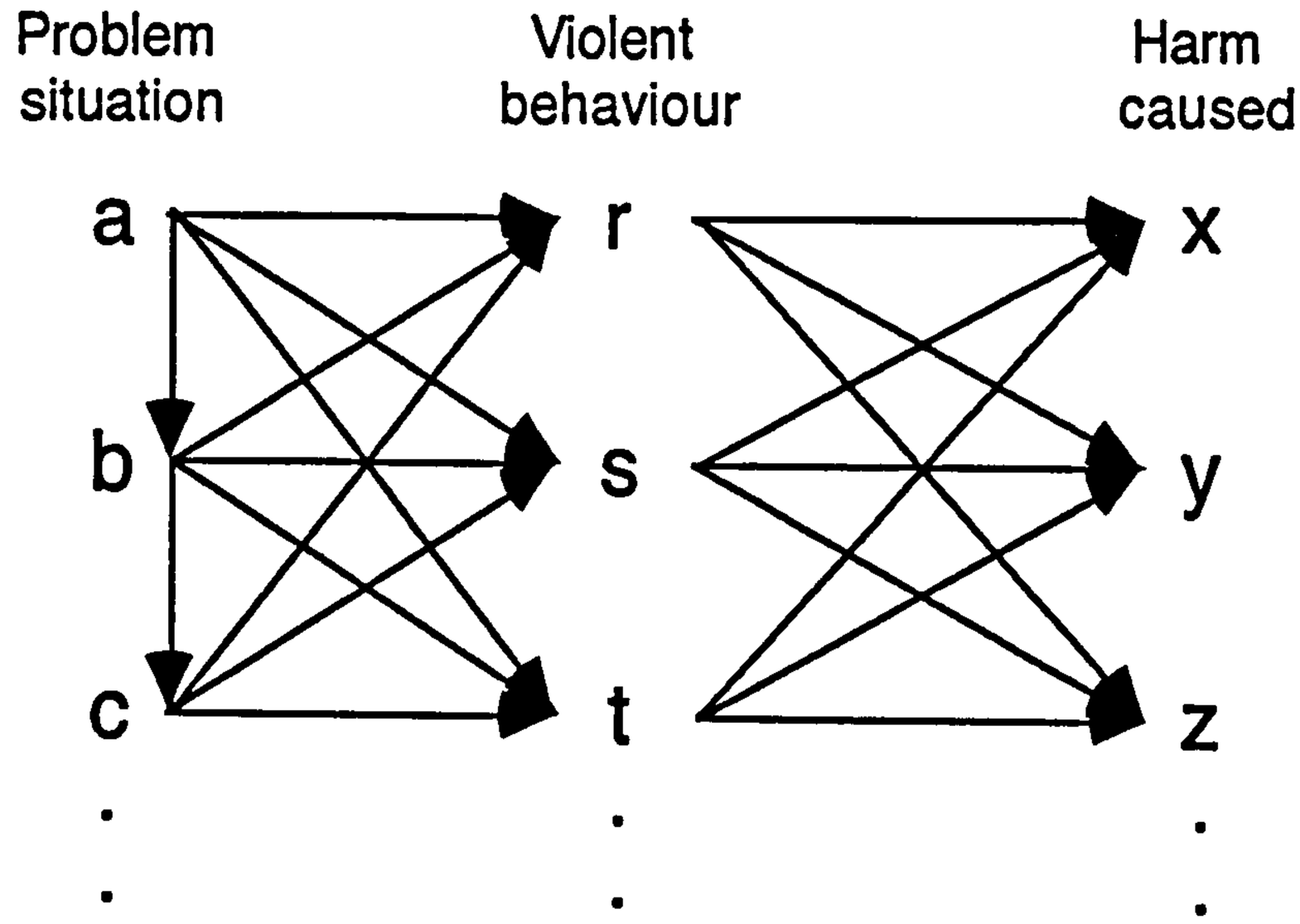
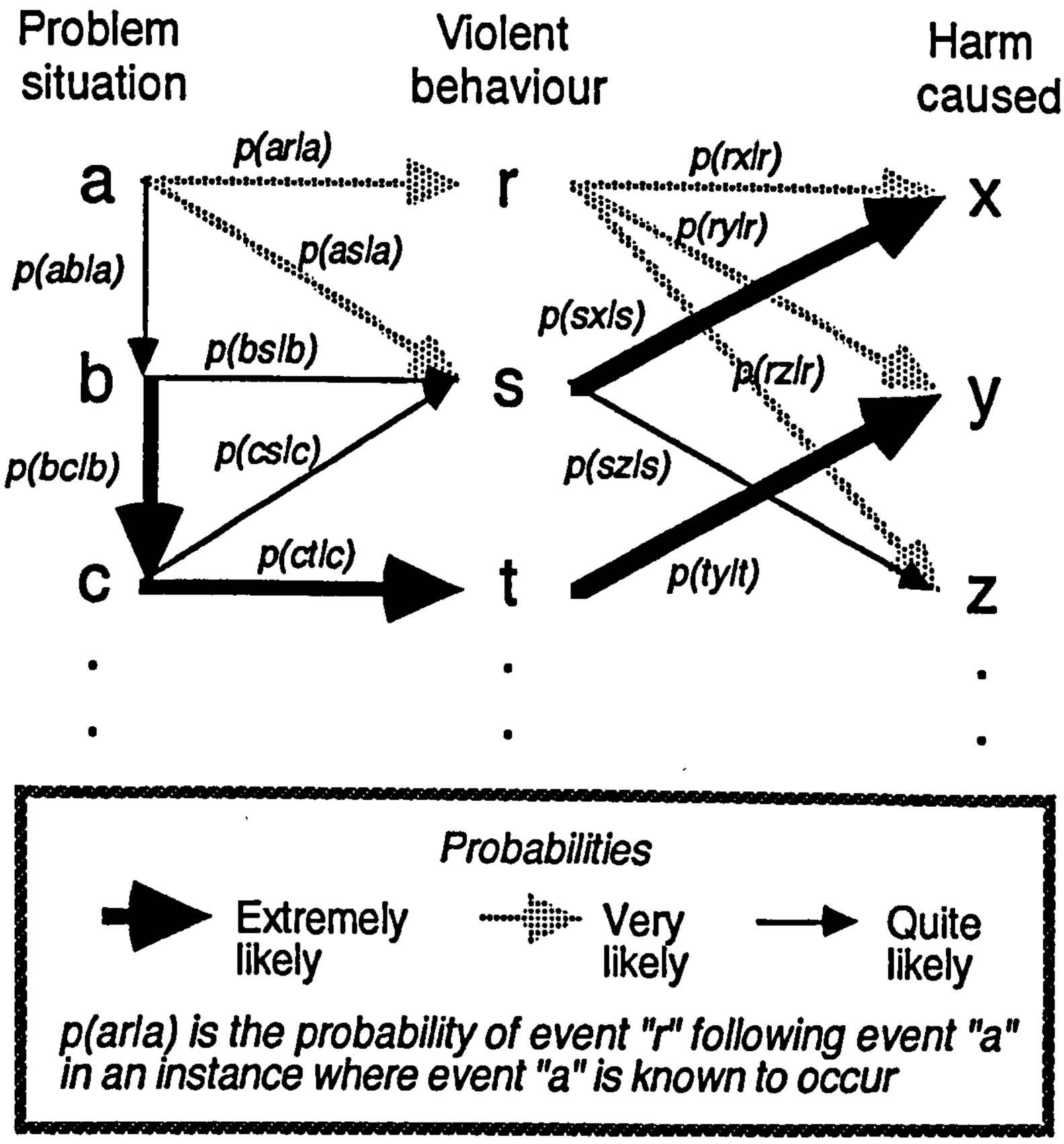


Figure 6.2 An empirical pathway map for the general case.



Examination of the incident report database showed three main stages at which physically violent behaviour might occur. These were (a) directly from the initiating problem, (b) after intervention by staff, and (c) after the assailants had exited the premises. Staff might be involved in the initiating

problem or might become involved by intervening in a customer-only problem. Intervention in a customer-only problem could occur either before or after a violent act had taken place. For example, if two customers were arguing heatedly, a licensee might go over and speak to them while the exchange remained verbal, or might not intervene until the customers had come to blows. Similarly, a violent act after the assailants had exited the premises might follow either a physically violent act on the premises or a problem situation in which no physically violent act had occurred. For example, a customer objecting when asked to leave at closing time might head-butt a barman, then go outside and throw a brick through a window. Alternatively, the customer might simply throw verbal abuse at the barman before exiting and throwing the brick.

Detailed inspection of the data enabled the general model of Figure 6.1 to be elaborated into the outline logical pathway model shown in Figure 6.3. Each arrow represents a possible "step" between two "events", where events include problem situations, physically violent acts and physical outcomes. It is likely that this outline model could equally well be applied to other work situations where there are customers, patients, clients, etc. on the premises.

The next stage was to identify, from the data, the more specific events (problem situations, violent behaviour, harm caused) in the incidents and add these into the outline model to give the fully detailed model. The specific events used are given in Table 6.2.

The specific events were inserted into the outline logical pathway model of Figure 6.3 and each arrow, or step, was replaced by between 3 and 16 arrows, as each possible event within one box connects to each possible following event in the next box. (The one exception is that, by definition, "Immediate, intentional, no build up" has to be followed immediately by a violent act so cannot lead directly to "Intervention by staff", unlike the other initiating problems.) In total there were 86 possible steps in the detailed model shown in Figure 6.4. Individual incidents were then coded as taking the appropriate steps in this model.

Figure 6.3 **The outline logical pathway model for the reported violent incidents**

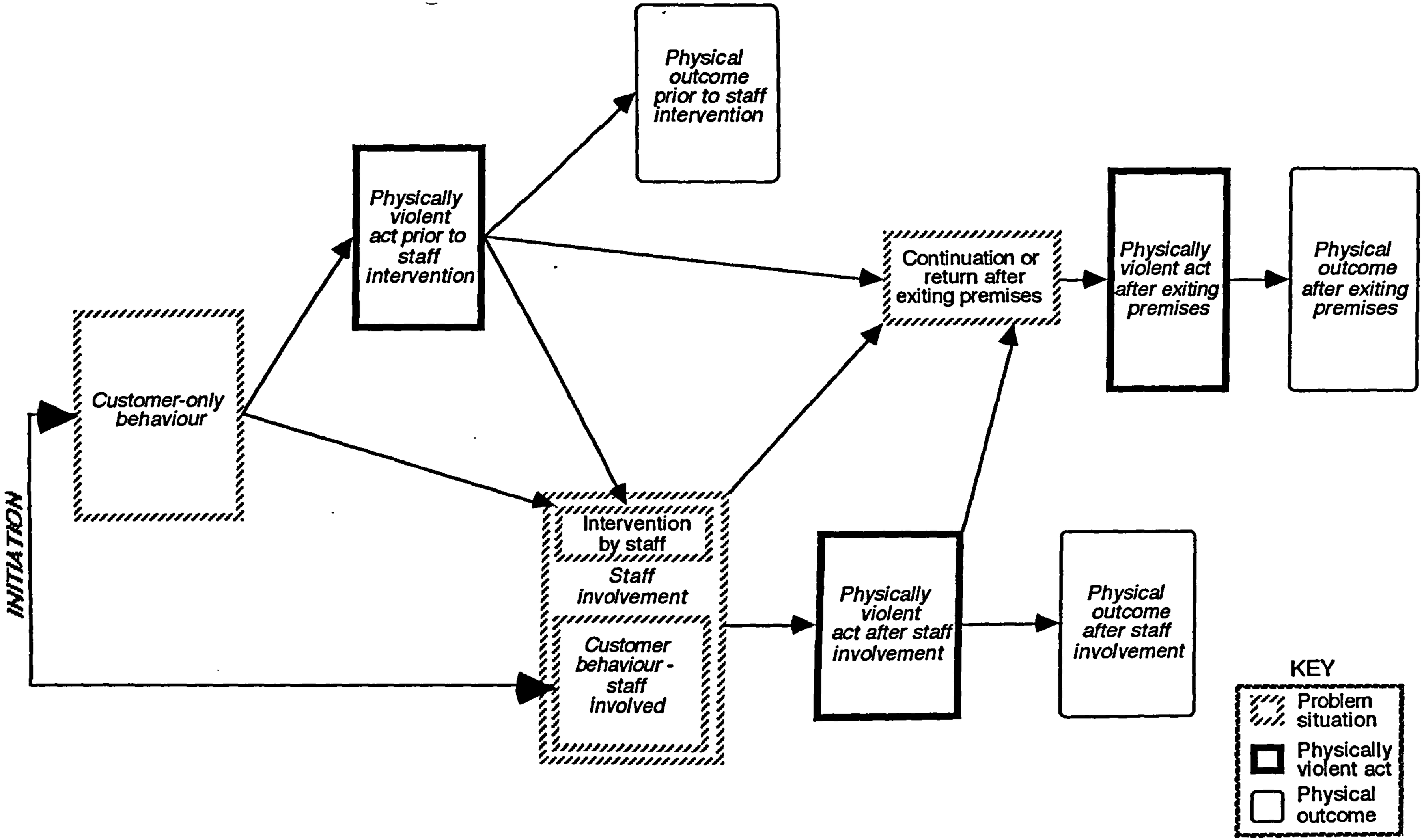
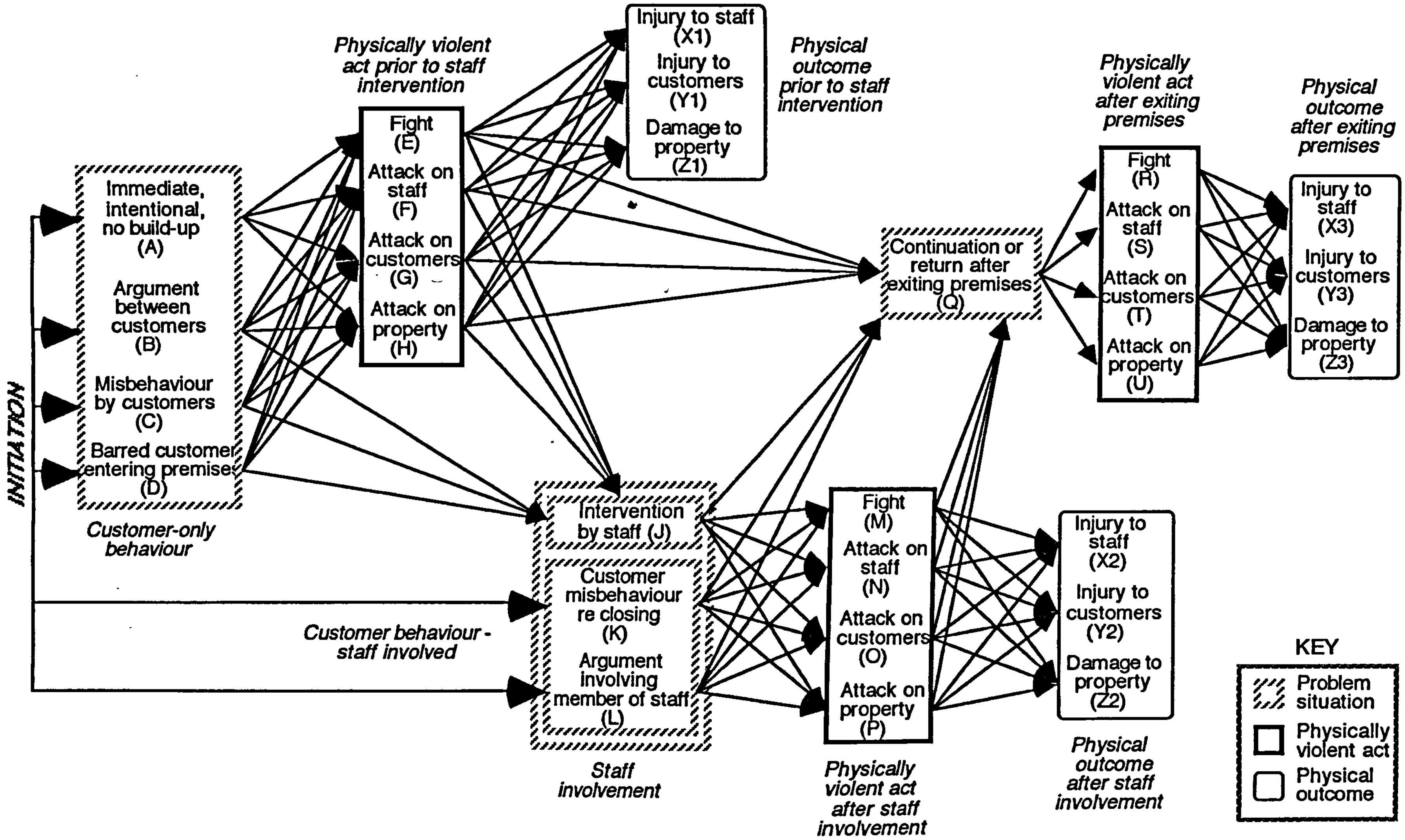


Table 6.2 Individual events in reported incidents

Individual event	Definition
	Problem situations
Initiating event	
Customer-only behaviour	
"Immediate, intentional, no build-up"	Attack immediate as assailants entered; or assailants stated intention to cause trouble.
"Argument between customers"	Disagreement between two or more customers (not annoying customers in general or at random).
"Misbehaviour by customers"	Being drunk/rowdy, annoying others, stealing, being indecent, using/selling drugs, entering private areas
"Barred customer entering premises"	Individuals previously banned from using the premises, coming into the pub.
Customer behaviour - staff involved	
"Customer misbehaviour re closing"	Specific disregard of closing procedures, e.g. demanding service after time, refusing to leave.
"Argument involving member of staff"	Disagreement between customers and staff, e.g. problems over service, refusal of entry or service.
Later event	
"Intervention by staff"	Staff trying to calm the situation, asking customers to stop or to leave, refusing service (not after time).
"Continuation after exiting premises"	Continued fighting, attack on outside, assailants or associates returning later to take further action.
	Physically violent acts
"Fight"	Fight/scuffle, aggressors/victims not distinguishable.
"Attack on staff"	Physical attack: target perceived to be staff.
"Attack on customers"	Physical attack: target perceived to be customer.
"Attack on property"	Physical attack: target perceived to be property.
	Physical outcomes
"Injury to staff"	Physical injury to member of staff.
"Injury to customers"	Physical injury to customer.
"Damage to property"	Damage to, or theft of, personal or pub property.

Figure 6.4 The detailed logical pathway model for the reported violent incidents



6.2.3 Coding

Coding utilised letters allocated to each event, as shown in Figure 6.4, so that each step was represented by a pair of letters. Each incident was coded for the presence or absence of each of the 86 steps in the detailed model, as well as for the severity of injuries. The following rules were applied to the coding of incidents.

- Only one initial problem (A, B, C, D, K, L) was permitted for each incident.
- A "customer-only problem" (A, B, C, D) could lead *either* to "intervention by staff" (J) or to one or more "physically violent acts prior to staff intervention" (E, F, G, H).
- Physically violent acts could lead to one or more physical outcomes; for example, what was primarily an "attack on staff" might have led to "injury to staff" and at the same time to "damage to property" if, for instance, glasses were broken as a by-product of the attack on staff. In this case both steps were coded as present. On the other hand, such an attack might have led to no injury or damage at all. In this case, all steps going from the attack to physical outcomes were coded as absent.

Reliability of coding

Individual incidents consisted of up to 14 steps (mean 3.7). Inter-rater reliability was estimated by calculating Cohen's kappa (Cohen, 1960) for 46 incidents (177 separate steps) that were coded independently by the author and another member of the SEP Group. The z scores and significance levels were determined following the procedure outlined by Bakeman and Gottman (1986) based on the sampling distribution of kappa described by Fleiss, Cohen and Everitt (1969). The procedure is outlined in Appendix 8.

Agreement on the initial problem was straightforward to calculate, as there were 6 mutually exclusive categories. The agreement matrix is given in Appendix 8. A value for Cohen's kappa of 0.74 ($p<.0001$, $z=9.84$) was obtained. Agreement for the rest of the model was estimated using the presence or absence of the remaining 23 events. The agreement matrix is given in Appendix 8. A value for Cohen's kappa of 0.78 ($p<.0001$, $z=46.7$) was obtained. Both kappas are statistically significant.

Bakeman and Gottman (1986) regard a score for Cohen's kappa of .70 or above as acceptable; Fleiss (1981) regards a kappa of .60 to .75 as good and

of over .75 as excellent. The values obtained here can, therefore, be regarded as establishing good inter-rater reliability for the coding.

6.2.4 Construction of empirical pathway maps

This coding allowed calculation of the number of incidents (a) taking each individual step in the model; (b) taking any series of steps, or pathway, through the model; (c) involving any one event, for example intervention by staff; (d) involving a particular violent act or outcome either at a particular stage, or at any stage of the incident; (e) involving any violent act or outcome at a particular stage of the incident; (f) involving some events but not others, for example a violent act after the assailant had exited, but no violent act prior to exiting.

After all incidents had been coded, the cumulative frequencies for each step and each event were determined, as shown in Tables 6.3 to 6.5.

Table 6.3 Numbers of incidents involving particular problem situations (N = 505)

Event (or set of events)	No. incidents (percentage of total)
Initiating events	
Customer-only problem	398 (78.8%)
"Immediate, intentional"	72 (14.3%)
"Argument between customers"	114 (22.6%)
"Misbehaviour by customers"	166 (32.9%)
"Barred customer entering premises"	46 (9.1%)
Customer behaviour - staff involved	107 (21.2%)
"Customer misbehaviour re closing"	58 (11.5%)
"Argument involving member of staff"	49 (9.7%)
Staff involvement	
Staff involvement	366 (72.5%)
Staff involvement in initiating problem	107 (21.2%)
Staff intervention	259 (51.3%)
"Intervention by staff" before any physically violent act	191 (37.8%)
"Intervention by staff" following a physically violent act	68 (13.5%)
Continuing action	
"Continuation after exiting premises"	140 (27.7%)

Table 6.4 Numbers of incidents in which particular physically violent acts and physical outcomes occurred at different stages (N = 505)

Event	No. incidents (percentage of total)			
	Prior to staff involvement	After staff involvement	After exiting	At any time
	Physically violent acts			
Any violent act	205 (40.6%)	287 (56.8%)	132 (26.1%)	505 (100.0%)
"Fight"	68 (13.5%)	48 (9.5%)	28 (5.5%)	129 (25.5%)
"Attack on staff"	32 (6.3%)	203 (40.2%)	50 (9.9%)	268 (53.1%)
"Attack on customers"	77 (15.2%)	11 (2.2%)	24 (4.8%)	107 (21.2%)
"Attack on property"	54 (10.7%)	67 (13.3%)	55 (10.9%)	162 (32.1%)
	Physical outcomes			
Any injury or damage	154 (30.5%)	259 (51.3%)	118 (23.4%)	431 (85.3%)
"Injury to staff"	37 (7.3%)	191 (37.8%)	53 (10.5%)	275 (54.5%)
"Injury to customers"	77 (15.2%)	26 (5.1%)	31 (6.1%)	132 (26.1%)
"Damage to property"	103 (20.4%)	158 (31.3%)	79 (15.6%)	321 (63.6%)

)

Table 6.5 Numbers of individual steps between events with forward probabilities p_f ($N = 505$)

Earlier event (number of occurrences)		Following event				
		E	F	G	H	J
A	(72)	10 (.14)	22 (***.31***)	33 (***.46***)	23 (***.32***)	-
B	(114)	50 (***.44***)	0 (.00)	38 (***.33***)	7 (.06)	24 (***.21***)
C	(166)	7 (.04)	9 (.05)	6 (.04)	20 (.12)	127 (***.77***)
D	(46)	1 (.02)	1 (.01)	0 (.00)	4 (.09)	40 (***.87***)
		J	Q	X1	Y1	Z1
E	(68)	33 (***.49***)	5 (.07)	7 (.10)	16 (***.24***)	28 (***.41***)
F	(32)	7 (***.22***)	1 (.03)	25 (***.78***)	0 (.00)	10 (***.31***)
G	(77)	16 (***.21***)	4 (.05)	2 (.03)	58 (***.75***)	22 (***.29***)
H	(54)	16 (***.30***)	3 (.06)	3 (.06)	3 (.06)	47 (***.87***)
		M	N	O	P	Q
J	(259)	36 (.14)	131 (***.51***)	8 (.03)	42 (***.16***)	68 (***.26***)
K	(58)	10 (***.17***)	39 (***.67***)	1 (.02)	14 (***.24***)	6 (.10)
L	(49)	2 (.04)	33 (***.67***)	2 (.04)	11 (.04)	6 (.12)
		Q	X2	Y2	Z2	
M	(48)	14 (***.29***)	24 (***.50***)	9 (***.19***)	20 (***.42***)	
N	(203)	28 (.14)	167 (***.82***)	8 (.04)	80 (***.39***)	
O	(11)	2 (***.18***)	0 (.00)	8 (***.73***)	2 (***.18***)	
P	(67)	6 (.09)	4 (.06)	1 (.01)	64 (***.96***)	
		R	S	T	U	
Q	(140)	28 (***.20***)	50 (***.36***)	24 (***.17***)	55 (***.39***)	
		X3	Y3	Z3		
R	(28)	5 (***.18***)	9 (***.32***)	6 (***.21***)		
S	(50)	45 (***.90***)	2 (.04)	14 (***.28***)		
T	(24)	2 (.08)	19 (***.79***)	8 (***.33***)		
U	(55)	2 (.04)	2 (.04)	52 (***.95***)		

Note: Figures in brackets represent the forward probability p_f for the step. Figures given in bold italic type are $p_f \geq .15$, the optimum cut-off probability.

Forward and backward probabilities

There are two kinds of probability regarding a sequence of events. For two events occurring in succession, A then B, the first kind of probability concerns how likely B is to follow A. Here, this is termed the "forward probability" p_f(AB | A), i.e. the probability that, in the cases where A occurred, B followed. The second kind of probability concerns how likely A is to precede B. This is termed the "backward probability" p_b(AB | B), i.e. the probability that, in the cases where B occurred, A preceded it. These probabilities do not have any causal implication, they simply refer to the order in which things occurred.

The forward probability reflects the predictability of the pattern of events (what is likely to happen, given a particular event), and the backward probability reflects its comprehensibility (what is likely to have happened, given an outcome event). The predictability can be utilised to inform and facilitate the management of problematic incidents. Knowing what may happen next, in the light of what is happening now, is valuable information, even if the present event is not the cause of the next. The comprehensibility is more useful in investigating incidents with particular outcomes that have already occurred.

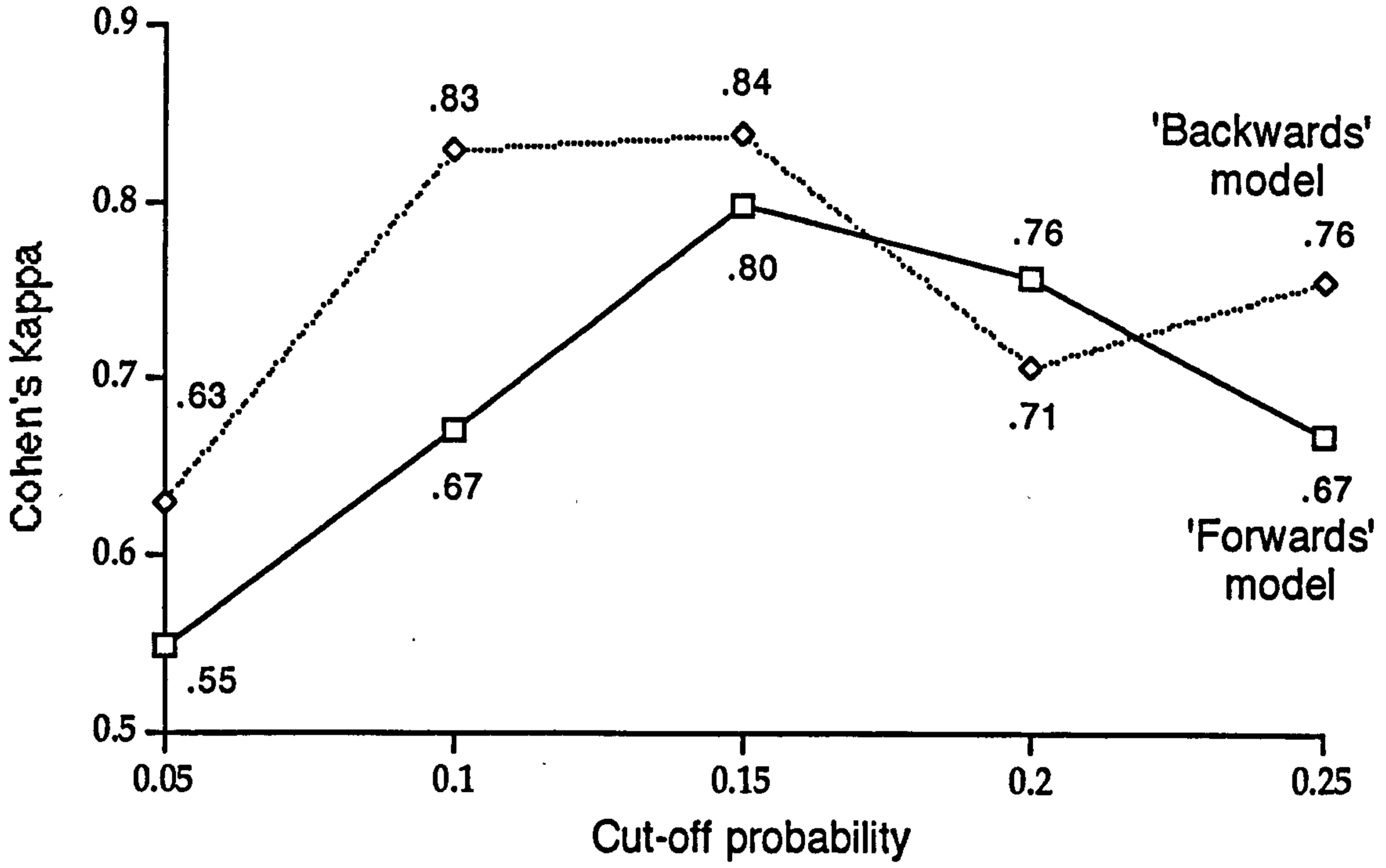
It is also important to note that the forward and backward probabilities do not necessarily correspond. They may turn out to be very similar or very different, reflecting the way that particular pattern of events is structured, rather than the reliability or consistency of measurement. For example, every win in a lottery is preceded by the purchase of a ticket, but very few ticket sales lead to a win. The differences in likelihood reflect the odds of the situation, not an error of measurement.

The forward probability (p_f) for each step was calculated as the proportion of incidents involving the first event of that step which actually took that step. For example, if 24 incidents started as "customer misbehaviour re closing" and of these 16 led to an "attack on staff", the forward probability for that step is 16 ÷ 24 = .67. The forward probabilities p_f are given in Table 6.5. It should be noted that the sum of the probabilities of all the steps starting from a particular event rarely equals 1 as each event may be followed by one other event, by more than one or by none, as explained previously.

This procedure created the fully detailed empirical pathway map, too elaborate to be usefully illustrated here. In order to produce a more interpretable map, it was necessary to remove steps of low probability. The cut-off probability was determined using split half reliability procedures.

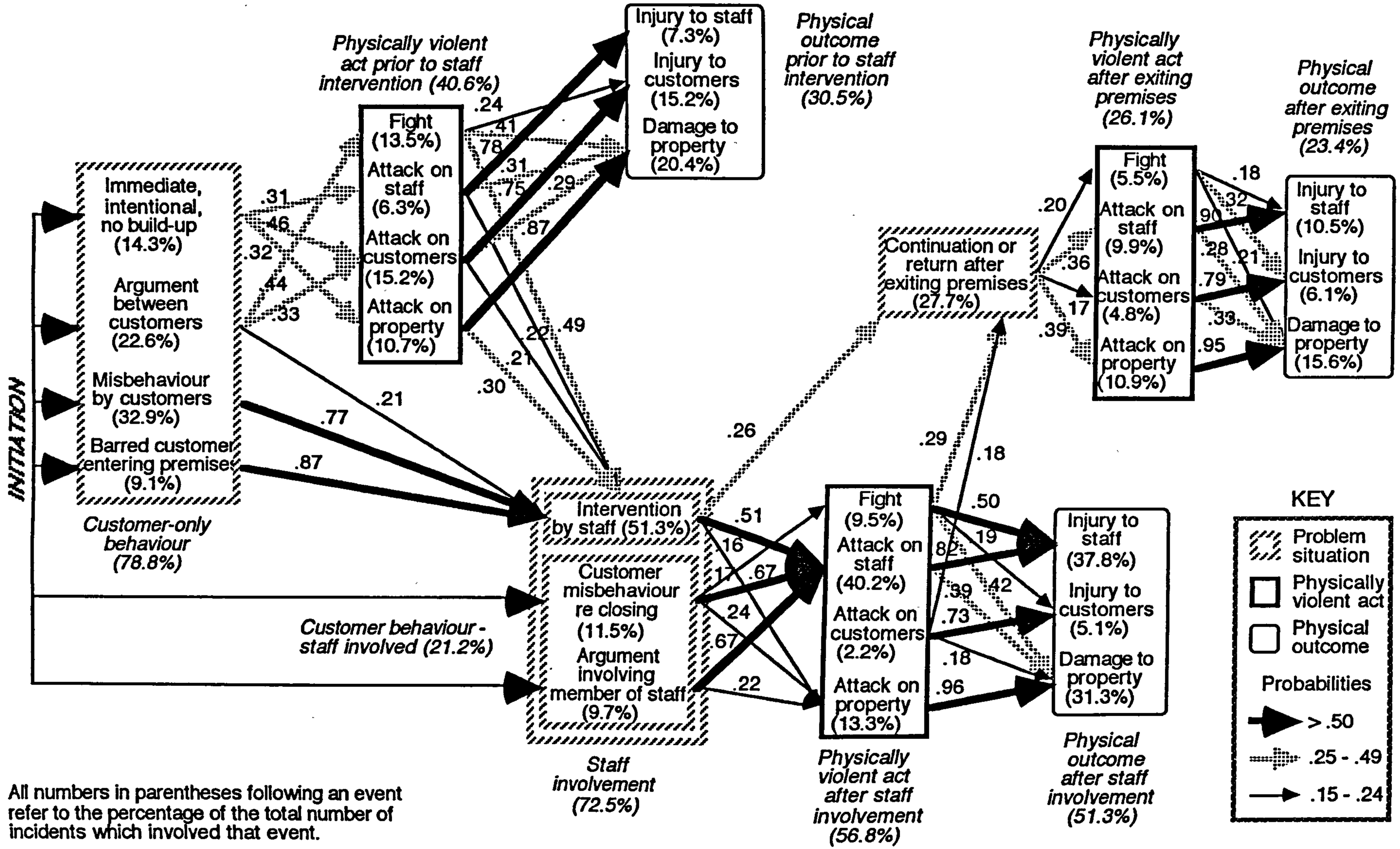
To establish the split-half reliability of the maps, two randomly selected sets of 200 incidents were separately analysed. The empirical pathway maps, created for the two sets of incidents at the same probability cut-off level, were compared in terms of the presence or absence of each of the 86 possible steps of the detailed logical pathway model. Agreement was estimated using Cohen's kappa (Cohen, 1960). Values of .05, .10, .15, .20 and .25 were considered for the cut-off probability. More extreme values were not considered as they would remove too much or too little of the detail. The value of .15 was chosen as maximising the split-half reliability, as shown in Figure 6.5. This cut-off level produced an acceptable value for kappa of .80 (p<.0001, z=7.39). The agreement matrix is given in Appendix 8.

Figure 6.5 Agreement between empirical pathway maps for two sets of incidents at different cut-off levels



Removing the steps for which the probability fell below the value of .15 created the empirical pathway map illustrated in Figure 6.6. The retained steps are represented by arrows of different thicknesses indicating different probability levels, the thick black arrows representing the most probable steps.

Figure 6.6 Forward empirical pathway map (probability cut-off = .15)



All numbers in parentheses following an event refer to the percentage of the total number of incidents which involved that event.

A second empirical pathway map was constructed using the backward probabilities p_b, that is the proportion of particular events which arose from, or followed, a particular previous event. For example, if there were 84 attacks on staff after staff involvement and 16 of those arose from problems re closing time, the backward probability p_b for the step is $16 \div 84 = .19$. The backward probabilities p_b are given in Table 6.6.

The optimal cut-off probability was again found too be .15, as shown in Figure 6.5 and the Cohen's kappa of .84 ($p<.0001$, $z=7.76$) further established the reliability of the maps. The agreement matrix is given in Appendix 8. Removing the steps for which the probability fell below the value of .15 created the empirical pathway map illustrated in Figure 6.7.

The similarity between the forward and backward maps for the entire sample was also estimated using Cohen's kappa, in this case as a measure of agreement rather than consistency. The agreement matrix is given in Appendix 8. The value for Cohen's kappa was .51 ($p < .0001$, $z = 4.76$), regarded, albeit in a different context, as "fair" agreement by Fleiss (1981). This demonstrated a basic similarity in the structure of the two maps but also indicated, as expected, a degree of difference which can be used to provide extra information about the incidents and the risk of injury. The forward map indicated what particular events are likely to *lead to*, while the backward map showed what particular events were likely to have been *preceded by*.

Simplified empirical pathway maps

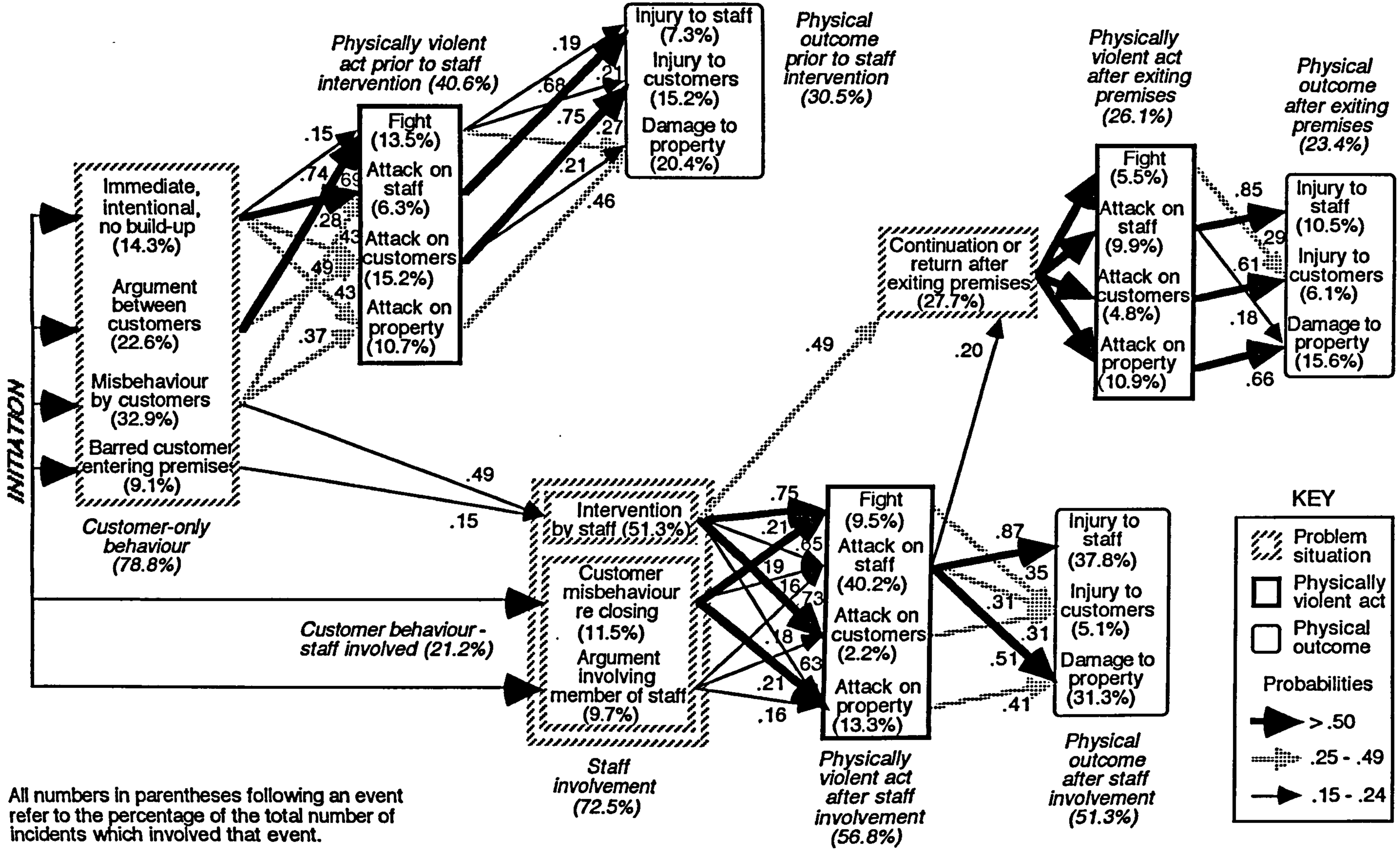
The usefulness of the backward map for detecting how most injuries and damage occurred is enhanced when simplified versions of the empirical pathway maps are constructed, as shown in Figures 6.8 and 6.9. The main difference between the two simplified maps is the greater prominence in the backward map (Figure 6.9) of the pathways connecting injury to customers to attack on customers to initial customer problems. These pathways were overshadowed in the forward map (Figure 6.8) by the greater numbers of injuries to staff reported. From Figure 6.9 it can be seen that attacks on, and injuries to, customers occurred much more often prior to, rather than after, staff involvement.

Table 6.6 Numbers of occurrences of individual steps between events with backward probabilities p_b for those steps ($N = 505$)

Earlier event	Following event (number of occurrences)				
	E (68)	F (32)	G (77)	H (54)	J (259)
A	10 (***.15***)	22 (***.69***)	33 (***.43***)	23 (***.43***)	-
B	50 (***.74***)	0 (.00)	38 (***.49***)	7 (.13)	24 (.09)
C	7 (.10)	9 (***.28***)	6 (.08)	20 (***.37***)	127 (***.49***)
D	1 (.01)	1 (.03)	0 (.00)	4 (.07)	40 (***.15***)
	J (259)	Q (140)	X1 (37)	Y1 (77)	Z1 (103)
E	33 (.13)	5 (.04)	7 (***.19***)	16 (***.21***)	28 (***.27***)
F	7 (.03)	1 (.01)	25 (***.68***)	0 (.00)	10 (.10)
G	16 (.06)	4 (.03)	2 (.05)	58 (***.75***)	22 (***.21***)
H	16 (.06)	3 (.02)	3 (.08)	3 (.04)	47 (***.46***)
	M (48)	N (203)	O (11)	P (67)	Q (140)
J	36 (***.75***)	131 (***.65***)	8 (***.73***)	42 (***.63***)	68 (***.49***)
K	10 (***.21***)	39 (***.19***)	1 (.09)	14 (***.21***)	6 (.04)
L	2 (.04)	33 (***.16***)	2 (***.18***)	11 (***.16***)	6 (.04)
	Q (140)	X2 (191)	Y2 (26)	Z2 (158)	
M	14 (.10)	24 (.13)	9 (***.35***)	20 (.13)	
N	28 (***.20***)	167 (***.87***)	8 (***.31***)	80 (***.51***)	
O	2 (.01)	0 (.00)	8 (***.31***)	2 (.01)	
P	6 (.04)	4 (.02)	1 (.04)	64 (***.41***)	
	R (28)	S (50)	T (24)	U (55)	
Q	28 (***1.00***)	50 (***1.00***)	24 (***1.00***)	55 (***1.00***)	
	X3 (53)	Y3 (31)	Z3 (79)		
R	5 (.09)	9 (***.29***)	6 (.08)		
S	45 (***.85***)	2 (.06)	14 (***.18***)		
T	2 (.04)	19 (***.61***)	8 (.10)		
U	2 (.04)	2 (.06)	52 (***.66***)		

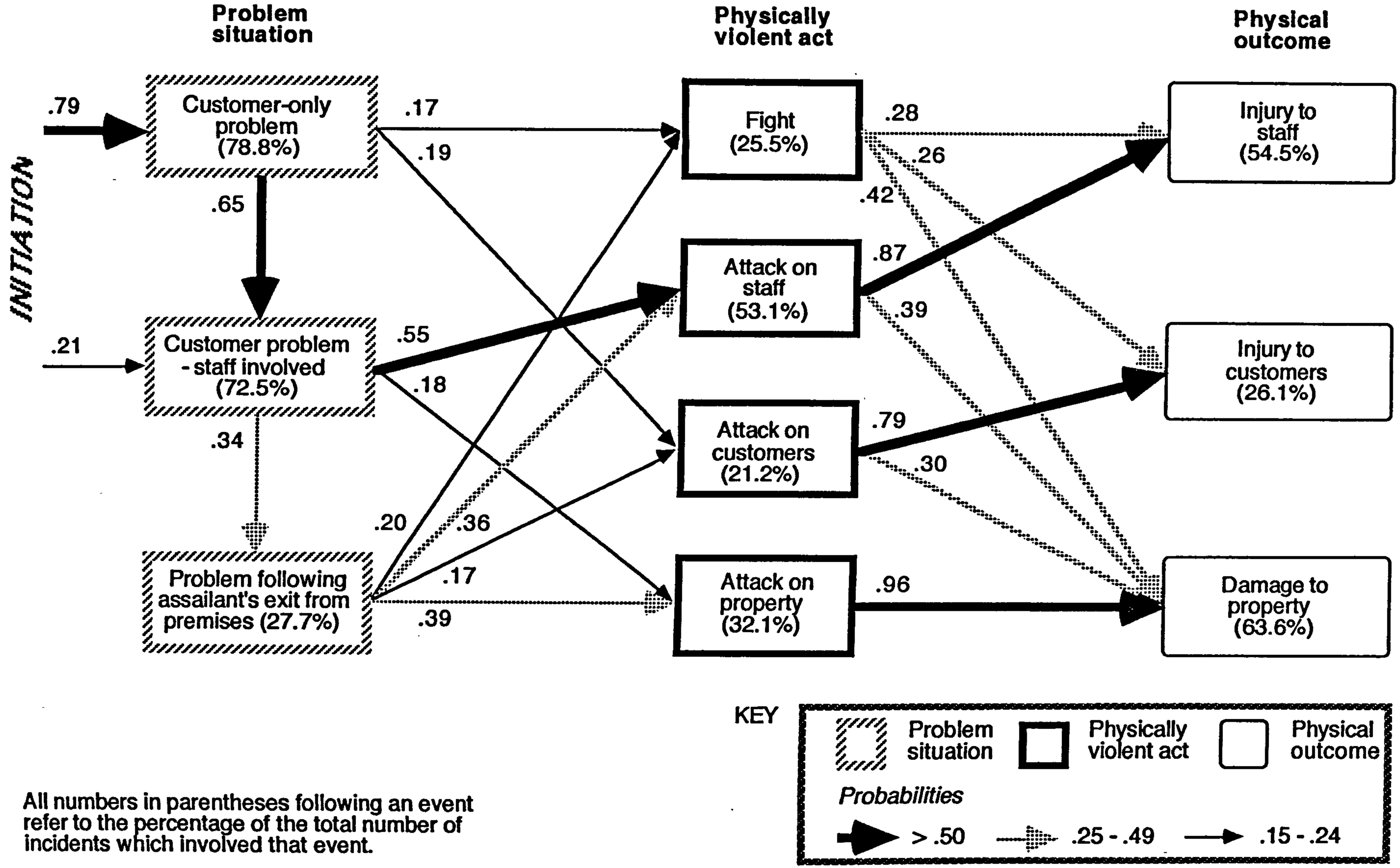
Note: Figures in brackets represent the backward probability for the step. Backward probabilities equalling or exceeding the cut-off probability of .15 are given in bold italic type.

Figure 6.7 Backward empirical pathway map (probability cut-off = .15)



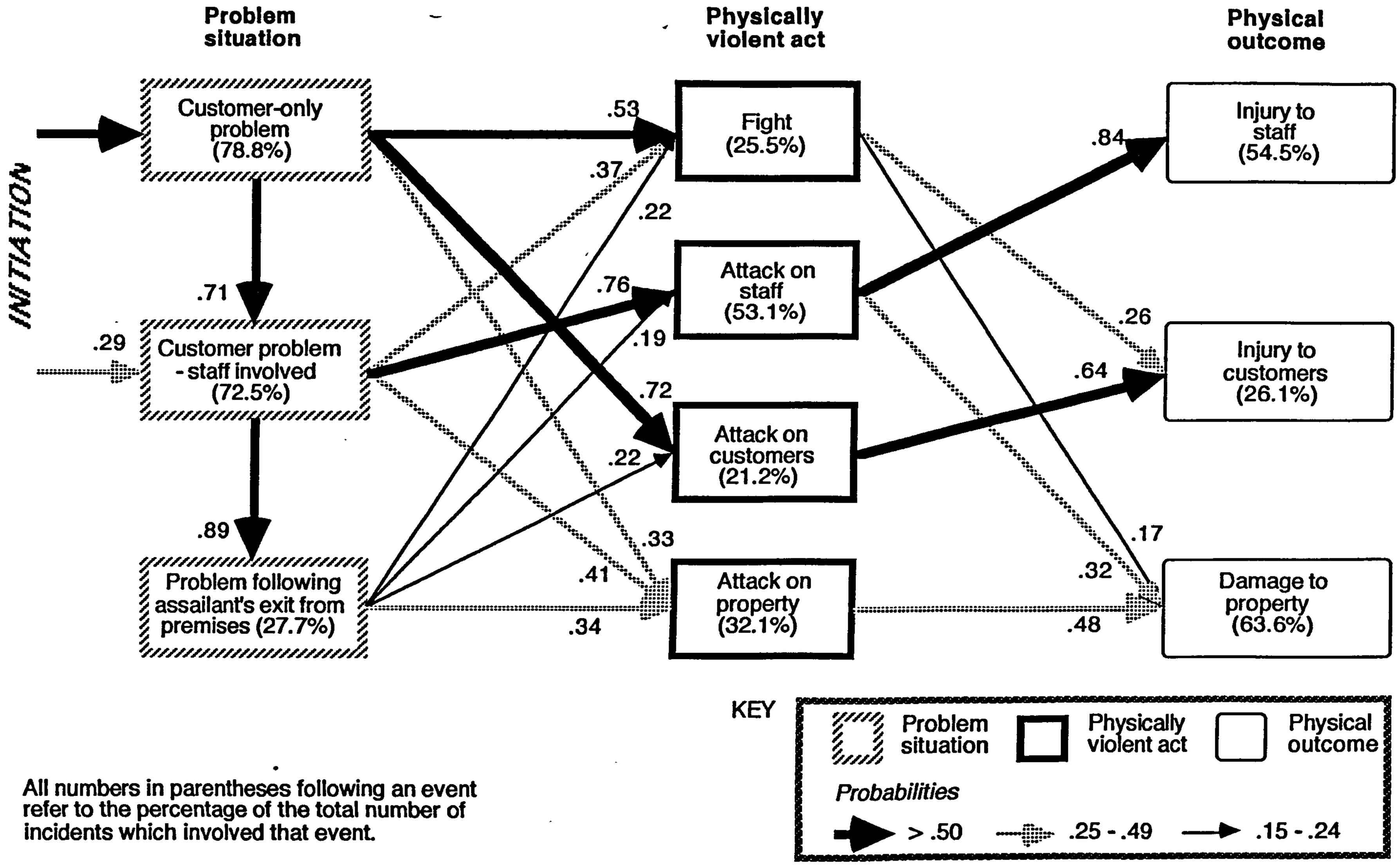
All numbers in parentheses following an event refer to the percentage of the total number of incidents which involved that event.

Figure 6.8 Simplified forward empirical pathway map (probability cut-off = .15)



All numbers in parentheses following an event refer to the percentage of the total number of incidents which involved that event.

Figure 6.9 Simplified backward empirical pathway map (probability cut-off = .15)



All numbers in parentheses following an event refer to the percentage of the total number of incidents which involved that event.

6.2.5 Probabilities for longer pathways

Probabilities derived from the logical pathway model give useful information whether considered for the individual steps or whether additionally calculated for short sequences of steps or for longer pathways which run right through incidents. However, caution must always be exercised when considering longer chains, as the probabilities defining short fragments may not show transitive relations that allow straightforward extrapolation to longer sequences $p_f(\mathrm{ABC} \mid \mathrm{A}) \neq p_f(\mathrm{AB} \mid \mathrm{A}) \times p_f(\mathrm{BC} \mid \mathrm{B})$. Therefore probabilities for longer pathways are calculated directly from the data, not by taking the product of the probabilities of the individual steps. This can be illustrated by the single most common pathway through reported incidents, i.e. "Misbehaviour by customers" followed by "Intervention by staff" (before any physically violent act) producing an "Attack on staff" which resulted in "Injury to staff". This pathway was followed in 11.7% of incidents; its forward probability calculated straight from the data is .36, whereas the product of the probabilities of the individual steps (.77 x .51 x .82, see Figure 6.6) gives a value of .32.

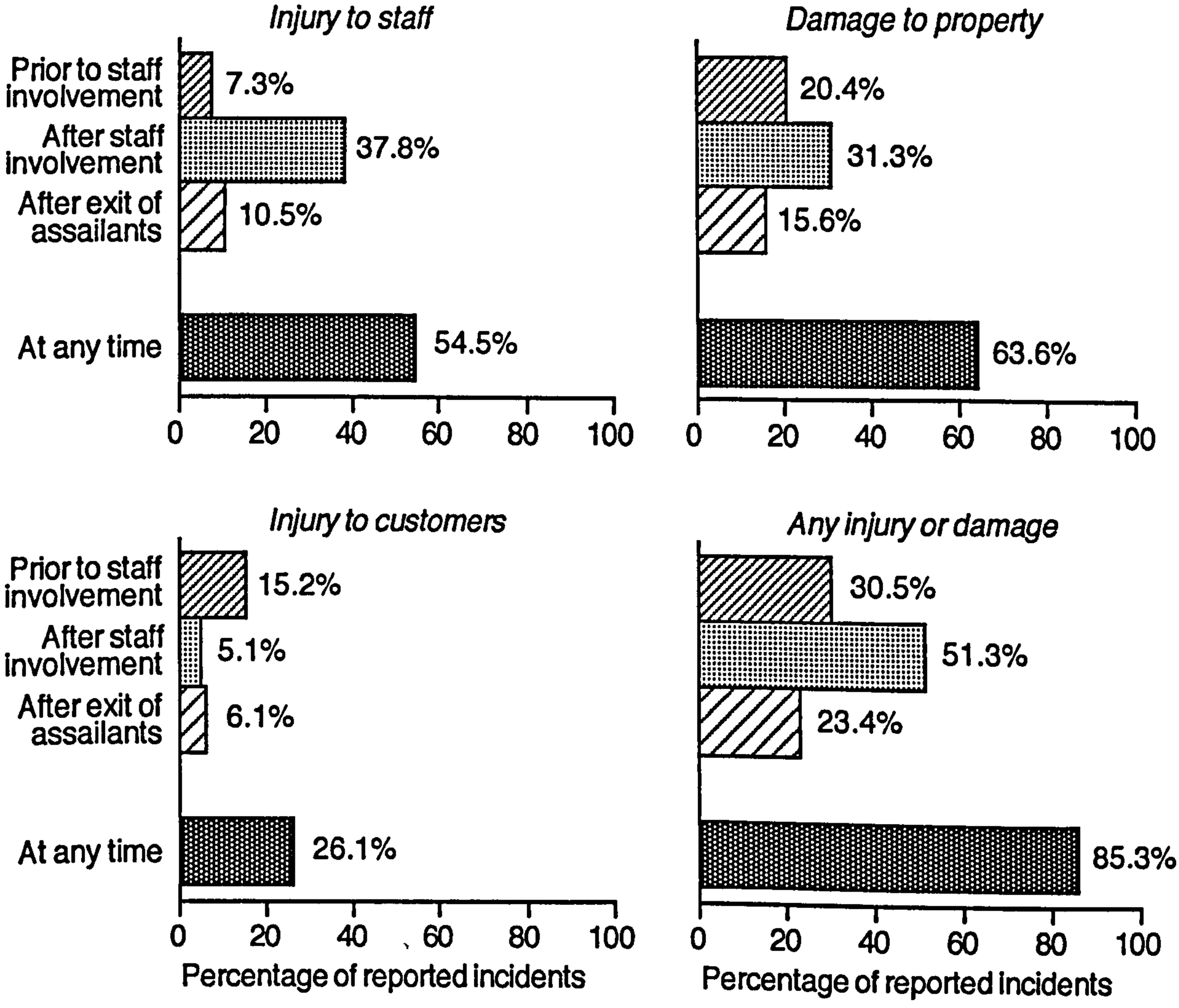
6.3 RESULTS

6.3.1 Events and steps at different stages of incidents

Initial Stages

The most common initiating problems were misbehaviour by customers (32.9%), followed by arguments between customers (22.6%), immediate or intentional violent acts (14.3%), customer misbehaviour re closing (11.3%), arguments involving members of staff and customers (9.7%) and a barred customer entering the premises (9.1%), as shown in Table 6.3. Staff intervention before any violent act had occurred was most likely following both misbehaviour by customers (p_f = .77) and a barred customer entering the premises (p_f = .87). Arguments between customers, however, were more likely to lead to fights (p_f = .44) or attacks on customers (p_f = .33) before staff became involved. Immediate or intentional violent acts were likely to be attacks on customers (p_f = .46), property (p_f = .32) or staff (p_f = .31) rather than fights. In almost a third of the incidents (30.5%) injury or damage was incurred before staff intervened. Most common was damage to property (20.4%), followed by injury to customers (15.2%) and injury to staff (7.3%) (see Figure 6.10 and Table 6.4).

Figure 6.10 Percentages of incidents involving different physical outcomes at different stages of reported incidents.



After Staff Involvement

Once staff had become involved in these incidents, they were highly likely to be attacked (p_f = .67 for both customer misbehaviour re closing and arguments involving a member of staff and p_f = .51 following intervention by staff). Property was also attacked in around one fifth of these cases (p_f = .24 for customer misbehaviour re closing, p_f = .22 for arguments involving a member of staff and p_f = .16 following intervention by staff). In around a quarter of interventions by staff (p_f = .26) the assailants left without committing any physically violent act, but then caused some sort of problem after exiting the premises. In over half the incidents (51.3%) injury or damage was incurred following staff involvement. Most common were injury to staff (37.8%) and damage to property (31.3%). Injury to customers (5.1%) was not common at this stage (see Figure 6.10 and Table 6.4).

Following Exit of Assailants

In more than a quarter of the reported incidents (27.7%) assailants continued to cause trouble after they had apparently left the premises, either immediately after exiting or on returning some time later. The type of physical violence at this stage was varied, but attacks on property (p_f = .39) and attacks on staff (p_f = .36) were rather more likely than fights (p_f = .20) and attacks on customers (p_f = .17). A quarter of incidents (23.4%) involved injury or damage following exit. Most common was damage to property (15.6%) followed by injury to staff (10.5%). Again, injury to customers (6.1%) was less common at this stage (see Figure 6.10 and Table 6.4).

6.3.2 Outcome of Violent Acts

Figure 6.8, the simplified forward map shows, not surprisingly, that attacks on staff usually led to injury to staff (p_f = .87, ratio serious:minor injury = 3:2), that attacks on customers usually led to injury to customers (p_f = .79, ratio serious:minor injury = 3:1) and that attacks on property almost inevitably led to damage to property (p_f = .96). Attacks on staff (p_f = .39) and on customers (p_f = .30) were also quite likely to produce damage to property. Fights produced damage to property (p_f = .42), injury to staff (p_f = .28, ratio serious:minor injury = 1:1) and injury to customers (p_f = .26, ratio serious: minor injury = 4:3). The percentages of reported incidents which involved the different violent acts and physical outcomes are shown in Table 6.4.

6.3.3 Origins of Injury and Damage

Figure 6.9, the simplified backward map, indicates how most injuries and damage were incurred. Injury to staff was highly likely to have resulted from attacks on staff (p_b = .84), often after they had become involved in a customer problem (p_b = .76), usually by intervention (p_b = .71) rather than being involved from the start of the problem (p_b = .29). This ties in with the acknowledged vulnerability of people whose job includes a controlling function (Poyner & Warne, 1988).

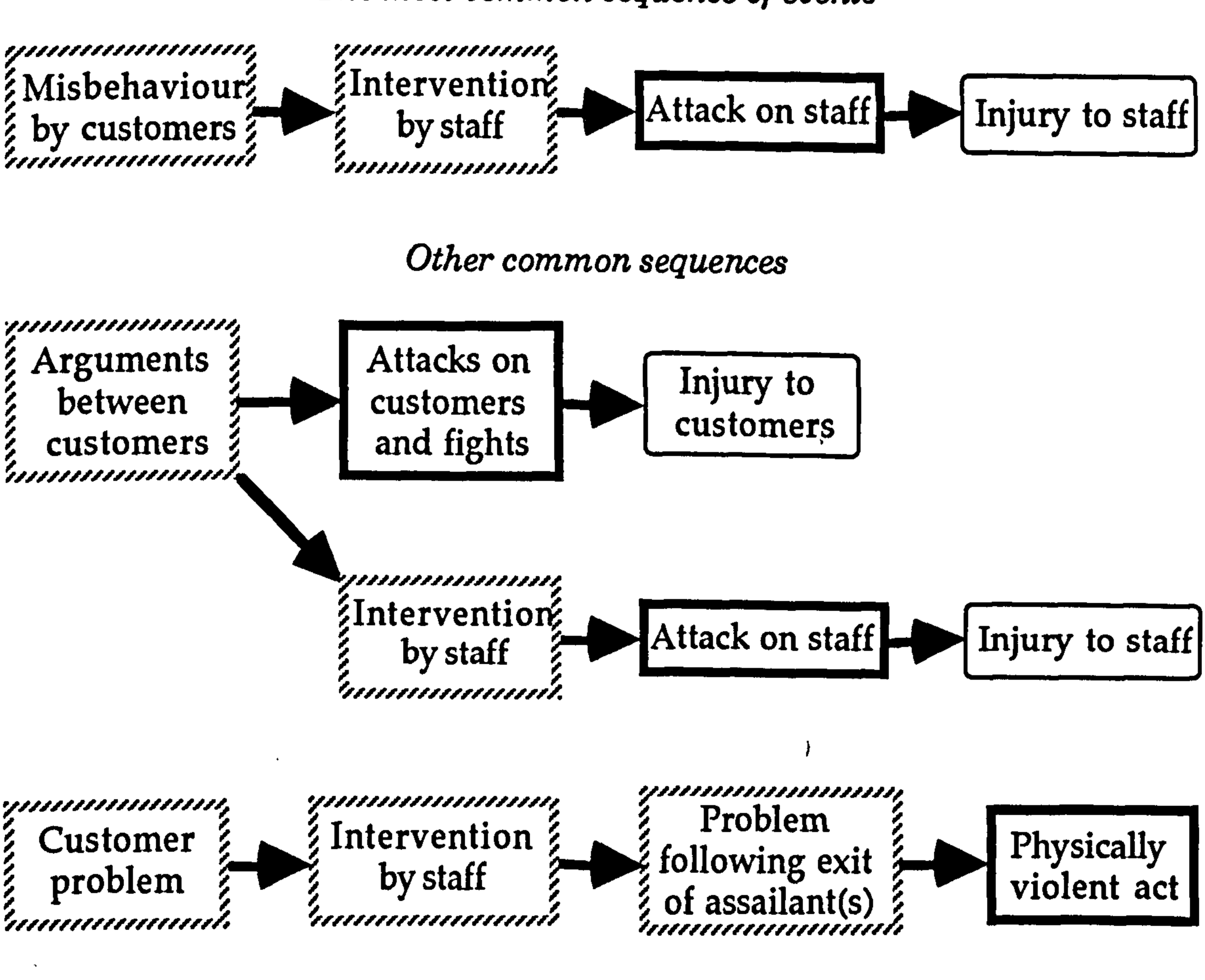
Injury to customers was most likely to have been incurred during an attack on customers (p_b = .64), usually arising directly from the initial customer problem (p_b = .72). Such injury also occurred in fights (p_b = .26), again mostly arising from the initial customer problem (p_b = .53), but also happening after staff involvement (p_b = .37) and following exit (p_b = .22).

Damage to property was incurred from attacks on property (p_b = .48), attacks on staff (p_b = .32) and fights (p_b = .17). Attacks on property occurred almost equally at all stages of incidents (p_b = .33 prior to staff involvement, p_b = .41 after staff involvement and p_b = .34 after exit from the premises).

6.3.4 Longer pathways through incidents

The most common pathway through reported incidents was misbehaviour by customers followed by intervention by staff (before any physically violent act) producing an attack on staff resulting in injury to staff, as seen from Figure 6.6, and shown in Figure 6.11.

Figure 6.11 Common pathways through reported incidents



Other common pathways included those emanating from arguments between customers, as shown in Figure 6.11. When staff did not intervene, such arguments were followed by attacks on customers or fights, both of which resulted in injury to customers. However, when staff intervened, this intervention was often followed by an attack on staff leading to injury to

staff. In other words, the intervention appears to have been successful in averting injury to customers but at the cost of incurring injury to staff.

Another important sequence of events, seen in Figure 6.8 and shown in Figure 6.11 was some kind of customer problem followed by staff intervention. Subsequently, exit of the aggressors from the premises was followed by some kind of physical attack, predominantly attack on staff or on property.

6.4 DISCUSSION

The reliability of the present analysis has been demonstrated, in terms of (a) the inter-rater reliability of the coding and (b) the split-half reliability of the derivation and structure of the empirical pathway maps. In other words, the logical pathway technique identified patterns within incidents and produced a stable model from which to obtain reliable quantitative information about how incidents progressed. The findings, therefore, can be taken to provide secure information on which to base strategies to manage violence in licensed premises.

The results have to be interpreted in the light of two considerations, dictated by the information available from incident reports. First and most important, they were derived only from problem situations that staff recognised as having "gone wrong", not from those where problems had been successfully resolved. They do not take into account, for example, the many occasions on which intervention by staff has calmed a problem situation so that a potential incident was averted. Second, each incident has been considered in isolation, whereas other evidence and, indeed, the model itself indicate that incidents are often linked to previous events at the premises.

Several findings stand out from the empirical pathway maps. First, the most common initiating event was misbehaviour by customers (32.9%). Second, in over half the reported incidents (51.3%), some injury or damage was sustained following staff intervention. Third, injury to staff was highly likely to have resulted from attacks on staff (p_b = .84), often after they had become involved in a customer problem (p_b = .76), usually by intervention (p_b = .71) rather than being involved from the start (p_b = .29). Fourth, the most prominent single pathway through incidents (11.7% of incidents), as

seen in Figure 6.6, was misbehaviour by customers followed by intervention by staff (before any physically violent act) producing an attack on staff that resulted in injury to staff.

These interrelated findings serve to suggest particular aspects to examine in greater detail in any attempt to design effective strategies for reducing the risks from violence in licensed premises. The first consideration is how the public house physical and social environment can best be managed to encourage acceptable behaviour. The second is whether, when and how staff should intervene when unacceptable behaviour occurs. The third is how staff can best be protected if they are attacked. The fourth is what help should be available to minimise the impact of any injuries that are sustained. Such issues have bearing on workplace design, working procedures and practices, and staff training, particularly regarding intervention skills and emergency procedures.

A further important finding from the empirical pathway maps was that over a quarter (27.7%) of reported incidents included further action after the assailants had exited the premises and that, for almost all these incidents, it followed staff involvement, as shown in the simplified maps, Figures 6.8 and 6.9, and in Figure 6.11. Further, the maps revealed that, in 11.5% of reported incidents, there was physical violence only after the assailants had exited. These findings indicate the importance of public house staff being aware that incidents are not always finished when the assailants have left the premises. They suggest the importance of training both in how to handle situations of conflict so that no-one leaves feeling aggrieved, and in being extra vigilant for further action following conflict situations whether physical violence had occurred or not (see Leather, Beale, Lawrence & Maxwell, 1996).

The findings regarding further action after incidents had apparently finished prompted further investigation to discover whether any longer term effects of incidents could be detected. The next chapter describes a study that sought such effects by examining the timings of reported incidents that occurred at the same premises.

CHAPTER 7: INVESTIGATING THE TIMING OF INCIDENTS

The timing of the incidents reported through the KPP IRS was examined in Section 4.2.1 in terms of the distribution over months of the year, days of the week and times of the day. The increased numbers of incidents at the weekend and late in the evenings were as expected in that they followed the times of highest usage and socialisation in groups. No pattern was found regarding months of the year, except some increase in December, as would be expected around the Christmas period. Further patterns in the timing of incidents were sought, taking clues from two aspects of the nature of the incidents.

First, Section 4.3.1 indicated that 7% of incidents were stated to involve some repercussions from previous incidents. Second, Section 4.3.5 and the work described in Chapter 6 demonstrated that around a quarter of reported incidents involved some follow-up or continued action after the assailants had exited the premises. This action usually occurred immediately, or soon after, the assailants exited the premises. These findings prompted questions about what happened in the longer term, particularly as the public house is a location to which many people return on a regular basis, as discussed in Section 1.4. The present chapter describes the investigation of any increase in likelihood of further violence for the days and weeks following reported incidents, either from the original aggressors or from other sources. The work described here has been published in the *Journal of Occupational Health Psychology* (Beale, Clarke, Cox, Leather & Lawrence, 1999)

7.1 SYSTEM MEMORY

Theoretical considerations suggest that the occurrence of one incident at a location would increase the likelihood of another incident occurring via a number of mechanisms. First, there appears to be little reason to suggest that the escalation of aggressive interactions (Cox & Leather, 1994), while usually applied to situations where individual actions follow immediately from each other, should not apply over a longer time period. This is noted, for example, by Andersson and Pearson (1999) as the spiralling effect of

incivility. This would suggest that the people originally involved, either as assailants or as victims, might seek to continue the action at a later stage. Second, other people, either connected to the original participants in some way, or witnessing the incident, might perceive some injustice in the situation and seek to redress it (see Leather & Lawrence, 1995). Third, persons observing, or hearing about, an incident at a particular public house might assume that violent behaviour is the one of norms operating in that house so would be less inhibited in the use of aggression (Lawrence & Leather, 1999).

The possibility of a system memory effect for violent incidents is suggested by social interactionist theory which makes the point that violence often originates in simple grievances and disputes that escalate over time into something more (Tedeschi & Nesler, 1993). The potential for violence, in other words, is a fact within the system of social relationships. The public house is an environment where the origin or escalation of disputes is particularly likely.

However, system memory is a separate phenomenon from bias. Bias suggests that some licensed houses are more likely to experience violent incidents than others, an effect that is relatively constant over time. System memory, on the other hand, concerns an increase in the likelihood of an incident occurring at any one house following the occurrence of a previous incident. Evidence for the existence of system memory requires the demonstration of a change in likelihood of an incident occurring over time, that is that incidents occur bunched together more often than would be expected by chance (Clarke & Crossland, 1985).

There is anecdotal evidence to suggest that violent incidents at a particular licensed house occur in clusters. For example, licensees surveyed by Hillas, Cox and Higgins (1988) stated that: "Violent outbursts tend to be grouped together, one often leading to another, thus I may have 3 incidents in a week, then none for a month." and "Incidents tend to come and go in cycles. It's possible to go six months with no incident and then have three in one week." Such observations, however, are not necessarily evidence of memory because such groupings would occur as a result of random fluctuation and bias alone. It is necessary to test whether such groupings occur significantly more often than expected when bias has been taken into account.

These licensees also appeared to be aware that they were more likely than normal to experience another such incident in the near future: "Yes, people are afraid it may happen again." "Nobody likes drinking in a rough pub where a fight can start any minute." Further, they thought that trade was affected by such incidents, 45% of managers claiming that their takings dropped. "Bad reputation, 'good' customers leave, creating a 'void', violence attracts violent people." The majority of these stated that the effect only lasted for one or two nights but in some cases it lasted longer.

Few researchers have considered the relative timings of incidents occurring at the same premises. Some studies have looked at the timings of repeat targeting of premises in robberies. However, these relate to planned criminal activity, rather than to incidents arising out of the psychosocial environment at the premises, as the majority of incidents in the present study do. The repetition of planned robberies is more likely to be affected by the success of previous attempts at the premises, determined largely by security measures (see Gill & Pease, 1998).

Although there is a body of anecdotal evidence concerning the reoccurrence of incidents at particular venues, few hard data have been collected. The most closely related body of evidence regarding the reoccurrence of violent incidents concerns the victims of assault, who have been shown to be at increased risk of suffering another attack. Dowd, Langley, Koepsell, Soderberg and Rivara (1996), for example, examined hospitalisations for injury in New Zealand and found that prior injury was a significant risk factor for a repeated assault injury.

The *1992 British Crime Survey* (Mayhew, Aye Maung, & Mirrlees-Black, 1993) revealed that, in approximately 1 year, 32% of victims of assaults in and around work and 39% of victims of pub fights were victimised more than once. Similarly, in the *1998 British Crime Survey* (Mirrlees-Black, Budd, Partridge & Mayhew, 1998), 31% of victims of violence suffered more than one incident during 1997. However, there is no information in these surveys about the timings of the repeat victimisations in relation to previous victimisations.

Brown, Bute and Ford (1986) reported that, in a postal survey of U.K. social workers, 29% reported being the victim of at least one assault over the preceding 3 years. Of these, 61% had been assaulted more than once, which

suggests that victims of one assault were more likely to be the victim of a further assault. Breakwell and Rowett (1989) found a similar effect in that, of the 25% of social workers who reported being assaulted at least once in the previous 5 years, 40% had been assaulted more than once. Again there is no information on the times between the assaults.

Both theoretical considerations and anecdotal evidence suggested that the occurrence of one incident at a venue would increase the likelihood of further incidents occurring. It was contended, therefore, that data from the KPP IRS would reveal an increased likelihood of reported incidents occurring in the days and weeks following previously reported incidents.

The study described in this chapter examined reported violent incidents that were followed by a further such incident within 26 weeks (6 months). The primary objective was to identify patterns in the timing of those further incidents that indicated that a memory effect was at work. A secondary objective was to identify any features of initial incidents that increased the likelihood of reoccurrence and any common features of the subsequent incidents.

7.2 TIMING OF THE REOCCURRENCE OF INCIDENTS

The investigation was carried out using a log-survival technique, which was originally devised to analyse ecological data, particularly life-span data (Clarke & Crossland, 1985; Hutchinson, 1978; Visscher & Dukas, 1997), and is well established in medical epidemiology (Lee & Go, 1997; Marubini & Valsecchi, 1995) and engineering (Kalbfleisch & Prentice, 1980). The technique is applicable to any set of data in which two well defined events follow each other with a measurable time interval between. These events may be different, such as death following birth or a particular operation, or failure of a piece of equipment following installation, or they may be similar, for example, the use of a particular letter or word in language, or the feeds taken by an animal.

If the probability of the second event occurring is constant irrespective of the time since the first event (i.e. reoccurrence occurs at random) the plot of the percentage of survivors against time shows an exponential decline, so a plot of the log of the percentage of survivors against time is a straight line

with negative gradient. This can be referred to as the "memoryless property of the exponential distribution" (Kalbfleisch & Prentice, 1980); in other words, the timing of the second event is unaffected by what has occurred previously. Any section of the graph showing a steeper negative gradient indicates an increased likelihood of the second event occurring in that time period. Thus a concave plot (below the straight line), also termed positively skewed (Hutchinson, 1978), shows that the events are clumped, that is, short intervals are more common than in the random (constant likelihood) case (Clarke & Crossland, 1985).

7.2.1 Method

This investigation required the reporting system to be both well established and stable. From January 1992 to June 1995, the reporting system did remain relatively stable in terms of the numbers, types and geographical location of incidents reported. All incidents that were reported to have occurred during the 3-year period January 1992 to December 1994 were used as "initial incidents" in this study. Any incident that occurred at the same premises within 26 weeks of an initial incident was used as a "subsequent incident". Subsequent incidents, therefore, could occur from January 1992 to June 1995. To be considered as a subsequent incident, a separate report form had to have been received for the second incident, unlike the follow-up action considered in Chapter 6, which referred to action included in the same report. Subsequent incidents were included whether or not they were reported as being directly related to the initial incident.

The terms "initial" and "subsequent" refer simply to the order of any pair of incidents occurring consecutively at the same premises. Thus, for example, if there are three incidents at the same premises within the study period, the second incident may be the subsequent incident in one pair and the initial incident of the next pair. This is appropriate for time interval analysis, which does not require the first event of the sequence under study to be special or different in any way. In log-survival analysis an initial event is simply the first of any pair of successive events, from which the time interval is measured to the next or subsequent event. That event may then be used in turn as the initial event of the next time interval, and so on.

A 26-week (6-month) time limit for reoccurrence was chosen for two reasons, in that (a) it provided an optimum number of initial/subsequent incident pairs within the three-and-a-half-year period of stability for the reporting

system, and (b) it was a sufficiently long time period to display the expected patterns of reoccurrence. The results confirmed that the 26 week estimate was appropriate.

The locations of all reported incidents that occurred from January 1992 to June 1995 were compared in order to calculate, for every incident that occurred between January 1992 and December 1994, the number of days until another incident occurred at the same premises.

For each week, up to 26 weeks, following initial incidents, the log of the percentage that had not yet been followed by a subsequent incident was calculated. In this case $\log_{10}$ was used, although the technique can utilise any base for the log. The log percentages were then plotted against the number of weeks. In addition, for each week after the initial incident a weekly hazard rate for reoccurrence was estimated by dividing the number of initial incidents surviving to the beginning of that week without reoccurrence by the number of subsequent incidents occurring during that week.

When interesting results were obtained from the 26-week analysis, a similar analysis was carried out for the 15 days following each initial incident to obtain a more detailed picture for that period. Daily hazard rates for reoccurrence were also calculated for this period.

7.2.2 Results

There were 1082 reported incidents occurring between January 1992 and December 1994 in the 2440 managed houses, giving a mean weekly rate of occurrence per house of 0.0028. Of these reported incidents, 220 (20.3%) were followed by another reported incident at the same premises within 26 weeks (6 months), at a mean weekly hazard rate for reoccurrence of 0.0087. The number of weeks from initial to subsequent incident at the same premises, the weekly hazard rate for reoccurrence and the log of the percentage of survivors (i.e. initial incidents that have not yet been followed by a subsequent incident) for each week are shown in Table 7.1. The log of the percentage of survivors was plotted against the number of weeks since the initial incident. The resulting plot, shown in Figure 7.1, was concave, showing that reported incidents were clumped, that is, short intervals between incidents were more common than in the random case (Clarke & Crossland, 1985). The plot showed a steeper negative gradient than that of

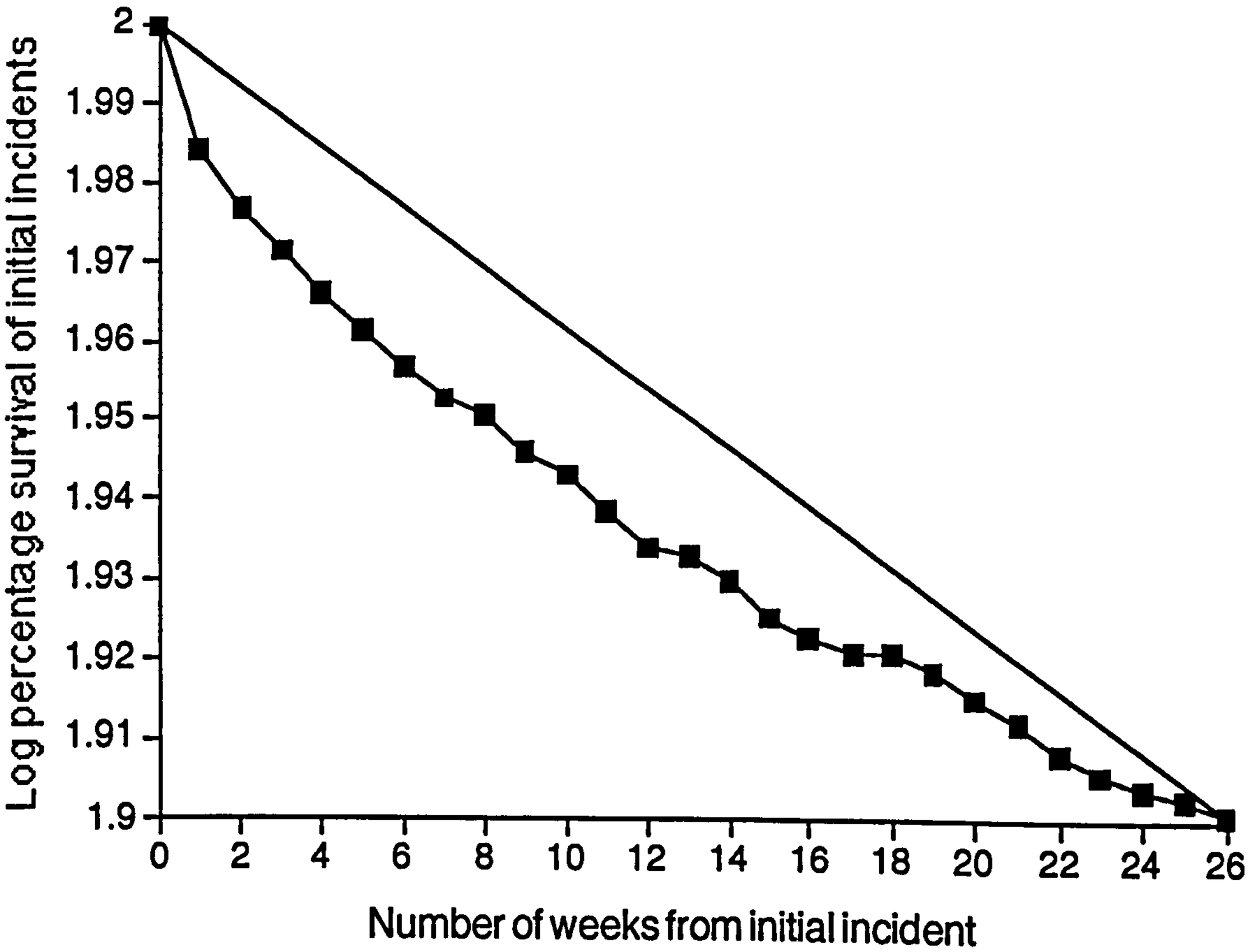
Table 7.1 Times between initial and subsequent violent incidents at the same premises that occurred up to 26 weeks apart

No. weeks since initial incident	No. cases subsequent incident occurred	No. cases subsequent incident *not* yet occurred	Weekly hazard rate for reoccurrence (M = .0087; SD = .0065)	Log percentage survival
0		1082		2.0000
1	38[a]	1044	.0351***	1.9845
2	18	1026	.0172† (**)	1.9769
3	12	1014	.0117 (*)	1.9718
4	13	1001	.0128 (*)	1.9662
5	11	990	.0110	1.9614
6	10	980	.0101	1.9570
7	9	971	.0092	1.9530
8	5	966	.0051	1.9507
9	10	956	.0104	1.9462
10	7	949	.0073	1.9430
11	10	939	.0105	1.9384
12	9	930	.0096	1.9342
13	3	927	.0032	1.9329
14	6	921	.0065	1.9300
15	10	911	.0109	1.9253
16	5	906	.0055	1.9229
17	4	902	.0044	1.9210
18	0	902	.0000	1.9210
19	5	897	.0055	1.9186
20	7	890	.0078	1.9151
21	6	884	.0067	1.9122
22	8	876	.0090	1.9083
23	5	871	.0057	1.9058
24	4	867	.0046	1.9038
25	2	865	.0023	1.9028
26	4	861	.0046	1.9008
Total	221			

[a]This figure does not include renewed violence that occurred as "follow-up action" to the initial incident and was reported on the same report form.

† $p \leq .1$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. (One-tailed test). Symbols in brackets indicate that the hazard rate is significantly different from those for larger intervals only.

Figure 7.1 The log percentage survival without reoccurrence for initial incidents over a period of 26 weeks.



the straight line corresponding to random reoccurrence for around the first 4 weeks, then had a similar gradient for weeks 5-12, then generally a less negative gradient for weeks 13-26.

The weekly hazard rate for reoccurrence for the first week was significantly higher ($p \leq .001$) than for the other weeks and that for the second week approached significance ($p \leq .1$). When compared just with the weeks that followed, the rate for the second week was significantly higher ($p \leq .01$) as were the rates for the third week and fourth weeks ($p \leq .05$). It can be seen that the weekly hazard rates for week 1 (0.0351) was around 6 times as great as the mean weekly hazard rate for weeks 13-26 (0.0055) and around 12 times as great as the overall mean weekly rate of occurrence per house (0.0028). It appears, then, that the risk of a reported incident occurring showed around a twelvefold increase for the first week following another reported incident at the same premises. If this week was survived without incident, this risk was halved for the second week and further reduced for subsequent weeks survived.

A similar procedure was applied to the 56 incidents (5.18%) that were followed by a subsequent incident within 15 days (a fortnight, counting the day of the initial incident as day 1) at a mean daily hazard rate of reoccurrence of 0.0035. The numbers of days from initial to subsequent incidents at the same premises are shown in Table 7.2.

Table 7.2 Times between initial and subsequent violent incidents at the same premises that occurred up to 15 days apart

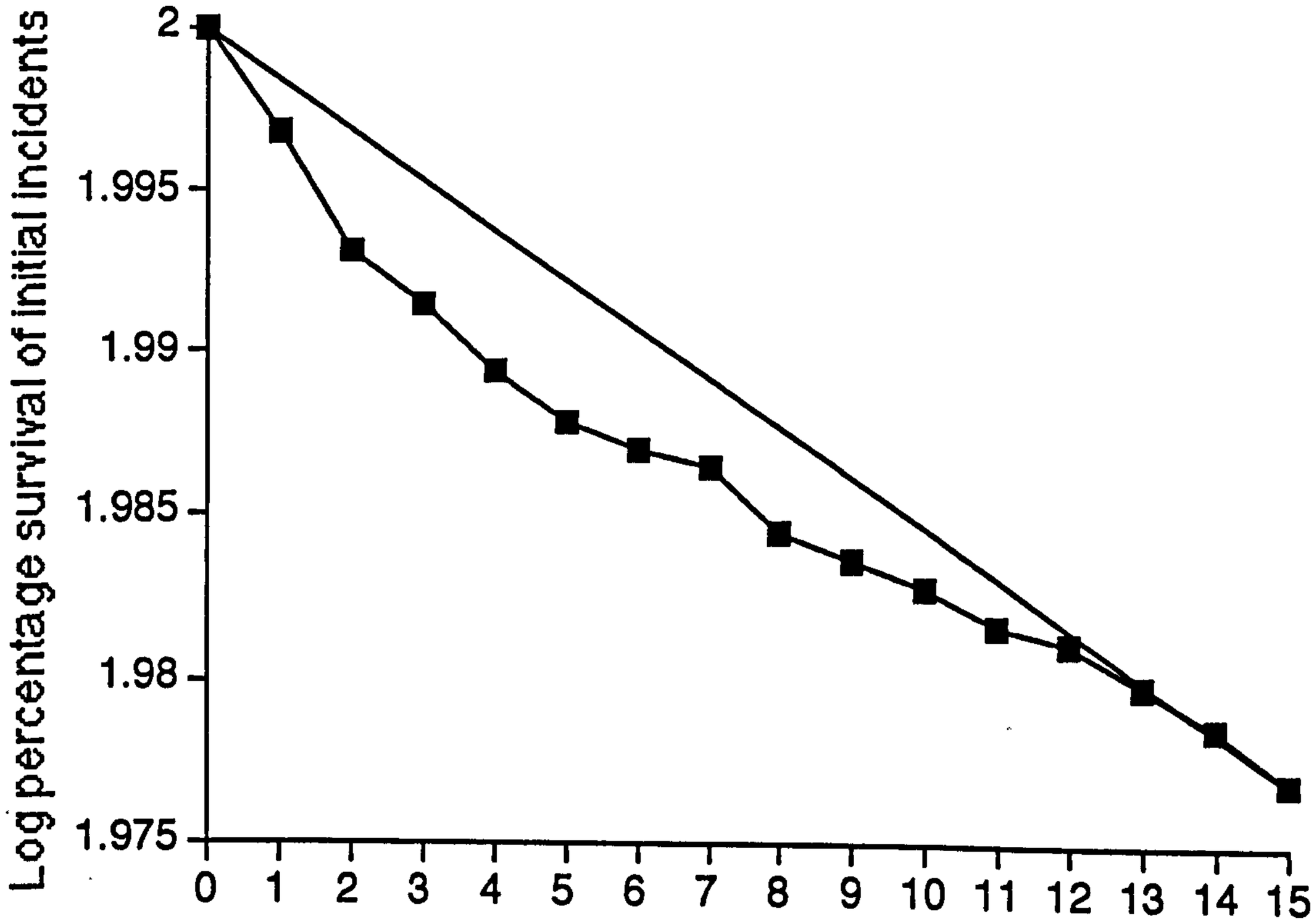
No. days since initial incident	No. cases subsequent incident occurred	No. cases subsequent incident *not* yet occurred	Daily hazard rate for reoccurrence (M = .0035; SD = .0021)	Log percentage survival
0		1082		2.0000
1	8[a]	1074	.0074*	1.9968
2	9	1065	.0084**	1.9931
3	4	1061	.0038	1.9915
4	5	1056	.0047	1.9894
5	4	1052	.0038	1.9878
6	2	1050	.0019	1.9870
7	1	1049	.0010	1.9865
8	5	1044	.0048 (*)	1.9845
9	2	1042	.0019	1.9836
10	2	1040	.0019	1.9828
11	3	1037	.0029	1.9816
12	1	1036	.0010	1.9811
13	3	1033	.0029	1.9799
14	3	1030	.0029	1.9786
15	4	1026	.0039	1.9769
Total	56			

[a]This figure does not include renewed violence that occurred as "follow-up action" to the initial incident and was reported on the same report form.

* $p \leq .05$. ** $p \leq .001$. *** $p \leq .0001$. (One-tailed test). Symbols in brackets indicate that the hazard rate is significantly different from those for larger intervals only.

The log percentage survival plot, shown in Figure 7.2, is again concave. The graph falls more steeply than the corresponding straight line graph for the first 3-4 days (including the day of the initial incident), the daily hazard rates for reoccurrence for the first two days being significantly higher

Figure 7.2. The log percentage survival without reoccurrence for initial incidents over a period of 15 days



($p \leq .01$) than for the other days. The plot also displays an increased negative gradient for the eighth day (i.e. the same day of the following week). The increased daily hazard rate for reoccurrence for the eighth day becomes significant ($p \leq .05$) when compared to the days still to come. However, the numbers of incidents occurring per day, by this stage, are very small and the conclusions must be tentative.

Together, these plots provide strong evidence of an increased risk of a subsequent violent incident being reported up to around 12 weeks following an initial incident. The risk of reoccurrence was higher in the first 2-4 weeks and particularly high during the first 3-4 days and again 1 week after the initial incident.

These results cannot be accounted for by the possible inclusion of a small number of premises that reported a very high frequency of reoccurrence throughout the study period. The average times between reported incidents for those houses that experienced 2 or more incidents are given in Table 7.3. It can be seen that only 8 premises displayed an average time between

Table 7.3 Numbers of violent incidents for premises that experienced more than one incident during the study period

No. incidents reported during study period	No. houses	Average no. weeks to reoccurrence
2	130	78
3	51	52
4	19	39
5	6	31
6	2	26
7	1	22
8	2	20
9	2	17
11	1	14

incidents within the 26-week reoccurrence time considered, and that none fell within a 15-day reoccurrence time. Further, when the 14 houses with the highest frequency of occurrence (i.e. 5 or more incidents in the study period) were excluded from the analysis, the pattern remained very similar in nature, as shown in Figures 7.3 & 7.4.

Figure 7.3 Log percentage survival without reoccurrence for initial incidents over a period of 26 weeks for houses experiencing 4 or less incidents

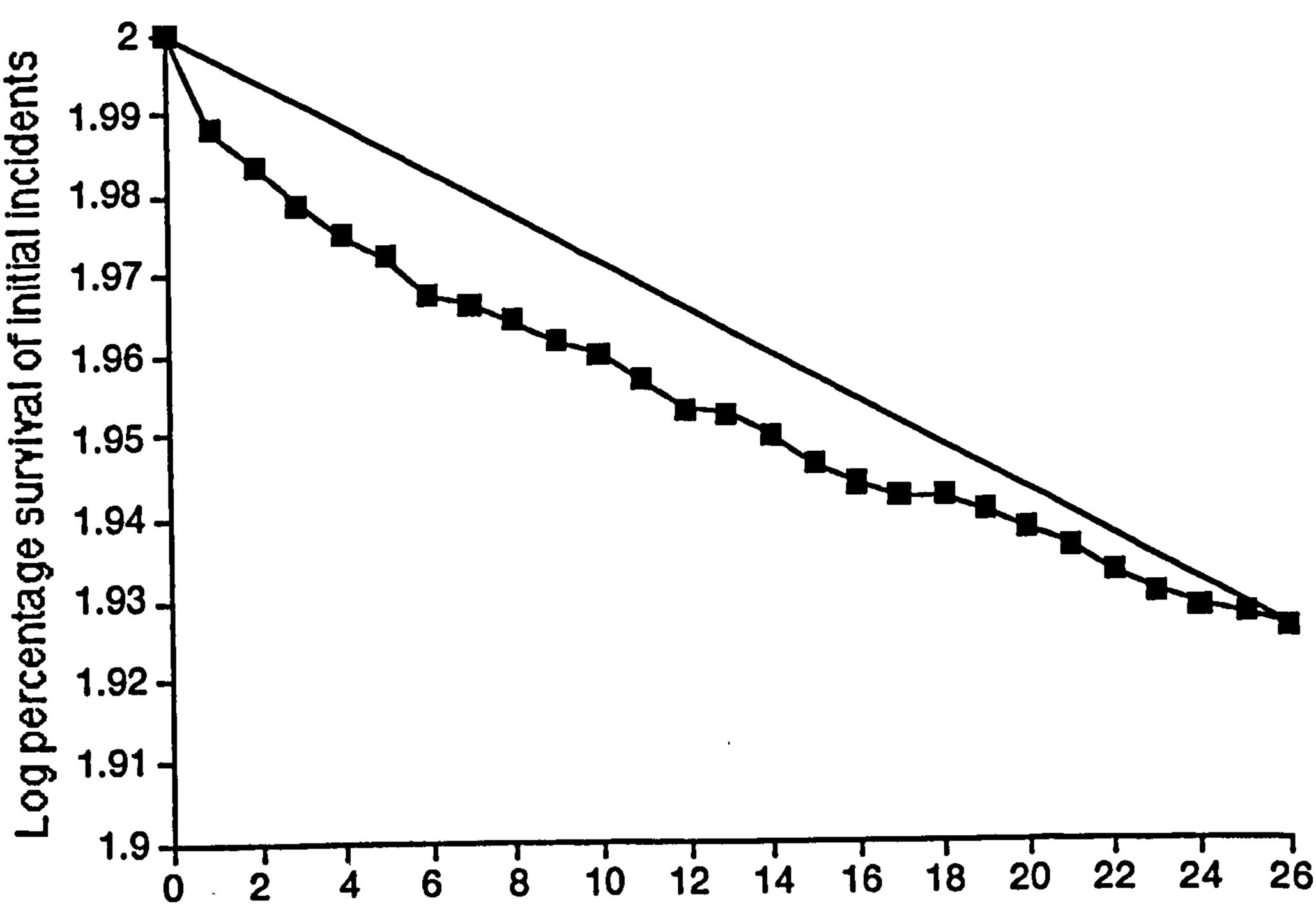
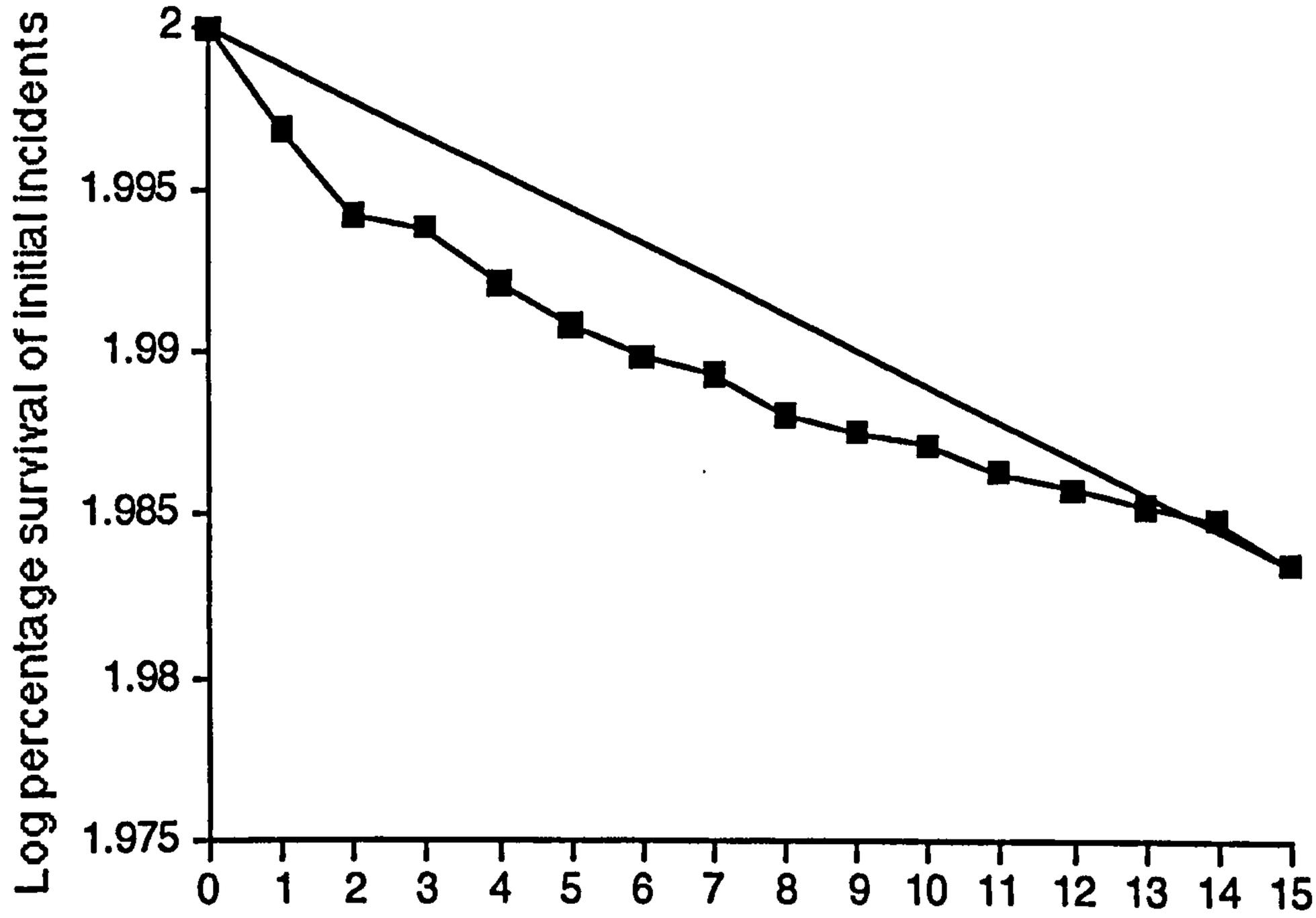


Figure 7.4 The log percentage survival without reoccurrence for initial incidents over a period of 15 days for houses experiencing 4 or less incidents



7.3 THE NATURE OF INITIAL AND SUBSEQUENT INCIDENTS

The second set of analyses aimed to explore the effect of any system memory found in the time interval analysis in terms of the nature of the initial and subsequent incidents in a pair.

7.3.1 Method

The same reported incidents were used to explore the nature of initial incidents that made a subsequent incident more likely. The characteristics of incidents that were followed by another incident within 26 weeks (*initial [followed]*) were compared to those that were not (*initial [not followed]*). To explore how the nature of incidents that followed other incidents might be affected, the characteristics of incidents that followed another incident within 26 weeks (*subsequent*) were compared to those that did not follow another incident within that time (*not subsequent*). To ensure accurate discrimination between subsequent and non-subsequent incidents within the study period, it was necessary to take account of incidents that occurred during the 6 months prior to the main study period, that is July to December 1991.

The characteristics of incidents were described in terms of 15 dichotomous variables, as shown in Table 7.4, that indicated the presence (1) or absence (0) of a particular feature in the report of an incident. These variables were chosen from those available from the system as representing general features of incidents in terms of what happened rather than characteristics of particular licensed houses or individuals involved. Also included was the seriousness score assigned by the reporting licensee. These variables are described in Table 7.4. The time between incidents at the same premises was represented by the variables "days to subsequent incident" and "days since initial incident".

Two main analytical techniques were used: survival analysis and correlation procedures. Survival analysis was used to examine the whole sample of initial incidents and the rates over time at which they were followed by subsequent incidents. This analysis compared sets of incidents according to control variables and so identified any characteristics of incidents that displayed significantly different reoccurrence patterns over the 26-week period. The statistical package SPSSx, which was used for the analysis, employs the actuarial method described by Berkson and Gage (1950) to compute the survival functions and utilises the Wilcoxon (Gehan) statistic (see Cox & Oakes, 1984; Kalbfleisch & Prentice, 1980) to determine whether groups differ significantly in terms of survival.

Pearson product moment correlation was used because all the variables were either dichotomous (0-1) (Bryman & Cramer, 1990: 238; Tabachnick & Fidell, 1996: 281) or their distribution approximated sufficiently to normal to be treated in this way: seriousness (N = 746, kurtosis = -.680, skewness = -.105) and days to subsequent incident/days since initial incident (N = 220, kurtosis = -.886, skewness = .594). The variables that were examined are given in Table 7.4. It is important to note that the variable "repercussion" relates to whether the incident report stated that the incident was directly linked to a previous problem event at the premises. This previous event might be a reported incident or might be an event that was not reported, perhaps because it was not, of itself, sufficiently serious.

Table 7.4 Variables used in correlational survival analysis

Variable	Description	Scoring
Descriptive variable		
Planned	Incident considered to be planned criminal activity, e.g. armed robbery	0 (absent); 1 (present)
Repercussion	Incident stated by reporting licensee to be linked to a previous problem at the premises (not necessarily a previously reported incident)	0 (absent); 1 (present)
Intervention	Staff intervened in the developing situation	0 (absent); 1 (present)
Threat	Incident included threats	0 (absent); 1 (present)
Fight	Incident included a fight or scuffle	0 (absent); 1 (present)
Attack on staff	Incident included a physical attack on staff	0 (absent); 1 (present)
Attack on customers	Incident included a physical attack on customers	0 (absent); 1 (present)
Attack on property	Incident included a physical attack on property	0 (absent); 1 (present)
Attack during ejection	Assailants made an attack while being ejected	0 (absent); 1 (present)
After fight	Fighting continued outside the premises after ejection	0 (absent); 1 (present)
After attack	Assailants attacked the outside of premises while leaving	0 (absent); 1 (present)
Return	Assailants, or their associates returned to premises later	0 (absent); 1 (present)

(continued)

Table 7.4 (continued)

Variable	Description	Scoring
Descriptive variable (continued)		
Staff injury	At least one member of staff injured	0 (absent); 1 (present)
Customer injury	At least one customer injured	0 (absent); 1 (present)
Damage to property	Property damaged	0 (absent); 1 (present)
Seriousness	Assessment of seriousness of incident, made by reporting licensee	0 (trivial) to 10 (the most serious you could ever imagine)
Timing variable		
Days to subsequent incident	No. days from initial incident to subsequent incident	1 to 183; 999 (more than 183 days)[a]
Days since initial incident	No. days since initial incident (for subsequent incident)	1 to 183; 999 (more than 183 days)[a]

[a]The value 999 was used simply to eliminate cases from the analyses. It did not, therefore, affect the means or distribution of the variables.

7.3.2 Results

The nature of initial incidents

Survival analysis produced information about the characteristics of initial incidents that affected the rates of reoccurrence. It was found that the rate of reoccurrence was decreased (Wilcoxon statistic = 5.468, $df = 1, p \leq .05$) for initial incidents in which the assailant made a physical attack while being ejected from the premises.

Incidents that were followed by another incident within 26 weeks (initial [followed]) were less likely to involve an attack during ejection ($r = -.0716$, $N = 1082$, $p \leq .05$) than were those that were not followed by another.

Initial incidents that involved a threat ($r = -.1398$, $N = 220$, $p \leq .05$) or in which assailants returned later within the initial incident ($r = -.1340$, $N = 220$, $p \leq .05$) were followed by a subsequent incident within a shorter time. Initial incidents that involved damage to property ($r = .1196$, $N = 220$, $p \leq .1$) were followed by a subsequent incident after a slightly longer interval.

The nature of subsequent incidents

Rates of reoccurrence were higher for those subsequent incidents that were reported as repercussions than for those that were not (Wilcoxon statistic = 20.198, $df = 1, p \leq .001$) and were lower for subsequent incidents that involved interventions by staff (Wilcoxon statistic = 4.079, $df = 1, p \leq .05$), attacks on staff (Wilcoxon statistic = 17.821, $df = 1, p \leq .001$), attacks during ejection (Wilcoxon statistic = 3.822, $df = 1, p \leq .05$), injury to staff (Wilcoxon statistic = 7.615, $df = 1, p \leq .01$), and injury to customers (Wilcoxon statistic = 3.689, $df = 1, p \leq .05$).

Subsequent incidents were more likely to be reported as repercussions than were other incidents ($r = .1332$, $N = 940$, $p \leq .001$) and were given higher seriousness scores ($r = .0936$, $N = 940$, $p \leq .01$). They were less likely to involve an attack on staff ($r = -.1380$, $N = 940$, $p \leq .001$), an attack on the outside of the premises while leaving ($r = -.0863$, $N = 940$, $p \leq .01$) or injury to staff ($r = -.0851$, $N = 940$, $p \leq .01$) and were marginally less likely to involve planned criminal activity ($r = -.0609$, $N = 940$, $p \leq .1$), intervention by staff ($r = -.0615$, $N = 940$, $p \leq .1$) or an attack during ejection ($r = -.0609$, $N = 940$, $p \leq .1$).

Subsequent incidents that occurred sooner were marginally more likely to be reported as repercussions (r = -.1209, N = 220, $p \leq .1$), were less likely to involve fights (r = .2247, N = 220, $p \leq .001$) and were marginally less likely to involve fights that continued outside after the assailants had exited (r = .1220, N = 220, $p \leq .1$).

7.4 DISCUSSION

As anticipated, the results clearly indicated that, when a violent incident was reported, there was an increased likelihood that a further incident would be reported within a few weeks. Although there can be no absolute certainty that this reflected the actual occurrence of incidents, as opposed to the way in which they were reported, the differences in character between the initial and subsequent incidents found in this study provide evidence that the results did not arise purely from a reporting effect.

Further, different reporting effects might have influenced the results in opposing ways. It might be argued, for example, that the increased reporting soon after an initial incident could be explained by a familiarity or accessibility effect, that is that a licensee who had recently been in touch, or was still in touch, with the security manager regarding one incident would be more familiar with the process and would find it easier to report again something that might otherwise have gone unreported. This effect would be expected to diminish over time and thus cause an increased reporting of incidents in the short term. However, it could equally be argued that the converse might be true. Licensees who had recently reported an incident might feel that reporting another one very quickly would give the impression that they could not control the premises and therefore they would not report incidents that they might otherwise have done.

Another explanation for the apparent clustering of incidents of violence could be specific periods or events that were triggering factors, such as Christmas or New Year. One licensee surveyed by Hillas et al. (1988), for example, stated that "The pub has a tradition for violence at Christmas." This, however, cannot be the explanation for the results found in this study because for only two of the pairs of incidents did both occur within the Christmas to New Year period.

Leaving aside any reporting effect, the results provided clear evidence of an increased risk of the reoccurrence of violence within 6 months once an initial incident had occurred. One fifth (20.3%) of all the reported incidents were followed by a further incident within 6 months (26 weeks). The risk was particularly great in the first few days following an initial incident and exactly one week later. The increased risk was statistically significant for up to 4 weeks and remained detectable for up to 12 weeks but diminished as the weeks progressed.

It has to be remembered that this increased risk demonstrated over the first few days was in addition to any continued or follow-up action reported on the same form as the initial incident. Such action has previously been shown to occur in around a quarter of reported incidents (Section 4.3.5). Taken together, these two sets of results provide an impetus to take very seriously the aftermath of violent incidents in terms of the increased likelihood that further violence will occur soon afterwards.

The only features of initial incidents that appeared to increase the likelihood of reoccurrence were (a) threats of further action and (b) return of the assailants more or less immediately to cause more trouble which was reported as part of the original incident. Both these were associated with reoccurrence after a short time interval. These findings confirm that staff need to be particularly alert for reoccurrence if threats have been made, that is, not all threats are empty threats. Although, as Borum et al. (1999) explain, there is a difference between *making* a threat and actually *posing* a threat, all threats need to be considered seriously. The finding that if assailants have returned within a few hours of the initial incident to cause further trouble, they are likely to return again during the next few days reinforces the need for increased and continued vigilance after incidents.

The main features of initial incidents that were associated with a decrease in the likelihood of reoccurrence were an attack during ejection and an attack on property. Damage to property and an attack on the outside of the premises while leaving had marginal effects. These findings might be rationalised as assailants having their feelings of aggression satisfied by an immediate physical outburst on the premises or while leaving, then feeling no need to take it further, or, alternatively, being afraid or ashamed to return. This does not mean, however, that staff do not need to be vigilant

after such a physical outburst because the survival analysis still shows high weekly hazard rates for the weeks following such incidents.

One salient feature of subsequent (reoccurrent) incidents was, not surprisingly, that they were more often seen as repercussions from previous problems at the premises than were other incidents. In general, they were also given higher seriousness scores than other incidents. The seriousness score is a useful, if crude, measure of the licensee's subjective evaluation of how serious the incident was. It might be speculated that there is a "mere frequency effect" in that licensees may begin to feel more vulnerable and at risk on the basis of repeated incidents, even though the subsequent incidents did not appear to be more severe on more objective grounds, such as attack on, or injury to, staff. From a practical point of view, this reinforces the need, when considering the psychological health of people involved in violent incidents, to treat subjective evaluations as seriously as more objective ones, as emphasised by Wykes (1994) and discussed in Section 5.2.

The finding that subsequent incidents were less likely to involve attacks on staff and injury to staff were a little surprising given that such incidents were more likely to be regarded as repercussions. Over the whole sample, correlation analysis indicated that incidents regarded as repercussions were marginally more likely to involve attacks on staff ($r = .0553$, $N = 1091$, $p \leq .1$). This indicates that there must have been a number of reported incidents involving attacks on staff which were regarded as repercussions from previous problems that had not themselves been considered sufficiently serious to be reported. Such a finding emphasises the need for staff to be alert for repercussive action after apparently minor incidents as well as after more serious ones.

Subsequent incidents were also less likely to involve injury to customers, interventions from staff, attacks during ejection and, marginally, planned attacks and attacks on the outside of the premises while leaving. These features were all negatively associated with incidents regarded as repercussions, so these findings were more in line with expectation. They could indicate that staff were reluctant to get involved in problems, having already experienced a previous incident, or that some reoccurrent incidents which were also repercussions had no obvious build-up but occurred as soon as the assailants entered, so that staff did not have time to intervene.

This study succeeded in its primary objective to provide evidence that, following a reported violent incident at a particular venue, the likelihood of further violence occurring at that venue is not constant over time but is particularly high during the first few days and weeks following the incident and diminishes over time. In other words, violent incidents within the public house social environment exhibit system memory with respect to their timing. This finding can be used in the prevention of violence at work by alerting staff to the period when there is an increased likelihood of violence occurring, which may be as long as 12 weeks after an initial incident.

It was not always clear from the incident reports whether the second incident was directly related to the initial incident. As previously mentioned, there are a number of ways in which it might be expected that further violence could be engendered. First, the original aggressors (or their victims) might want to complete "unfinished business" or to retaliate for treatment they thought to be unfair (Bradfield & Aquino, 1999; Skarlicki & Folger, 1997; Tedeschi & Nesler, 1993). Second, associates of either the aggressors or the victims might similarly retaliate. Third, other customers might "have a go" having been given the impression that this is a location where violent behaviour is the norm or can produce benefits to the perpetrator (Leather & Lawrence, 1995; Tedeschi & Nesler, 1993). Fourth, pub staff might be particularly anxious after an initial incident and overreact to any minor infringements of their house rules.

This chapter has extended the treatment of the violent incident as a dynamic process with discrete beginning and ending to consider the longer term effects carrying over from one problem situation to influence what happens at the premises in the future. The next chapter draws these findings together with the findings from the other studies described in the thesis and suggests implications for those working in the licensed retail trade, for other organisations and for academic research.

CHAPTER 8: MAKING USE OF THE FINDINGS

The research presented in this thesis pertains to the gathering, interpretation and use of information concerning work-related violence. It has considered incident reporting systems in particular, and has described work carried out by the author in an endeavour to maximise the usefulness of such a system. The KPP IRS, operating within the licensed retail trade, was established and developed by the author and her colleagues, the author having had overall responsibility for the system throughout the greater part of its existence (see Appendix 2). Research to extend the usefulness of the data obtained involved the adaptation of techniques from other scientific disciplines to provide innovative methods of investigating the dynamic nature of violent incidents. The methods and findings have implications at three broad levels: for academic research, for the organisational management of work-related violence and for the day-to-day management of licensed premises.

The information obtained has fallen into two categories, fulfilling the original aims of the research. First, the work has produced information about the reporting system itself, about the types of data that might usefully be obtained concerning work-related violent incidents and about analytical techniques that can be applied to such a system. This information includes:

- the benefits and limitations of the system as a diagnostic tool for the occurrence of violent incidents, and its use in risk assessment (Chapters 2 & 3);
- the use of complementary methods to enhance the effectiveness of the system (Chapter 2 & 3);
- the utilisation of a more detailed report form than is required by national reporting, in order to extract information about the nature of reported incidents that is useful for the design of effective risk reduction measures (Chapters 2 & 4);
- the evolution of a flexible and easily expandable coding scheme that makes extensive use of dichotomous variables to indicate the presence or absence of particular features (Chapter 4, Appendices 2 & 6B)
- the application of standard statistical techniques in exploring the nature of reported incidents (Chapters 4 & 5);
- the treatment of violent incidents as developing situations

(Chapters 4, 5 & 6);

- the usefulness of innovative pathway and survival techniques in extracting information about the development and timing of incidents (Chapters 6 & 7);
- examination of the lasting influence of incidents in terms of reoccurrence (Chapter 7);
- consideration of the seriousness of incidents as rated by the staff involved (Chapters 3, 4 & 5).

Second, the system has provided information about violent incidents within public houses that can be utilised in devising strategies to reduce the risks to the health and safety of staff. In addition, the quality and usefulness of this second type of information provides one means of assessing the benefits of the reporting system. Information obtained about incidents concerns:

- numbers of incidents that occurred (Chapter 3);
- characteristics of reported incidents (Chapter 4);
- the dynamic nature of reported incidents (Chapters 4, 5, 6 & 7);
- the relationship between the outcomes of incidents and their other features (Chapter 5);
- the seriousness of the reported incidents as perceived by the people involved in the incidents (Chapter 5);
- common pathways through violent incidents (Chapter 6);
- the timing of incidents, including a system memory effect on the likelihood of reoccurrence of incidents at the same premises (Chapters 4 & 7);

8.1 SUMMARY OF FINDINGS

All results have to be interpreted in light of the acknowledged limitations of incident reporting systems discussed in Section 2.2.3 including underreporting, the subjective viewpoint of the members of staff reporting, eye-witness reliability problems and the derivation of the information from problem situations that became aggressive or violent, not from those that were resolved successfully.

8.1.1 Numbers of incidents occurring

The limitations of an incident reporting system in terms of estimating numbers of incidents occurring were discussed in Chapter 2 and

demonstrated in Chapter 3 in relation to the KPP IRS. Appreciable underreporting of violent incidents was demonstrated via the subsidiary studies and had some adverse effects on the incident reporting system as a diagnostic tool. Although the specificity and positive predictive value were high, both the sensitivity and the negative predictive value were fairly low, indicating, as expected, a need to supplement incident reporting with other means of detecting a problem of violence within a public house. Sampling studies such as that piloted within ADR could be expected to provide a more complete picture of day-to-day problems of aggression and violence, in terms of the number of incidents that occur.

The demonstrated underreporting in the KPP IRS affected its ability to provide complete information for the assessment of risk. This supports the argument given in Chapter 2 that incident reporting systems should not be used as the sole basis for assessing the risk to staff from violent incidents, but should be supported by other methods of investigation. However, the reporting system is invaluable in establishing minimum values for the level of risk.

Subsidiary studies demonstrated that many more minor incidents occurred than more serious ones. The KPP IRS, however, did not receive greater numbers of reports of less serious incidents. The seriousness scores from the KPP IRS indicated, as expected, that numbers of incidents reported reflected more closely the numbers actually occurring for serious incidents than for minor incidents.

The limitations of incident reporting systems were particularly marked in the KPP IRS because of the diversity and scattered nature of the individual licensed houses, and the semi autonomous nature of the regional trading companies within ADR. Although these factors also impacted on the ability of the SEP Group to carry out the subsidiary studies effectively, the combination of methods illustrated what might be achieved by such complementary studies.

8.1.2 Nature of incidents

Chapter 4 provided a general overview of features of the incidents reported through the KPP IRS and began to consider their dynamic nature. Some of the conspicuous characteristics were :

- the predominance of incidents occurring at the weekend, late in the evenings, between 10pm and midnight, and when the premises were crowded;
- the disproportionate number of incidents around closing time;
- the predominance of assailants who were male and were estimated to be in the 21-30 age group;
- the high level of weapon involvement, particularly ordinary objects obtained from the pub;
- the increasing involvement of drug-related activity, through both usage and dealing;
- the predominance of reported incidents that began as misbehaviour by customers or conflict between customers rather than as planned criminal attacks;
- the expected high level of staff intervention;
- the high number of physical attacks on members of staff, particularly following intervention;
- the proportion of incidents that did not finish when the assailants exited the premises but continued in some form;
- the high level of physical injury, particularly to the face and head.

In Chapter 5, some features expected, intuitively and from the literature, to affect the outcome of incidents adversely were shown to do so, but others were not. Crowding was associated with a small increase in the likelihood of injury to customers. The number of assailants had a small effect on injury to customers, injury requiring medical attention and damage to property. The involvement of drugs had only a small positive effect on injury to staff. The sex of the assailant had the opposite effect to that anticipated, in that women assailants were associated with increased injury to staff. However, this was probably affected by reporting practice rather than actuality in that women may not have been regarded as a serious threat when they became aggressive unless they actually caused significant injury. The involvement of weapons had two differing effects. Weapons brought into the premises actually showed a negative effect on injury to staff. Objects obtained on the premises for use as weapons had a more detrimental effect on injury and on damage to property.

Some relationships were demonstrated between the outcomes of incidents and events that happened at the early stages of incidents. Initiation as an argument between customers, for example, demonstrated the expected

effects of increasing the likelihood of injury to customers, but decreasing the likelihood of injury to staff. Other initiating events (argument involving staff, misbehaviour, misbehaviour re closing, barred person entering) showed only small effects. As incidents developed, intervention by staff decreased the likelihood of injury to customers but increased the likelihood of injury to staff. Objects obtained on the premises for use as weapons had a detrimental effect, as already mentioned, on both injury and damage to property. The culmination of incidents displayed the greatest effects on physical outcome as would be expected, but the earlier events were shown to have sufficient bearing on the outcomes to warrant further examination for strategies to reduce the risks from violence, particularly the timing and manner of intervention by members of staff.

Licensees' perceptions of how serious incidents had been, although related to the physical outcomes, were also shown to be affected by other, less obvious features of incidents. These features included a weapon being brought into the premises, and an object being obtained from the premises to be used as a weapon. Other recorded features (i.e. the involvement of drugs, the number of assailants, a pre-planned attack, an attack on staff) also acted to increase the seriousness scores. However, the entire regression equation only accounted for 22% of the variance in the seriousness scores. This suggested strongly that other aspects of incidents, not specifically requested on the KPP IRF but noted by licensees, were also important in the perceptions of the people involved in them.

8.1.3 The incident as a process

The development of incidents as dynamic processes was investigated through the identification of individual steps and common pathways through the reported incidents. The logical pathway technique identified patterns within incidents and created a stable empirical pathway map that produced reliable quantitative information about how incidents progressed. Several findings stood out. First, the most common initiating event was misbehaviour by customers. Second, in over half the reported incidents, some injury or damage was sustained following staff intervention. Third, injury to staff was highly likely to have resulted from attacks on staff, often after they had become involved in a customer problem, usually by intervention rather than being involved from the start. Fourth, the most prominent single pathway through incidents (11.7% of incidents), was misbehaviour by customers followed by intervention by staff (before any physically violent act) producing an attack

on staff that resulted in injury to staff. A further important finding was that over a quarter of reported incidents included further action after the assailants had exited the premises and that, for almost all these incidents, it followed staff involvement. Further, the maps revealed that, in 11.5% of reported incidents, there was physical violence only after the assailants had exited.

Clearly, both the multiple regression analysis (Chapter 5) and the empirical pathway maps (Chapter 6) highlighted intervention by staff as a key factor in the development of potentially violent incidents. They did not, however, provide information about the ways in which staff intervened. Incident reports rarely revealed whether the situation was handled ineptly or aggressively or very skilfully. More detailed information needs to be obtained from other sources and utilising other methodologies, as discussed in Chapter 2. The importance of both the public house environment and the intervention style of the licensee are supported by other studies, such as those by Gibbs (1986), Graham, LaRocque, Yetman, Ross and Guistra (1980), Leather and Lawrence (1995), and Wells, Graham and West (1998).

8.1.4 Timing of incidents

As expected, increased numbers of reported incidents occurred at the weekend and late in the evenings following the times that were busiest for most premises. The three quarters of an hour or so around closing particularly stood out as a problem time. Beyond this expected pattern, it was found that, when a violent incident was reported, there was an increased likelihood that a further incident would be reported in the days and weeks that followed. In other words, violent incidents within the public house social environment exhibited system memory with respect to their timing. Although there can be no absolute certainty that this reflected the actual occurrence of incidents, as opposed to the way in which they were reported, differences in character between the initial and subsequent incidents suggested that the results did not arise purely from a reporting effect.

8.2 APPLICATION OF FINDINGS

The results have to be interpreted in the light of their derivation largely from problem situations that staff recognised as having "gone wrong", rather than from problem situations that were successfully resolved. They rarely include

the (probably numerous) occasions on which intervention by staff, for example, has averted potentially violent incidents. However, conclusions drawn from incident reporting perform a valuable function in highlighting the type of circumstances that warrant further investigation.

8.2.1 Implications for the licensed trade

Findings from the KPP IRS have been incorporated into licensee training within ADR (Leather, Beale, Lawrence & Maxwell, 1996), and are likely to be equally applicable for staff running other licensed premises. At the most straightforward level, the incident reports provide the frequency data that can inform licensees of features commonly involved in violent incidents and, therefore, times and situations in which to be extra vigilant. These include some aspects that appear "obvious", such as the preponderance of incidents at the weekends and late in the evening, and the involvement of young males, but these serve to remind licensees that the main risks derive from the ordinary, the everyday social interaction within the premises, not from planned criminal activity. Similarly, the weapons most often used in incidents, and related to injury, were ordinary objects picked up in the premises, rather than traditional weapons. Indeed, use of these ordinary objects was found to be predictive of injury to customers, of injury requiring medical attention and of damage to property. This reminds licensees to clear away glasses and to consider carefully the furnishings, equipment and decor in terms of their potential as weapons.

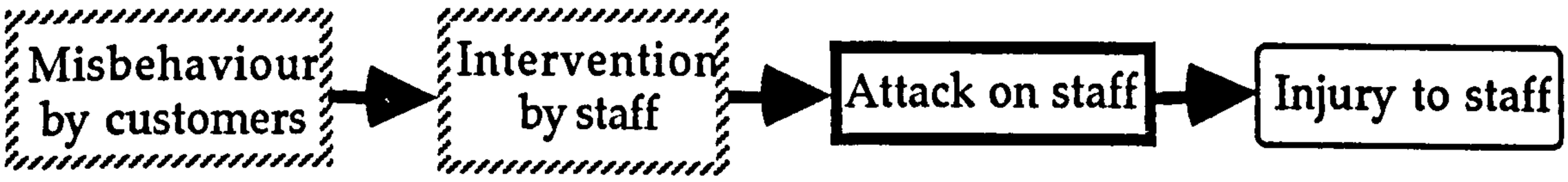
The increasing involvement of drugs reminds licensees that drug activity within their premises is not only illegal but also a potential source of aggression and violence, encouraging them to familiarised themselves with, and be vigilant for, the signs of drug-related activity and to seek safe procedures for managing such activity (see Section 1.4). Drug awareness was incorporated into the KPP training workshops as the problems surrounding drugs became apparent through the KPP IRS.

The findings from the more detailed analyses feed into the three levels of risk reduction within the premises: preventative, reactive and rehabilitative action. For example, the findings from the pathway analysis (Chapter 6) were translated into straightforward pointers for licensees to follow in reducing the risks and were incorporated into a short report prepared for ADR (Beale, Cox, Lawrence & Leather, 1996), a small section of which is given in Figure 8.1. Similarly, the licensee training in resolving conflict

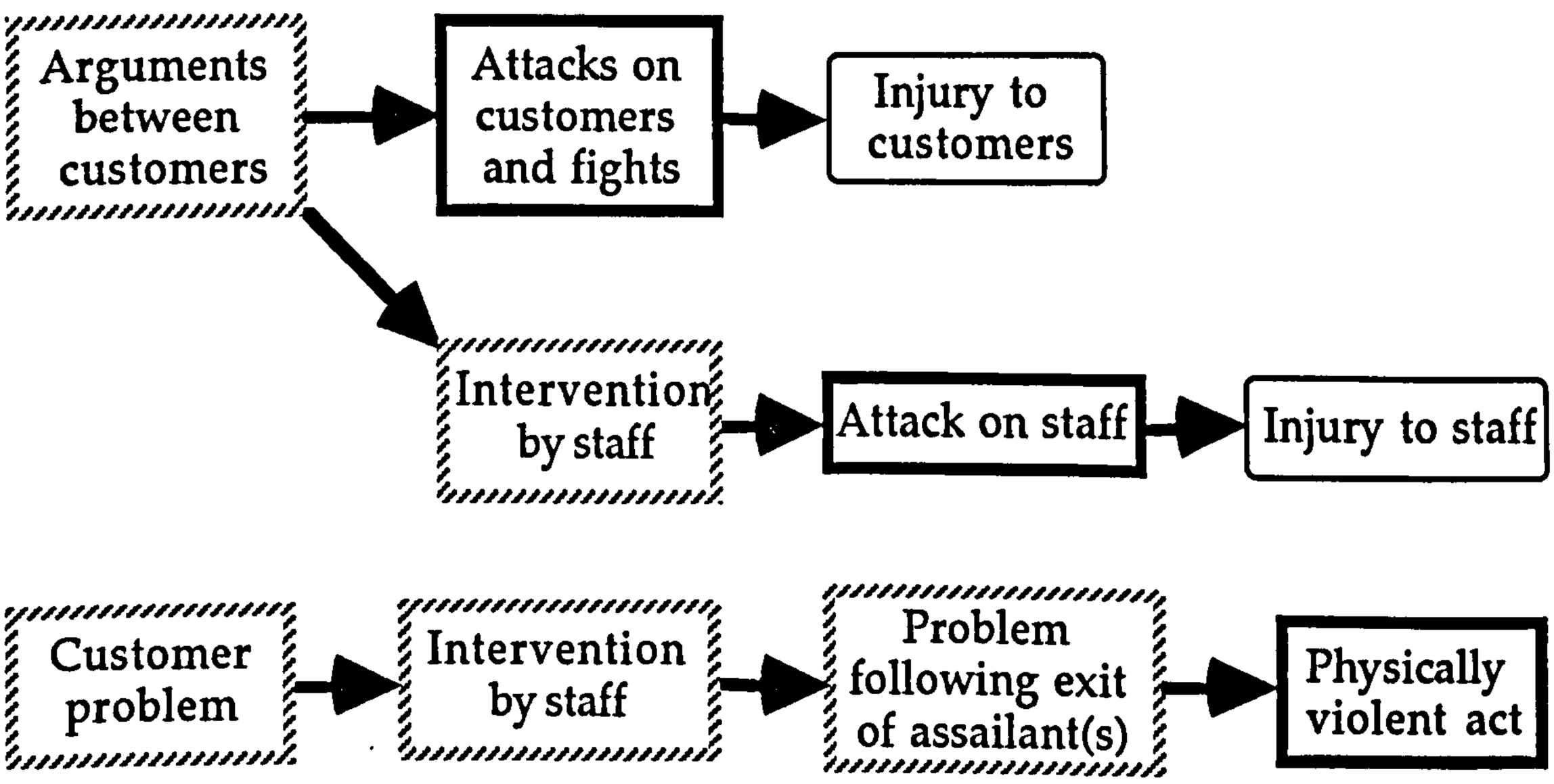
Figure 8.1 Excerpt from the report *What happened in Violent Incidents?* (Beale, Cox, Lawrence & Leather, 1996)

WHAT HAPPENED IN VIOLENT INCIDENTS?

The most common sequence of events in reported incidents was:



Other common sequences included:



WHAT CAN BE DONE TO REDUCE THE RISKS FROM VIOLENCE IN THE FUTURE?

REDUCING THE RISK OF CONFLICT OCCURRING

§ Letting customers know what behaviour is acceptable by

- ***Looking at the pub atmosphere:***

  Do the decor, music or noise levels encourage rowdy behaviour?

  Is the pub tidy, or does it look as though no-one cares what happens in it?

  Are the staff always polite and welcoming to everybody?

§ Eliminating situations where people get frustrated

- ***Looking at how games and entertainments are controlled:***

  Is there a proper queuing system for pool, darts, etc.?

  Are such systems obvious to new customers?

Figure 8.1 *(continued)*

§ **Eliminating situations where people get frustrated *(continued)***

- ***Looking at closing time:***

  Are closing time procedures well known to all customers?

  Do staff acknowledge people waiting to be served?

  Are there enough staff to handle the extra workload at closing time?

- ***Looking at the pub layout:***

  Is there room for people to move around without impeding others?

  Is the pool table or dart board, etc. in front of the toilet door, so that players are constantly being interrupted?

RESOLVING CONFLICT

§ **Intervening in problem situations**

- ***Knowing your own limits:***

  Is it safe to intervene or should the police be called?

- ***Learning how to intervene:***

  Have I been thoroughly trained in how to deal with conflict?
  (Ask your Area or Security Manager about Keeping Pubs Peaceful training.)

  Do I know how to calm people down?

  Do I know how to get people to come to an acceptable compromise?

§ **Protecting people**

- ***Protecting staff and customers:***

  Do I know how to position myself so I am less vulnerable to attack?

  Do all the staff know the emergency procedures?

  Is all emergency equipment easily accessible and checked regularly?

MANAGING THE AFTERMATH

§ **Looking out for further trouble**

- ***Being vigilant after conflict situations and violent incidents:***

  Have the assailants gone away?

  Are they, or their associates, likely to return?

§ **Looking after people**

- ***Being aware of both physical and psychological effects of incidents:***

  Are staff trained in first aid?

  Do I know about how people might react after violent incidents?

  Do I know how to deal with them and what help they might need?

(Leather, Beale, Lawrence & Maxwell, 1996) was amended to shift the main focus from intervening in arguments between customers to include far more about ways of challenging customer misbehaviour without eliciting aggressive reaction.

Initiation of incidents was found to be predominantly through misbehaviour by customers or conflict between customers. This suggests that effort should be put into the design and day-to-day running of the premises to reduce misunderstanding and competition between customers by, for example, ensuring that staff are friendly and get to know customers, making the house rules clear with respect to games such as pool, having sufficient staff to cope efficiently at busy times, and ensuring that the physical layout does not produce areas with conflicting uses. Although these recommendations are implicit in good hospitality management, their importance is enhanced by the realisation that they also impact on the prevention of violence and aggression.

In terms of reactive strategies, both the hierarchical multiple regression and the logical pathway analysis are very clear that intervention by staff was a key event in the development of incidents and impacted on the likelihood of staff being physically injured. This suggests that licensees need to be trained in safe, effective and non-aggressive intervention methods including calming, negotiating and closing skills, as well as protective strategies and emergency procedures. Such training was provided through KPP training (Leather, Beale, Lawrence & Maxwell, 1996). The ability to "close" an incident, enabling problem situations to be ended without anyone going away with a grievance, was shown to be important both in the number of incidents that included continuation after assailants had exited and in the increase in likelihood of further incidents occurring in the days and weeks following previous incidents.

In terms of rehabilitative strategies, that the analysis of the seriousness scores revealed a large variety of contributory features is particularly important for line managers, security and occupational health personnel having to support licensees and their staff coping with problems of aggression and violence. It is essential that they realise that the seriousness of an incident cannot be assumed from its physical outcome alone and that they have to be sensitive to other aspects that the people involved are concerned about. It is important that this issue is taken seriously since a stress audit of

licensees revealed that, although the occurrence of violent incidents was not the most common stressor, it was the one that showed the most detrimental impact on well-being, job satisfaction and intention to quit (Leather, Lee, Lawrence & Beale, 1995).

8.2.2 Implications for organisations

For organisations gathering information for risk assessment, the work described here emphasises the benefits and limitations of the reporting system that they have to maintain by law. It demonstrates that risk assessment should not rely on incident reporting alone, but should also utilise complementary methods of collecting information, such as sampling studies, interviews and staff surveys (Chapters 2 & 3).

However, the study has provided support for organisations to maintain internal violent incident reporting systems that go beyond the legal requirements of national reporting, as advocated by Beale, Cox and Leather (1996) and by Nigro and Waugh (1996). The type of investigative analysis reported here is only possible if an organisation's records cover a wider range of incidents and contain more details about those incidents than are required by national reporting.

Such enhanced systems provide a learning resource that allows much more detailed exploration of the nature of incidents than is possible from the standard reports complying to the RIDDOR 95 requirements. The collection of reports of incidents with less serious physical consequences extends the range of dangerous occurrences and behaviours that can be studied to discover frequently occurring problem situations to target for risk reduction. In addition, this wider reporting can be used to trigger supportive follow-up of incidents with little physical outcome but regarded as serious by staff and with, perhaps, a long-term psychological outcome. This approach begins to tackle the problem of the repeated "low level" violence that constitutes a chronic stressor for some workers, in addition to the acute stressor of a serious violent incident.

In order to be effective and maximise reporting, organisations need to "sell" the system to employees by targeting directly their reasons for not reporting (Chapters 2 & 3). They need be given clear information about which incidents they should be reporting and how to report them. The system needs to be straightforward to use and accessible in order that employees can quickly

and easily report incidents. They need to be made aware of the benefits of reporting in terms of how the organisation uses the information. Additionally, employees need to be reassured that they will not be judged on their ability to control violence according to the number of incidents they report, in other words, that it is "safe" for them to report. Establishment of a problem-solving culture rather than a blaming culture is essential for reporting systems to be really effective in identifying patterns within incidents and potential incidents.

Results from the incident reporting system need to be fed into the control cycle for the management of risk given in Figure 1.4. Statistical information about the number and characteristics of violent incidents, such as that derived in Chapters 3 and 4, allows identification of the problem and the situations that contribute to the risk from violence. The empirical pathway maps, along with the other detailed analyses, represent what happens before, during and after incidents, so provide the basis for a working model that can be utilised in the derivation of organisational intervention strategies. The incorporation of results from the KPP IRS into training for licensees and into the derivation of an organisational policy document, for example, illustrates the important role that such an incident reporting system can play within a total organisational approach to the management of work-related violence. Unfortunately, it was not possible, in this research, to use the KPP IRS directly in the final step of the control cycle, that is to evaluate interventions within ADR. Interventions could not be introduced uniformly or reliably throughout the organisation because of its complex management structure, so it was impossible to relate any changes in the reporting of incidents to specific interventions. In a more centralised organisation it should be possible to link reporting to interventions more closely in order to detect changes in the number or the nature of reported incidents.

Some of the interventions suggested by the results of this research encompass: preventative strategies including design of the physical environment, staff training and staffing levels; reactive strategies including laid-down procedures regarding intervention, emergency action and security measures; and rehabilitative strategies including compassionate response of management following incidents even if the incident does not appear serious from its physical outcome, and effective post trauma support to reduce the likelihood of psychological damage.

Effective post trauma care programmes need to be appropriate to the needs of the workers for whom they are intended, and should include preparing people to cope with violent incidents, as well as providing after-care (Health and Safety Executive, 1993a; Tehrani, 1995). Information from incident reporting is therefore essential to inform both the workers and the providers of the care programme. This preparation of workers, in addition to aftercare, also concurs with the U.S. national strategy for the prevention of work-related psychological disorders proposed by NIOSH (Sauter, Murphy & Hurrell, 1990). The components were (a) job design to improve working conditions; (b) surveillance of psychological disorders and risk factors; (c) information dissemination, education, and training; and (d) enrichment of psychological health services for workers.

8.2.3 Implications for academic research

Theoretical considerations

Although this thesis did not set out to test theories of aggression, rather to use theory to construct a framework by which to identify patterns in reported incidents, some observations can be made regarding the theoretical considerations. The usefulness of the theoretical framework outlined in Section 1.2 for the study of reported violent incidents has been demonstrated in the building of an heuristic on which to base conventional analysis (Chapter 5), in the development of new methods (Chapter 6 & 7), and in the different types of information that have been extracted. In addition, some of the findings support theory or indicate aspects of aggressive incidents that theory needs to address. However, it is important that the strengths and limitations of incident reporting are taken into account when such implications are formulated.

The self-report nature of the data might be seen as a drawback in psychological research. However, models of stress (see Cox, Griffiths & Rial-González, 2000) increasingly emphasise the role of perceptions in the experience of stress. In this situation, individuals' self-report carries more weight than objective assessment. "Stress arises when the person perceives that he or she cannot adequately cope with the demands being made on them or with threats to their well-being" (Cox et al., 2000: p. 42)

The large number of variables that had influence on the outcome of incidents supports Macintyre and Homel's (1997) conclusion that: "Violent occasions are characterised by subtle interaction of several variables". This

emphasises the complexity of this area of research and the inadequacy of any one simplistic explanation of violence and aggression.

Regarding the Novaco (1978) model described in Section 1.2.1, incident reports reveal little at the level of cognition and affect during an incident, but can provide information about apparent triggers and the sequence of observed behaviours. Escalation models such as Cox and Leather's (1994) are supported by the frequent occurrence of incidents that were seen to arise from the ordinary and escalate. Inappropriate behaviour, such as the use of abusive language or being rowdy, was seen to initiate many incidents. The appraisal of these as norm violations and subsequent intervention by members of staff would support a social interactionist perspective (Felson & Tedeschi, 1993a).

A variable that was seen to be critical in the development of incidents was intervention by staff. This is an area where theory needs to be harnessed in the training of the staff. The model shown in Figure 1.1, which combines a simplified Novaco (1978) model and the Cox and Leather (1994) model of escalation of incidents, can be readily explained and translated into everyday examples for training (Leather, Beale, Lawrence & Maxwell, 1996). Training should also take account of the restricted perceptions caused by alcohol such that an individual who has consumed alcohol may interpret a licensee's reasonable requests to be aggressive (Felson, Baccaglini & Gmelch, 1986). This effect of alcohol is consistent with the relatively high number of incidents that occurred around closing time when the task for the staff changes from service provision to service denial and control, but the legitimacy of this change may not be appreciated by intoxicated individuals.

It is important, for safe and effective intervention, that staff understand something about the levels of arousal that occur during the assault cycle, as described by Breakwell (1997). In particular, following the crisis phase, it takes time for arousal levels to reduce, so that individuals in this recovery phase are particularly sensitive to further triggers and trouble may easily flair up again. The aptness of this model is suggested by the high number of incidents in which assailants returned soon afterwards or attacked the outside of the premises (see Section 4.3.5).

Further, the study of the timing of incidents at the same premises (Chapter 7), revealed that one of the characteristics of initial incidents that was

related to an increase in reoccurrent incidents was continuation after the incident had apparently finished. This suggests that assailants who have once returned to cause more trouble are likely to return again at a later date. Possible explanations include continuing anger and reinforcement of aggressive actions by peer group or family approval (see Geen, 1990).

This finding emphasises the necessity for the theoretical consideration of violence not to treat aggressive interactions as isolated incidents but to take into account the impact of previous experiences directly related to the present situation. Previous experience or observation are taken into account in social learning theory, of course, but generally in a long-term or developmental context (see Geen, 1990). From a training point of view, it is important to consider the closing of incidents and what happens afterwards, as well as before (Leather, Beale, Lawrence & Maxwell, 1996). Useful models and theories need to address the question of the "baggage" carried over from even minor incidents by those involved and the mechanisms by which these might engender further violence either from the original aggressors, the victims or their associates, as discussed in Section 7.4. This is particularly important for situations where those involved are regular visitors to the premises, as has been discussed by Beale, Lawrence, Smewing and Cox (1999).

The finding that seriousness score was affected by presence of a weapon indicated that appraisal of the dangerousness of the situation, that is, what might have happened, was taken into account in the assessment of seriousness. This was despite the presence of a "real" weapon being negatively related to physical outcomes. An alternative explanation is that staff behaviour might modify when they become aware of a weapon so that they become more cautious. Here staff ensure that they de-escalate what they perceive as a dangerous situation rather than allowing escalation because they perceive that they are able to cope if the situation becomes physical, or because they do not anticipate physical violence. This explanation supports the social interactionist argument that, within a potentially aggressive interaction, individuals consider their behavioural options following some trigger, or change in a developing situation, and make a choice to achieve a particular goal (Felson & Tedeschi, 1993b). Similarly, it adds weight to Bjorqvist et al."s (1994) argument that individuals weigh up the benefits of an action against danger to themselves in carrying out an aggressive action.

Research considerations

The work described in this thesis has exploited a source of information about violent incidents that is often under-utilised in academic research, that is the operational incident reporting system. There are several potential advantages in that these systems, which organisations are obliged to maintain to comply with legal requirements, may be a rich source of real-life incidents described soon after they occur and potentially with a useful amount of detail. Incident reporting inhabits the middle ground between the gathering and classifying of epidemiological data, and the detailed study of individual incidents.

There are also a number of problems that need to be considered when working with commercial organisations, particularly when the research is conducted over many years in a large, disparate and fluid organisation such as ADR. Studies cannot always be as systematic as researchers would wish because, inevitably, commercial concerns are given a higher priority than such research. Changes in organisational structure, in priorities and in personnel impinge on the researcher's ability to sustain systematic research, as exemplified in Chapter 3. Also access to staff, although agreed with senior managers, may not always materialise in practice because of geographical remoteness or time pressures for the staff involved.

Despite the limitations, this work has demonstrated that, if carefully designed and treated in imaginative ways, a reporting system can provide information at a population level that cannot be obtained from other sources. The data obtained from incident reporting systems are different from those normally gathered in psychological research. Analysis beyond the basic frequency information that is conventionally obtained requires importing and adapting methodologies from other areas of science. Several aspects of the work break new academic ground. First, the work extends the treatment of the violent incident as a dynamic process by examining the outcome of incidents in terms of features that occur during early stages (Chapter 5), by seeking common sequences of events through incidents (Chapter 6) and by investigating the effects of incidents on what happens in the future at the same premises (Chapter 7).

Second, the technique of logical pathway modelling (Chapter 6) is an innovative adaptation of sequence analysis, devised by the author, which might be applied to incidents in other settings. The detailed logical pathway

model (Figure 6.4) is likely to apply within similar settings although the empirical pathway maps derived from it would vary. The outline model (Figure 6.3) might be applied to other settings where customers or clients interact in the workplace, such as schools, leisure centres and hospital accident and emergency departments. The general model (Figure 6.1) and technique might be applied to a much wider variety of situations.

Third, the measure of the seriousness of incidents as perceived by those actually involved, although crude, is innovative in that such a measure does not appear to have been considered in other published research into work-related violent incidents. The results reveal that the seriousness cannot be assumed from the physical outcome alone, but that many other features are taken into account (Chapter 5). This is an area that invites much more systematic research, particularly in view of the importance of perceptions in the development of psychological injury (Barling, 1996; Brady, 1999). It might be possible, for instance, to develop a simple non-clinical screening measure to be used in incident reports to identify incidents from which people might experience the symptoms of post traumatic stress. This would be most useful regarding incidents that appeared objectively to be minor, but that were very disturbing for some or all of the people actually involved.

Fourth, investigation of the timing of incidents (Chapter 7) took a longer term approach to the problem of violence in public houses, as advocated by other researchers in the field (e.g. Gibbs, 1986). The investigation extended the treatment of the violent incident as a dynamic process with discrete beginning and ending to consider effects carrying over from a problem situation to influence what happens in the premises in the future. The demonstration that the likelihood of further violence occurring at the premises where a reported incident had occurred was greatly increased, then declined slowly over the days and weeks following, appears to be the first time that such a system memory effect has been recorded. It confirms the observations of licensees surveyed by Hillas, Cox and Higgins (1988). Such findings suggest two possible extensions of the work. Log survival analysis itself could be used in the same way to examine the timing of incidents in other settings, such as schools, residential homes or psychiatric wards to examine the generalisability of the system memory effect. In addition, the finding of a system memory effect prompts the modelling of the worksite as an open system with a dynamic violence potential. This work, which is presently being developed, will go beyond the approach of Andersson and

Pearson (1999) and O'Leary-Kelly, Griffin and Glew (1996a) who advocate treating the staff within the organisation as a system with respect to aggression and violence. It will examine the effects of different subsystems including staff, customers, equipment and tasks, within the physical and social environment, and will utilise results from incident reporting to translate the model into checklists of questions to use in a risk reduction exercise for minimising the violence potential at a worksite (see Beale, Lawrence, Smewing & Cox, 1999).

These considerations of the achievements of the work, as well as the potential for further development of incident reporting and the ideas and models that have emerged, mark this research out as worthy of attention from all those concerned with the health and well-being of people at work, and their organisations.

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APPENDIX 1: LIST OF PUBLICATIONS

PUBLICATIONS ARISING DIRECTLY FROM THE REPORTED STUDY

Journal articles

Beale, D., Clarke, D., Cox, T., Leather, P. & Lawrence, C. (1999) System memory in violent incidents: Evidence from patterns of reoccurrence. *Journal of Occupational Health Psychology*, 4(3), 233-244. *(relates to Chapter 7)*

Beale, D., Cox, T., Clarke, D., Lawrence, C. & Leather, P. (1998) Temporal architecture of violent incidents. *Journal of Occupational Health Psychology*, 3(1), 65-82. *(relates to Chapter 6)*

Beale, D., Cox, T. & Leather, P. (1996) Work-related violence - is national reporting good enough? *Work & Stress*, 10(2), 99-103. *(relates to Chapter 2)*

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Beale, D. (1999) Monitoring violent incidents. In: P. Leather, C. Brady, C. Lawrence, D. Beale & T. Cox (Eds). *Work-Related Violence: Assessment and Intervention,* pp. 69-86.. London: Routledge.

Lawrence, C., Beale, D., Leather, P., & Dickson, R. (1999) Violence in public houses: An integrated organisational approach. In P. Leather, C. Brady, C. Lawrence, D. Beale & T. Cox (Eds) *Work-Related Violence: Assessment and Intervention*, pp. 126-143. London: Routledge. *(major contribution)*

Invited conference papers

Beale, D., Clarke, D., Cox, T. & Leather, P. (1999) System memory: A new concept for studying patterns in violence. *10th Montreux Congress on Stress*, Montreux, Switzerland, March.

Beale, D. (1999) Managing work-related violence: Monitoring the problem. *Work-Related Violence: From Theory to Practice*. University of Leicester, February.

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Beale, D., Leather, P. & Cox, T. (1994) The role of the reporting of violent incidents in tackling workplace violence. *Proceedings of the IVth Annual Conference on Safety & Well-being at Work: A Human Factors Approach*, Loughborough University of Technology, 138-151.

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Journal articles

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APPENDIX 2: DEVELOPMENT OF THE KEEPING PUBS PEACEFUL INCIDENT REPORTING SYSTEM

A2.1 THE "KEEPING PUBS PEACEFUL" PROJECT

A2.1.1 Background information

The SEP Group worked with Allied Domecq Retailing (ADR), the major international food and drinks retailer, between 1987 and 1999, to examine and combat violence within their licensed houses. ADR operated around 4500 licensed premises spread throughout England, Wales and Scotland. These comprised a wide variety of public houses in terms of size, style, location and clientele. Approximately 2500 of these houses were run by managers and staff who were employees of the company. ADR was previously named Allied Breweries (until 1993) then Allied-Lyons Retailing (1993-1994), but will be referred to as ADR throughout.

When the collaboration with the SEP Group began, ADR's public house operation was essentially organised as six semi-autonomous regional trading companies, two of which amalgamated in 1993. In 1995, ADR underwent a major reorganisation to form two main nationwide trading companies, Allied Domecq Inns (ADI) and Allied Domecq Leisure (ADL), according to type of premises. ADR retained this structure throughout the rest of the period covered by the work presented in this thesis, that is until late 1998.

A2.1.2 The integrated strategy

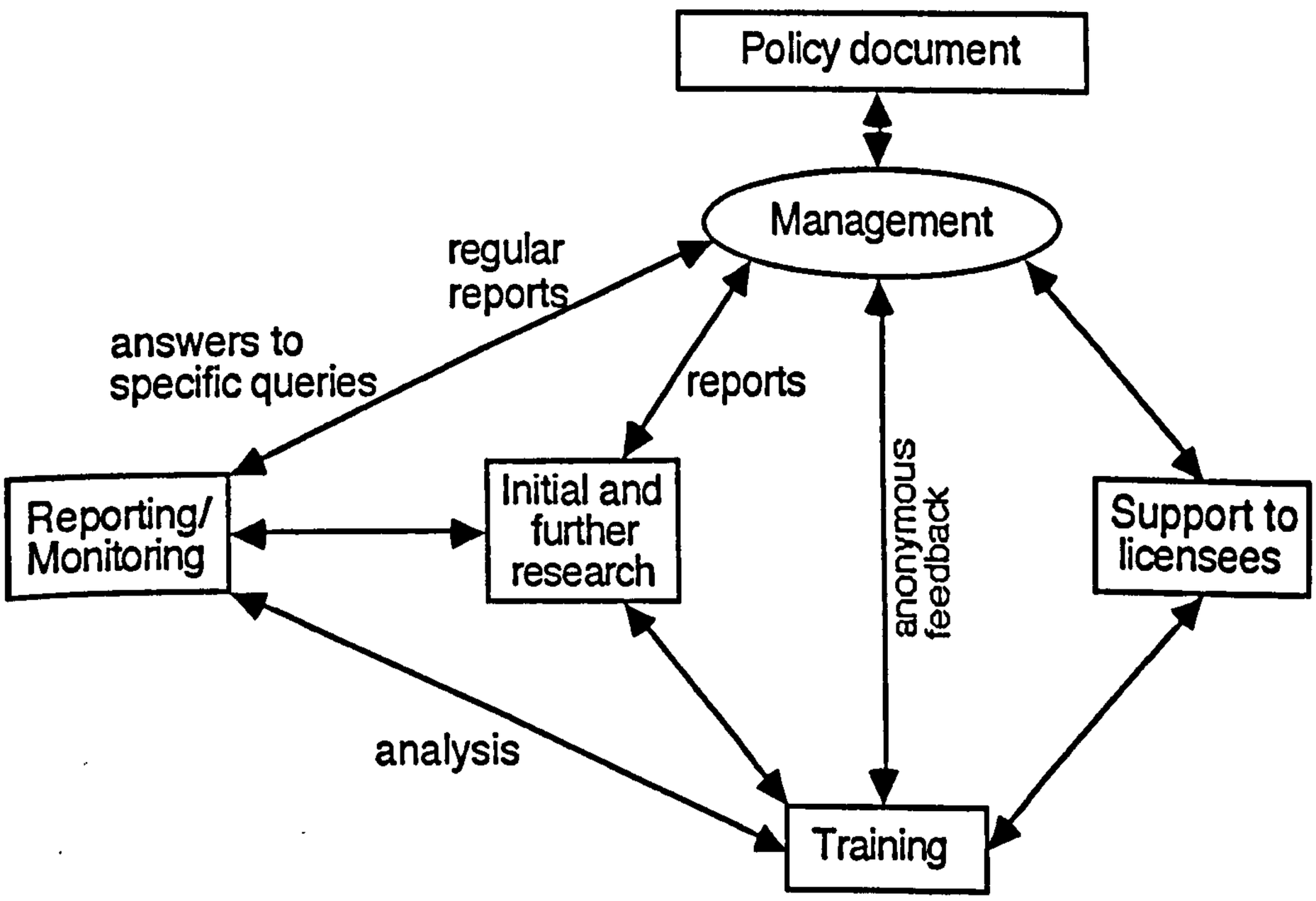
The overall strategy employed by the SEP Group was based on the concept of the control cycle for risk management and the integrated organisational approach to the management of work-related violence, both of which are described in Section 1.2. Within ADR, the measures that involved the SEP Group were implemented within the Keeping Pubs Peaceful (KPP) project and fell into three categories:

1. *Problem identification and analysis* encompassed initial investigation, subsequent research studies and the incident reporting system, and provided recommendations regarding measures to reduce risk.

2. *Organisational response* included adoption of a formal organisational policy, and implementation of systems for training, incident reporting and post-incident support.
3. *Evaluation* included scrutiny of the training and the post-trauma support.

All the measures implemented were seen as interdependent, with procedures for continually feeding information back to each other and to management, as outlined in Figure A2.1. A more detailed overview of the work carried out with ADR is given by Lawrence, Beale, Leather & Dickson (1999).

Figure A2.1 Outline of the Keeping Pubs Peaceful (KPP) project



A2.1.3 Problem identification and analysis

Initial investigation

Initial research was conducted within the London area during 1987-1988 to determine the nature and extent of the problem of violence in public houses (Cox, Boot, Higgins & Hillas, 1988; Hillas, Cox & Higgins, 1988). Information was gathered via questionnaires, interviews and existing incident reports. Although it was found that the majority of public houses experienced little violence on a regular basis, many managers reported that violence occurred in cycles, making quantification difficult. The results

revealed that many licensees were clearly working and living under threat of violence even if it did not always materialise as actual physical assault.

Three of the main recommendations from this research were (i) the establishment of an enhanced reporting system for violent incidents, (ii) training for licensees in the management of violence, and (iii) the provision of adequate post incident support for licensees. The recommendations were all implemented within ADR. The SEP Group was primarily responsible for the design and implementation of the first two of these and has been involved with post incident support in an advisory capacity.

Incident reporting

The Keeping Pubs Peaceful Incident Reporting System (KPP IRS) was established in 1988 and continued until 1998. Reports of violent incidents were sent to the Incident Report Centre (IRC) at Nottingham where details were entered on the database. Results of the analyses were submitted to ADR either as summary reports or as short reports concentrating on particular aspects of violent incidents. ADR personnel could also ring up to ask for specific information from the database. Results were also incorporated into the KPP training workshops. The KPP IRS is described in detail in Section A2.2 and following chapters.

On-going research

Throughout the period of collaboration, the SEP Group conducted fundamental research on violence in licensed premises, particularly regarding the effect of the pub environment on people's judgement about violent incidents and licensees (see, for example, Leather & Lawrence, 1995; Lawrence & Leather, 1999). In addition, further studies were carried out to up-date and extend the initial investigations within ADR. These included:

- 1994: Follow-up of the initial 1987 study. This was a questionnaire survey of all the licensees and area managers within the London area designed to mirror and enhance the 1987 survey and to detect changes over time (Dickson, Leather, Beale & Cox, 1994b). It particularly provided information about the beneficial effects of support from within the company (Leather, Lawrence, Beale, Cox & Dickson, 1998) and the adverse effects of the fear of violence on licensees (Leather, Beale, Lawrence & Dickson, 1997)

- 1995: Stress audit. This was designed to ascertain the principal sources of stress for ADR staff, sources of support and methods of coping (Leather & Lee, 1995; Leather, Lee, Lawrence & Beale, 1995). This indicated that, although violence was not the most common source of stress, it was the one most closely related to the negative outcomes of reduced job satisfaction, poorer well-being and a greater intention to quit the job.

- 1996: Incident diary study. This sampling study was designed to provide more information about the number and type of incidents that licensees and their staff experienced but did not report through the KPP IRS.

A number of other studies were designed to extend these and related investigations. However, although they were agreed and developed in collaboration with ADR, they were not implemented because of last minute operational considerations within ADR.

A2.1.4 Organisational response

Company policy

Between 1992 and 1998 company policy on violence was advanced by the KPP Working Group on Violence which consisted of senior personnel managers, trainers, occupational health and safety advisers, area managers, security managers and a member of the SEP Group (Dr Phil Leather). Dr Leather was responsible for writing the ADR policy document on the management of violence, in conjunction with the occupational health adviser.

Training

KPP training for licensees and their managers regarding the management of violence was on-going within ADR from 1989 to 1998. 2-day KPP Training Workshops were devised and developed by the SEP Group. Initial development was carried out during 1989 to 1991 (e.g. Cox, Farnsworth, Leather, Beale, Cox & Boot, 1989). The training was evaluated in 1994 (Dickson, Leather & Beale, 1994). The KPP training format and materials were revised during 1996 to 1997 (Leather, Beale, Lawrence, & Maxwell, 1996) and a 4-day Training the Trainer course was devised and implemented (Leather, Lawrence, Beale & Maxwell, 1996b). Involvement of the SEP Group in delivery of training was on-going throughout the project,

including the training of ADR trainers and other personnel to deliver KPP workshops.

Post-incident support

The ADR policy document provided for all licensees reporting a violent incident to be visited by their area manager and regional security manager to talk to staff, listen and reassure, to assist with practical problems and to assess whether a psychological debrief was likely to be required. Debriefing was carried out by a trained member of staff and referral to more specialist post-trauma counselling was available. Provision of such support was primarily the responsibility of the occupational health adviser. The SEP Group acted in a purely advisory capacity.

A2.1.5 Evaluation

Evaluation of the measures implemented has been spasmodic because of operational considerations within ADR. However, the KPP training was evaluated in 1994 (Dickson, Leather & Beale, 1994) and was found to be effective in modifying some attitudes held by licensees regarding violent incidents. Evaluation of the post-incident support was also carried out in 1995 (Rodgers, 1995).

A2.2 DEVELOPMENT OF THE INCIDENT REPORTING SYSTEM

A2.2.1 History of the incident reporting system

When collaboration began between the SEP Group and ADR in 1987, one of the first exploratory investigations to be carried out was the examination of reports of recent violent incidents (Hillas & Cox, 1987). The SEP Group researchers recommended that a more detailed report form and a common method of reporting for all the trading companies be introduced in order to collect more useful detail about the nature of incidents that occurred (Cox & Hillas, 1988). The introduction of a pilot form KPP IRF 1/88, designed by the SEP Group, and the establishment of the Incident Report Centre (IRC) at Nottingham in 1988 marked the beginning of the KPP IRS (Cook & Cox, 1988).

The definition of violence that was adopted for the reporting of incidents (Farnsworth, Beale & Cox, 1989) was:

> Any behaviour deliberately intended to damage staff or customers (or pub/brewery property) either physically or psychologically (through abuse or threat).

This definition was intended to generate information about as wide a range of incidents as possible by focusing on behaviour rather than just on outcome, in contrast to RIDDOR 95, as discussed in Section 2.2. It was hoped that this would encourage licensees to report some "near misses", that is, potentially violent incidents that were managed successfully, as discussed in Section 2.2.3 and explained in the publicity leaflet (see Appendix 3). The definition specifically included non-physical violence to encourage a recognition of the importance of psychological damage as well as the more obvious physical injury. It also included attacks on property as well as on people, since these can be closely associated, as discussed in Section 1.3.2.

Reporting of violent incidents through the KPP IRS took some time to be fully established throughout the trading companies but increased alongside the KPP training introduced in 1990-1991 and the distribution of explanatory leaflets to licensees (Appendix 3). From 1992 until the middle of 1995, reporting was fairly stable in terms of numbers, but the major reorganisation of ADR in autumn 1995 caused disruption to the system. Reporting recovered into 1996. In April 1996 the requirement under RIDDOR 95 for certain violent incidents in public houses to be reported to the local authority came into force. Although the SEP Group had requested to be involved in the necessary changes to violent incident reporting, a separate system was independently developed from the existing accident reporting system in ADR. The two systems running in tandem caused extra work for the regional security managers responsible for filling in the report forms. Reporting through the KPP IRS inevitably declined through 1997. In 1998, the decision was taken to terminate reporting through KPP IRS and to develop a comprehensive reporting system within ADR using the SEP Group as advisers.

A2.2.2 Incident reporting procedures

During the study period, when a violent, or potentially violent, incident occurred at an ADR managed house, the licensee was expected to contact the company and report the incident. The recommended initial contact varied both between constituent companies and over time, but has included

security departments, area managers and personnel departments. Most recently, the initial contact was the health and safety department during office hours and the security monitoring station out of hours. The initial contact followed established procedures to alert other relevant departments and personnel within ADR so that they could provide appropriate support to the licensee. When the security department was alerted, a regional security manager talked to the licensee either by telephone, for an obviously minor incident, or by visiting the premises, for a more serious incident. The regional security manager was responsible for completion of the KPP IRF either directly by the licensee, or by himself in consultation with the licensee and any other staff involved in the incident. A copy of the completed KPP IRF was sent to the IRC at Nottingham.

Instructions for filling in the KPP IRF were distributed to security departments along with summary reports (see, for example, Beale, Dickson, Farnsworth, Leather, & Cox, 1992). A 1-day information and training course was also provided by the SEP Group for those people who were responsible for completing the forms (see Beale, Lawrence & Leather, 1995). Such instruction and training were deemed necessary in order to:

- maintain high standards of form completion by making security personnel more aware of the use made of the information and allowing them to raise problems with completion;
- ensure that security personnel used appropriate sensitivity when eliciting information from people who had recently experienced a violent incident, particularly in asking for a seriousness score for the incident.

A2.2.3 The Incident Report Centre (IRC)

When the completed KPP IRFs were received by the IRC, they could be read by all members of the team to familiarise themselves with the incidents occurring within ADR. This allowed them to contribute effectively to training, to relevant research or investigation, or as consultants to higher management within ADR.

The KPP IRFs were then coded, usually by the author, and put into resource storage so that they could easily be retrieved at a later stage by the team but were not available to other people. The coded data were added to a database held on the School of Psychology SUN computers and analysed using the statistical package SPSS. The most recent version was SPSS for

Unix, Release 6.1 (Solaris 2.3) held on the SUN SPARC computer at the School of Psychology at the University of Nottingham.

Approximately every six months a summary report was produced, containing the results from analysis of the database, comments from the report forms and the implications of the findings for ADR personnel. Around 50 copies were sent to directors and senior managers in ADR and its constituent trading companies, to personnel managers, to security personnel and to company trainers. Shorter reports concentrating on particular aspects of incidents, such as weapons or drugs, were also produced. These reports are listed in Appendix 1.

Short reports were also produced in response to specific queries from ADR personnel. These varied from quick verbal reports given over the telephone to substantial documents derived from analysis of the database followed by examination of retrieved incident reports to obtain further details.

The incident report system was never static but evolved continuously. Changes to the report form itself and the arrival of an ever broadening range of reported incidents ensured that the coding scheme and procedures had to be under constant review. This process of review is incorporated into the procedures at the IRC shown in Figure A2.2.

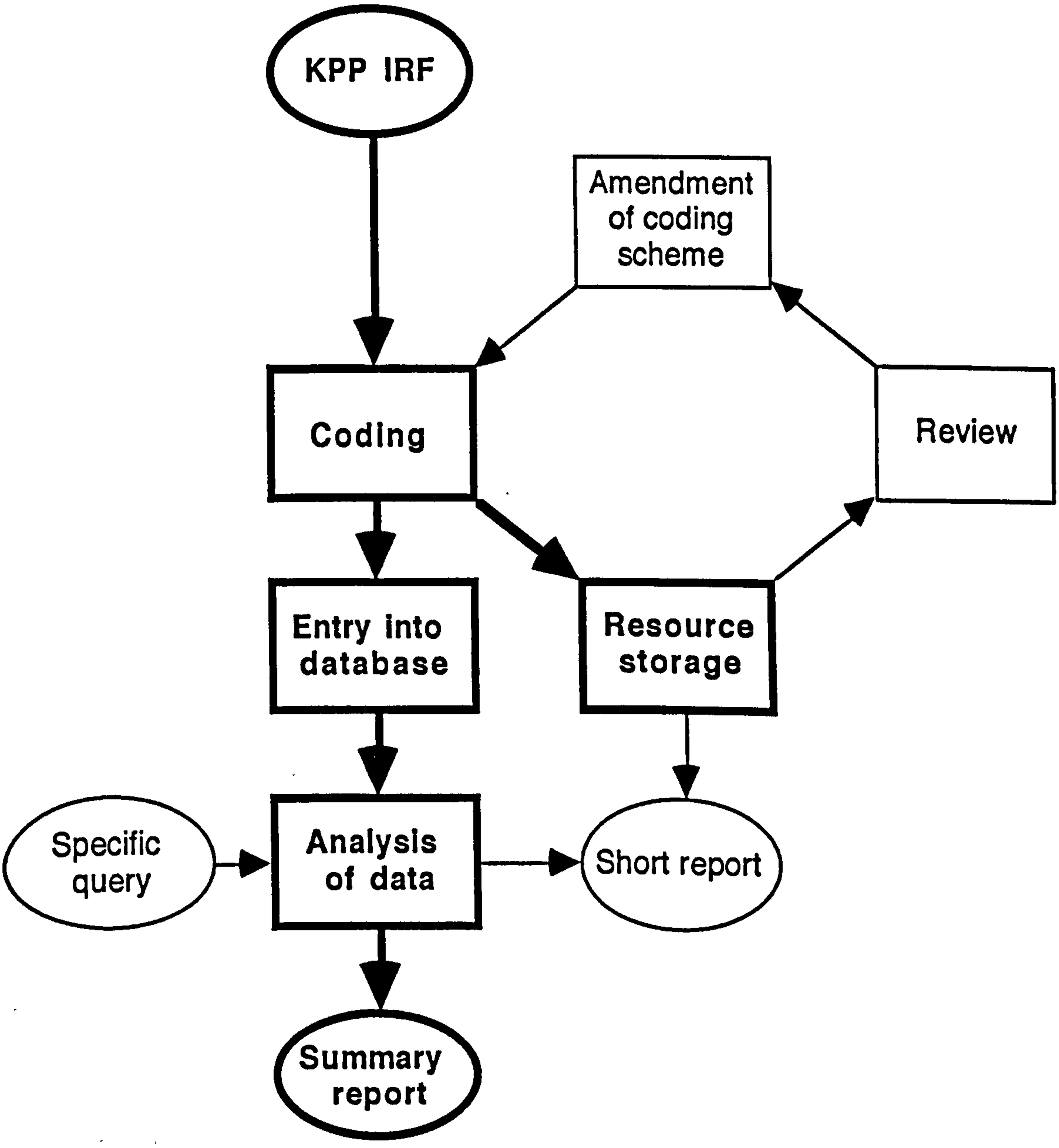
A2.2.4 The incident report form (KPP IRF)

Although the report form in use by ADR (Taylor Walker) in 1987 was similar to that used by the HSE (1987), it did not provide sufficient information about the nature of the violent incidents on which to base recommendations for effective intervention strategies. New 4-page pilot forms were designed by the SEP Group in 1988 to provide a wider information base while being consistent with the forms that they replaced (KPP IRF 1/88: Cook & Cox, 1988).

The author joined the SEP Group at this point and progressively modified the form. At no stage were major modifications made to the incident report form. In a system operated by so widely dispersed employees, it is important not to implement changes too radically or too often, to avoid confusion. Over the years, changes to the form were required to:

- accommodate changes in the law, e.g. relating to opening hours for public houses;

Figure A2.2 Procedures at the Incident Report Centre.



- clarify both questions and responses;
- allow use of the form by ADR for insurance purposes;
- obtain information about the growing involvement of drugs in violent incidents;
- introduce a simple measure of the licensee's perception of the seriousness of the incident.

Final modifications were made to the form in 1995, following a complete overhaul of the coding system (see Section A2.2 4) and recoding of reports previously received. The resulting form KPP IRF 4/95, which was used until reporting ceased in 1998, is given in Appendix 5.

The form was designed to obtain information relevant to the theoretical background informing the whole KPP programme, as was depicted in Figure 4.1. Closed questions were used for "hard" information, such as venue, time, number of assailants, gender of assailants or weapons used, using tick boxes for ease and specificity where possible. Open questions were used for descriptive information concerning what actually happened in the incident, with prompts such as "What led up to the incident?" and "What brought the incident to an end?" to encourage a detailed answer. The design aimed to allow sufficient space to accommodate the majority of descriptions.

It should be noted that, for confidentiality, the details requested about the licensed premises (see Appendix 5) were coded only in disguised form and were never revealed in reports or publications. Individuals' names and addresses were used by the SEP Group solely for identification purposes; they were never coded in any way or revealed in reports or publications.

A2.2.5 Coding of incident report data

The original coding scheme, given in Appendix 6A, was derived by Cook and Cox (1988) from the early reports of violent incidents recorded in 1987 and 1988. The author made minor amendments to the coding scheme between 1989 and 1992 to take account of changes made to the KPP IRF.

However, as the database grew, it became increasingly clear that an unacceptable amount of information, particularly about the nature of incidents, was being lost in the coding. Furthermore, it was difficult to fit some incidents to the coding structure. The original coding scheme had been derived from content analysis of a restricted number of incidents. While it was perfectly valid at the time, this type of scheme does not cater for the evolving character of a long term reporting system. In particular, coding for what happened in the incident was inadequate in that:

- it did not allow for more than one of the categories to occur in one incident, for example if there were both an attack on property and a threat to staff;
- it did not cater for unusual incidents.

A new coding scheme was devised by the author in 1993 to take account of these factors. The revised coding scheme comprised around 220 variables, rising to 236 by 1998. The version in use in 1998 is given in Appendix 6B.

In the revised scheme, a completely different approach was taken to the coding of much of the descriptive information. Rather than trying to fit what happened in incidents into a restricted number of categories, it was decided to pick out common features of incidents and code each incident in terms of the presence or absence of these features. This approach allowed a number of key operations:

- Any combination of the features within an incident could be coded accurately.
- New features could be added easily to the coding scheme as they became apparent.
- Variables could be expanded to provide greater insight into what had occurred in the incident. For example, the variable "argument between customers", was supplemented by the inclusion of twelve variables describing the type of argument, e.g. a domestic argument between members of the same family, racial conflict, an argument over a girlfriend or boyfriend, or over a game of pool, trouble between locals and non-locals, or between rival football fans or gangs. Similarly, many extra details about assailants and the activities in the pub at the time, such as a private party, could be included.
- Variables could be utilised in numerous combinations to provide considerable flexibility during analysis. For example, it was possible to retrieve all incidents in which any type of customer misbehaviour had initiated the incident, or only those in which illegal behaviour, such as stealing or drug dealing, had occurred.

Some variables from the existing scheme were expanded to give greater detail, for example the involvement of closing was expanded from dichotomous "not around closing" and "around closing" to a categorical variable including "open", "approaching closing time (within 15 mins)", "clearing after time, customers still present", "clearing/locking up after customers gone" and "closed". This allowed a much clearer indication of the role of closing to be gained from the analysis.

Some variables were dropped from the coding scheme, although the related questions remained on the report form. These were items that usually helped to provide an overall picture of the incident but were often filled in inappropriately, despite the instruction and training given. An example is "What was the employee doing at the time?" One problem that occurred

with this question was that often the answer given referred to the licensee rather than the member of staff actually involved in the incident. In addition, unhelpful or unspecific answers such as "working" were given. Other variables that were dropped were those describing action taken following the incident. Answers were frequently perfunctory or non-existent, or were made by the security staff using stock phrases. It was decided that it was better to utilise this information in reports by quoting individual suggestions or comments, in anonymised form, if they made an important point.

The new coding scheme also developed the notion of recording the incident as a dynamic process. Coding for this had been incorporated in embryonic form as early as 1989, by the inclusion of the variables dealing with what led up to the incident, what the employee was doing and what happened in terms of the aggressive act. However, considerable information about the development of the incident was lost, for example, whether a member of staff intervened, whether there was an attack as the assailant was being ejected from the premises or whether there was further action once the assailants were outside. To enable more insight into how the incident developed, variables were grouped into:

- events that occurred in the initial stages of incidents;
- events that occurred as the incident developed, such as members of staff intervening;
- the aggressive or violent behaviours that occurred as the culmination of the incident; and
- events that brought the incident to an end.

The process of devising the new coding for the descriptive information involved the author manually constructing a large grid with rows representing features of incidents. For each column representing a reported incident, a tick or code letter was placed opposite any feature that was present in the incident. New features were added to the grid as they appeared in the incidents being coded. Manual, as opposed to computer-based, construction of this grid was preferred for two main reasons: first, to allow the whole list of features to be viewed at one time and, second, to allow notes to be written in concerning any unusual or distinctive aspects of an incident.

The 1062 incidents reported from 1987 to 1993 were all entered into the grid in this manner. Any feature that occurred in more than 3 reported incidents was incorporated into the coding scheme.

All incident reports from 1993 to 1998 were coded according to the revised scheme; in addition, the 379 incidents reported for 1992 were recoded. A total of 1983 reported incidents were included in the database coded under the revised scheme. Inter-rater reliability checks for the main features of the coding of descriptive variables are described in Section 6.2.3.

APPENDIX 3: PUBLICITY LEAFLET

KEEPING PUBS PEACEFUL

Keeping Pubs Peaceful is the overall strategy designed by Allied Domecq Retailing, with the help of a team from the University of Nottingham, to tackle violence in public houses and to support licensees and their staff in managing violent incidents.

BACKGROUND RESEARCH

- **Licensees, area managers, and other Company personnel are periodically asked about the violence they have experienced in their houses and how they managed it and coped with it.**
- **This gives an overall picture of the problems that licensees face.**
- **Recommendations can be made as to how to combat the problem.**

The recommendations include:

- **monitoring of violent incidents through reporting,**
- **training for licensees in the management of incidents,**
- **help for licensees and their staff in coping with the aftermath of violent incidents.**

MONITORING

Violent incidents are monitored throughout all the Trading Companies within Allied Domecq Retailing so that management can be alerted to any changes in type or severity of incidents, or the events leading up to incidents, and take appropriate action to assist licensees. This is in line with the Management of Health & Safety at Work Regulations 1992.

INCIDENT REPORT FORMS

Information about violent incidents is collected using the Keeping Pubs Peaceful Incident Report Form (KPP IRF):

1. When a violent incident is reported, the licensee, or other employee involved, is asked, by a designated person within the Trading Company, to assist in completing the KPP IRF, usually over the phone or during a visit to the licensee.
2. A copy of the KPP IRF is sent to the Incident Report Centre (IRC) at the University of Nottingham, where information from the form is added to the *secure and anonymous* computer database.
3. Regular summary reports on the type, severity and common characteristics of reported incidents are sent to senior managers within the Trading Companies, to keep them aware of the problems that licensees face, and up-to-date with emerging trends and any requests for action by licensees. *No individuals or individual houses are identified in these reports.*

TRAINING

The Keeping Pubs Peaceful training system uses ***licensees' own experience and expertise,*** plus a wider research input, to produce a scheme for managing violence based on:

- **reducing the risk,**
- **resolving the conflict,**
- **managing the aftermath.**

The Keeping Pubs Peaceful training system is now used by most of the Trading Companies within Allied Domecq Retailing. The reports from the IRC are used to update the content of the training courses.

THE AFTERMATH

Information from the KPP IRFs, along with anonymous feedback from training courses, has helped Allied Domecq to appreciate the kind of support that employees may need following violent incidents:

- **rapid repairs**
- **improved security**
- **liaison with police**
- **prosecution of offenders**
- **help with compensation**
- **understanding and advice from management**
- **access to counselling, if required.**

WHO SHOULD REPORT?

Pub staff, area managers, administrative staff, indeed any (Trading Company) personnel who experience violence related to their work, should report the incident.

WHO SHOULD THEY REPORT TO?

The people within (Trading Company) designated to complete Keeping Pubs Peaceful Incident Report Forms are:

Telephone Ext.

Telephone Ext.

Telephone Ext.

They would also be happy to hear of any instances where employees felt that they had managed to prevent a potentially dangerous situation becoming violent, or had minimised the effect of a violent incident. It is important that good practice in prevention and calming of situations is acknowledged and shared.

WHAT IS VIOLENCE?

Violence is any behaviour deliberately intended to damage staff or customers (or pub/brewery property) either physically or psychologically (through abuse or threat).

WHAT SHOULD BE REPORTED?

Employees should report any incident which makes them feel abused or threatened, whether or not any physical damage or injury has occurred.

KEEPING PUBS PEACEFUL

(TRADING COMPANY NAME)

(TRADING COMPANY LOGO)

Allied Domecq Retailing

with

the Centre for Organizational Health and Development, Department of Psychology, University of Nottingham NG7 2RD

APPENDIX 4: KPP IRF COMPLETION INSTRUCTIONS

COMPLETING KEEPING PUBS PEACEFUL INCIDENT REPORT FORMS (KPP IRF)

The Keeping Pubs Peaceful Incident Report Form (KPP IRF) is designed to be completed by, or on behalf of, the employee actually involved in the incident. A person completing the form on someone else's behalf should try to get the answer to each individual question, rather than just getting a general picture and then filling in the form from notes or memory. Only the final section is designed to be completed by someone other than the employee involved in the incident.

People reporting violent incidents have undergone traumatic experiences of varying severity and may well be emotionally upset. Having to recount details of the incident may add to their distress.

**It is important that the people available to assist them in completing the form are aware of, and sensitive to,
their needs.**

BUT

**Filling in this form in no way constitutes 'Critical Incident Debriefing' which is a formal procedure requiring a
considerable amount of training.**

EXPLANATORY NOTES/PROBLEMS

Most questions are straightforward but a few problems have been noted and some explanation may help. *As far as time will allow*, please:

- Try to answer all the questions, they are all important in providing clues as to how the problem of violence can be tackled.

- Check that the answers are all consistent.

- Complete all parts of a question if possible. Trying to extract details about assailants, for example, from the description of the incident is difficult and not always accurate.

- Include as much detail as possible in the descriptive sections and any comments or suggestions that licensees make in the later sections.

- Remember that in analysing reports we <u>cannot assume</u> anything, e.g. that '11 o'clock' is evening or that 'the customer' is male unless stated otherwise.

- Remember that practices vary among different houses and trading companies and we don't know what 'as usual' means.

- If a previous, unreported incident is mentioned, try to get details of that and fill in a separate form.

- ***Write clearly.***

- ***Ensure that information is not 'cut off', or too faint to read, when photocopies are made.***

<u>House name & address</u>

- Remember to include both the house <u>name</u> and the <u>town</u>.

<u>Pub category</u>

A system of pub categorisation has been adopted by Allied Domecq Retailing. A simplified version of the categorisation is attached.

<u>Time</u>

- Either use 24hr clock e.g. 23.00, 15.30, 09.20, or remember to include 'am' or 'pm'. Always put 'am' or 'pm' with 10.30, 11.20 etc.!

Opening hours on day of incident

- Write the actual hours and not just 'normal', 'as usual' or 'all day' as no assumptions can be made as to what normal or usual hours are for that house. This is required to ascertain whether the incident took place in or out of opening hours, or, in particular, around closing time.

Employee

- Give details of the employee who was actually involved in the incident rather than details of the licensee reporting the incident. If no employee was involved, this section can be left blank.
- Complete as much as possible, e.g. is 'Chris' male or female.

Main assailant (or aggressor)

- Provide as much information as is known, including an estimate of the assailant's age.
- Include in 'Number of assailants' all persons who became violent (physically or verbally), but not those who were merely part of a group some of whose members became violent. (It is helpful to indicate the size and nature of the whole group in the 'Description of the incident' section).
- Remember to complete the later section for details of additional assailants.

Where the incident took place

- If the location was in an 'Other room', specify the type of room. If more than one room was involved, state where the incident started.

Crowding

- Try not to overlook this question. The assessment of whether or not a pub was crowded is entirely dependent on what the licensee considers to be crowding in his/her own pub.

Description of the incident

- Describe the incident in the employee's own words.
- Ensure that the specific questions are answered to provide a consistent framework for all the descriptions.
- If a more detailed description of the incident is available it is useful to include it with the form.
- Try to indicate the sex of people involved. It will not be assumed that e.g. 'the customer', 'this person' or 'the manager' was a man.

Circumstances leading up to the incident

- ***Include as much information as possible about what led up to the incident.*** This is the most fruitful source of information about common factors in the build-up to incidents. Licensees can then be alerted and thus reduce the risk of further similar incidents occurring.

What happened in the incident?
What brought the incident to an end?
What action did the police take?

- Include as much detail as possible so that any important or unusual actions by staff or by assailants can be noted and used to alert other licensees. For example: How many staff have been attacked around the doorway or outside when ejecting customers? How many incidents have resulted in continuing action after the assailants were ejected or left? How many members of staff have been arrested after incidents when they intervened physically? How many incidents benefited or suffered from other customers getting involved?

Weapons

A weapon is any object used to threaten or attack a person or property, i.e. it is not just a recognised weapon such as a gun or knife, but may be an ordinary object such as an ashtray or walking stick.

- Include *all* items used as weapons.

Other employees or customers involved

- Ensure that answers in this section are consistent with the description of the incident in previous sections.
- Include both other employees and customers and state who they are. (There has been some loss of information about injuries to customers, because this section has not been completed.)
- Add a summary of other injuries if there are more than can be indicated in the tick boxes.
- State how many people were injured altogether. If this is not known accurately, give an estimate.

Damage

- Include damage to glasses. Although part of everyday pub experience, broken glass is an added hazard in a violent incident.
- Ensure that this section is consistent with the description of the incident in previous sections.

Seriousness of incident

This question is designed to ascertain how serious the employees actually involved felt the incident to be. This cannot be assumed from the amount of injury or damage sustained. For example, a minor incident may have resulted in quite serious injury because someone slipped and fell, whereas an incident in which employees or customers felt very frightened, threatened or upset may have resulted in little or no physical injury or damage.

Handle this question carefully and explain sensitively, particularly if the employee involved is upset at the time.

- Include any comment made, even if the employee feels unable to rate the seriousness of the incident by giving a 'score'.
- Use your discretion! The 'score' is very important in analysing incidents because it is the only quantitative measure that can be used to point to the factors that make some incidents more serious than others. However, it is not worth upsetting people!!

Area Manager/Trading Company action required

This section is designed so that the licensee and other employees actually involved in the incident can express what they would like to see happen to help them deal with the consequences of the incident, either immediately or in the longer term, or to prevent re-occurrence of this type of incident. This important feedback enables management to see what type of support is really required and perhaps to reassess attitudes towards employees involved in violent incidents.

- Please complete this section!
- Include employees' real needs and suggestions, not just standard procedures.

Area Manager/Trading Company action taken

This section is designed partly to give a comparison of action taken with action required, indicating areas in which management reaction matched or differed from the expectations of the employees. It also shows what the organisation is doing in general and shares ideas and good practice.

APPENDIX 5: KEEPING PUBS PEACEFUL INCIDENT REPORT FORM KPP IRF 4/95

KEEPING PUBS PEACEFUL
INCIDENT REPORT FORM

Ref. no.

Trading company

House name & address

Pub category Name of licensee

Date Day of week Time

Opening hours on day of incident (please be specific)

EMPLOYEE involved in the incident

Name

Address

Any other details

Sex:
Female [ ]
Male [ ]

Age:
under 21 [ ]
21-25 [ ]
26-30 [ ]
31-40 [ ]
over 40 [ ]

Job title:

MAIN ASSAILANT (Use Page 3 for further assailants)

Name

Address

Is he/she local? No [ ] Yes [ ]

Sex:
Female [ ]
Male [ ]

Estimated age:
under 21 [ ]
21-25 [ ]
26-30 [ ]
31-40 [ ]
over 40 [ ]

Is he/she Regular customer [ ] Non-regular [ ] Staff [ ] Ex-staff [ ]?

Had he/she been barred *prior* to the incident? No [ ] Yes [ ]

Any other details

Number of assailants: _____

Where did the incident take place? Outside [ ] Lounge bar [ ] Public bar [ ] Restaurant [ ]

Entrance [ ] Pool room [ ] Toilet [ ] Other room [ ] (please specify)

Was the house crowded at the time of the incident? No [ ] Yes [ ]

DESCRIPTION OF THE INCIDENT

What were the circumstances leading up to the incident?

What was the employee doing at the time?

What happened in the incident?

What brought the incident to an end?

Were the police called to the incident? No [ ] Yes [ ]

What action did they take?

Did the assailant have or use any weapon? No [ ] Yes [ ] If so, what?

Gun [ ] Knife [ ] Baseball bat/club [ ] Gas/spray [ ] Brick/concrete [ ] Glass [ ]

Furniture, chair etc. [ ] Pool cue/ball [ ] Ash tray [ ] Food/drink [ ] Bottle [ ]

Other (please specify) [ ]

Was the weapon: intentionally brought in [ ] obtained from pub premises [ ]?

Was the employee injured?	No injury	[ ]
	Upset, no physical injury	[ ]
	Injury not requiring medical attention	[ ]
	Injury requiring medical attention	[ ]
	Injury requiring short hospitalisation	[ ]
	Injury requiring long hospitalisation (+24 hours)	[ ]
	Permanent disability	[ ]
	Death	[ ]

Part(s) of the body injured: Face [ ] Head/neck [ ] Arms/hands [ ] Trunk [ ] Legs/feet [ ]

Please give details

Did he/she have to take time off work? No [ ] Yes [ ] How much time?.....(days)

Were any **other** employees or customers involved? No [ ] Yes [ ]
Please state who:

Were they injured?

No injury	[ ]
Upset, no physical injury	[ ]
Injury not requiring medical attention	[ ]
Injury requiring medical attention	[ ]
Injury requiring short hospitalisation	[ ]
Injury requiring long hospitalisation (24 hours+)	[ ]
Permanent disability	[ ]
Death	[ ]

Part(s) of the body injured: Face [ ] Head/neck [ ] Arms/hands [ ] Trunk [ ] Legs/feet [ ]

Please give details

Did they have to take time off work? No [ ] Yes [ ] How much time?.....(days)

How many people were injured in total? _____

Employees : Men ____ Women ____ **Customers :** Men ____ Women ____

Was property damaged or stolen? No [ ] Yes [ ] If so, what?

Was clothing damaged? No [ ] Yes [ ] If so, whose and what?

ADDITIONAL ASSAILANTS

ASSAILANT 2

Name **Sex:** Female [ ] Male [ ] **Estimated age:** under 21 [ ] 21-25 [ ] 26-30 [ ] 31-40 [ ] over 40 [ ]

Address

Is he/she local? No [ ] Yes [ ]

Is he/she a Regular customer [ ] Non-regular [ ] Staff [ ] Ex-staff [ ]?

Had he/she been barred *prior* to the incident? No [ ] Yes [ ]

ASSAILANT 3

Name **Sex:** Female [ ] Male [ ] **Estimated age:** under 21 [ ] 21-25 [ ] 26-30 [ ] 31-40 [ ] over 40 [ ]

Address

Is he/she local? No [ ] Yes [ ]

Is he/she a Regular customer [ ] Non-regular [ ] Staff [ ] Ex-staff [ ]?

Had he/she been barred *prior* to the incident? No [ ] Yes [ ]

How serious do you rate this incident to have been? ____

(Please give a number from 0 to 10, where 0 is 'trivial' and 10 is 'the most serious you could ever imagine'.)

Please state the reasons for this score or give further comment:

Do you have any reason to believe the incident was linked to drug activity or drug problems?
No [ ] Yes [ ]

If 'Yes': What are these reasons?

Were the assailants drunk? No [ ] Yes [ ]

What action would you like/have liked your Area Manager/Trading Company to take?

Have you any other suggestions to prevent re-occurrence?

TO BE COMPLETED BY THE TRADING COMPANY

What action was/will be taken by the Area Manager/Trading Company?

APPENDIX 6: KEEPING PUBS PEACEFUL INCIDENT REPORT CODING SCHEMES

APPENDIX 6A KPP CODING SCHEME 1988

APPENDIX 6B KPP CODING SCHEME 1998

APPENDIX 6A: KPP CODING SCHEME 1988

Trading Company

The trading companies were coded as:

Taylor Walker	[0]
Tetley Walker	[1]
Inde Coope, Friary Meux	[2]
Alloa	[3]
Halls, Oxford & West	[4]
Ansells	[5]

Time of Incident

The days of the week were coded from Sunday through Saturday:

Sunday	[0]
Monday	[1]
Tuesday	[2]
Wednesday	[3]
Thursday	[4]
Friday	[5]
Saturday	[6]

The times at which incidents occurred were coded against five time periods:

Early morning until 13.30 hrs	[0]
Late morning from 13.30 hrs	[1]
Early evening until 20.30 hrs	[2]
Late evening from 20.30 hrs	[3]
Out of pub hours	[4]

Biographical Details

The ages of both employees and assailants were coded using five age bands up to "over 30 yrs". If an estimated age range was given for assailants then the calculated mean age was used.

The age categories used were:

Under 21 yrs	[0]
21 to 25 yrs	[1]
25 to 30 yrs	[2]
Over 30 yrs	[3]

The sex of employees and assailants was coded as

Female	[0]
Male	[1]

Once the forms had been examined it was decided to categorise the occupational status of employees using five groups:

Manager	[0]
Spouse	[1]
Tenant	[2]
Assistant Manager	[3]
Relief Manager	[4]
Other Staff	[5]

The number of assailants involved was categorised as:

One	[1]
Two	[2]
Three or more	[3]

The addresses of the assailants were coded as being local to the pub [0] or not [1] and assailants were coded as being regulars in the pub [0] or not [1].

On each report form there is a space to record other details about the assailant. Very little information had been recorded about assailants on the forms received.

Details surrounding the event

The circumstances leading up to the incident were categorised as follows, on the basis of pilot studies of similar data:

Conflict between customers	[0]
Conflict between customers and staff	[1]
Revenge after barring/refused service	[2]
Outside event/event brought in	[3]
Rowdy group behaviour	[4]
Conflict between staff	[5]

The employees' activities at the time of the incident were categorised thus:

Behind the bar	[0]
In front of the bar	[1]
On break/socialising	[2]
In cellar/other room	[3]
Closing up	[4]
Something out of pub hours	[5]
Opening up	[6]
Throwing someone out	[7]

The Nature of the Incident

This was coded using 8 different categories:

Verbal abuse	[0]
Threat	[1]
Attack on staff	[2]
Attack on clients	[3]
Attack on property	[4]
Attack on staff & property	[5]
Attack on clients & property	[6]
Attack on staff & clients	[7]
Attack on police	[8]

Weapons

Each assailant was coded as being armed [0] or not [1] and as being intentionally armed [0] or not [1]. Intentionally armed would imply arriving with a weapon as opposed to using something which was to hand at the time of the incident. If the weapon used was something from the pub premises, the type of item used was coded as follows:

Ash tray	[0]
Bottle/glass/ice bucket	[1]
Pool cue/ball	[2]

Dart	[3]
Furniture, e.g. a chair	[4]
More than one of these	[5]

Injuries

The effects of the incident on the employee were coded in terms of injury: yes [0] or no [1]. The degree of severity of any injury was included and was categorised as follows:

Upset, but not physically injured	[0]
Injury-not requiring medical attention	[1]
Injury-requiring medical attention	[2]
Injury-requiring short hospitalisation	[3]
Injury-requiring long hospitalisation	[4]
Permanent disability	[5]

The presence of damage to different regions of the body (i.e. face, head, arms, trunk, legs) was coded using a simple 'yes' [0] 'no' [1] code for each region. The taking of sick leave was similarly coded: yes [0] or no [1]. Duration of sick leave was coded in the following way:

One day	[0]
Less than one week	[1]
One week	[2]
Less than two weeks	[3]
Less than one month	[4]
One month	[5]
More than one month	[6]

The involvement of others in the incident was coded as yes [0] or no [1], as was any injury they received: yes [0] or no [1]. The severity of that injury, its location (body area), and sick leave were all coded as described above.

Property

Details of damage to property were recorded: presence of damage to property - yes [0] or no [1] and whether clothes were spoiled - yes [0] or no [1].

The type of property that was damaged was then categorised:

Furniture	[0]
Bottles/glasses	[1]
Entertainment equipment	[2]
The building itself	[3]
More than one of the categories mentioned	[4]
Stolen cash/drink	[5]
Car(s)	[6]
Personal belongings	[7]

Damage to clothing was categorised as:

Outer clothing, e.g. coat	[0]
Inner clothing, e.g. shirt	[1]
Footwear	[2]
More than one of these	[3]

Place

The location of the incident was coded in terms of :

Outside	[0]
Lounge bar	[1]
Public bar	[2]
Other rooms	[3]
More than one of these areas	[4]

Police

Police attendance was classified as yes [0] or no [1] and their action as:

None	[0]
Warning	[1]
Arrest	[2]
Statement taken	[3]
Exclusion order	[4]

Action

The action requested of area management was coded as:

Extra events (e.g. discos) cancelled	[0]
None	[1]
Security measures	[2]
Staff change	[3]
Support	[4]

The action required of the trading company was coded as:

None	[0]
Improve security	[1]
Exclusion order	[2]
Private prosecution	[3]
Advice/support	[4]

Other information/suggestions for preventing re-occurrence was coded as:

Improve security	[0]
Barring	[1]
None	[2]

The action subsequently taken by the trading company was coded as:

Advice given	[0]
Investigation	[1]
Security measures	[2]
Seek exclusion order	[3]
None	[4]

The action subsequently taken by the area manager was coded as:

Extra events cancelled	[0]
See manager	[1]
Support	[2]
Security measures	[3]

All missing data points were coded with a [9].

APPENDIX 6B: KPP CODING SCHEME 1998

Reference number

REF	4-digit number	

Trading Company

CO	'00'	Alloa Brewery	'07'	AD Leisure (North)
	'01'	Ansells Ltd	'08'	AD Leisure (Midl's)
	'02'	Ind Coope	'09'	AD Leisure (South)
	'03'	Joshua Tetley	'10'	AD Inns (North)
	'04'	Taylor Walker	'11'	AD Inns (Midlands)
	'05'	Tetley Pub Company	'12'	AD Inns (South)
	'06'	Tetley Walker	'99'	Not stated

Pub category

CAT	'00'	TDH	Town Drinking House
	'01'	BBL	Broad Based Local
	'02'	LCP	Local Community Pub
	'03'	MDH	Male Drinking House
	'04'	QTW	Quality Traditional Wet/Firkin, Scruffy
	'05'	QTF	Quality Traditional Food/Big Steak
	'06'	QFS	Quality Food Suburban
	'07'	YPC	Young Persons Circuit
	'08'	YPV	Young Persons Venue, Disco, Nightclub
	'09'	WE	West End
	'10'	CITY	City
	'11'	POOL	Pool
	'12'	HOTEL	Hotel
	'13'	Family house, Wacky Warehouse, Jumblies etc.	
	'14'	Mr Q's	
	'15'	Other	
	'99'	Not stated	

Month of incident

MONTH	'01'	January	'05'	May	'09'	September
	'02'	February	'06'	June	'10'	October
	'03'	March	'07'	July	'11'	November
	'04'	April	'08'	August	'12'	December
					'99'	Not stated

Year of incident

YEAR	'00'	1987	'04'	1991	'08'	1995
	'01'	1988	'05'	1992	'09'	1996
	'02'	1989	'06'	1993	'10'	1997
	'03'	1990	'07'	1994	'11'	1998
					'99'	Not stated

Day of incident

DAY	'0'	Sunday	'4'	Thursday
	'1'	Monday	'5'	Friday
	'2'	Tuesday	'6'	Saturday
	'3'	Wednesday	'9'	Not stated

Time of incident

TIME	2 digit hour			
	'98'	Overnight	'99'	Not stated

Involvement of closing

CLOSE	'0'	Open
	'1'	Approaching closing time (within 15 mins, inc. time itself, e.g. 11pm)
	'2'	Clearing after time, customers still present
	'3'	Clearing/locking up after customers gone
	'4'	Closed
	'9'	Not apparent

Employee's age

EMAGE	'0'	Under 21	'3'	31-40
	'1'	21-25	'4'	Over 40
	'2'	26-30	'9'	Not stated

Employee's sex

EMSEX	'0'	Female	'9'	Not stated
	'1'	Male		

Employee's job title

EMJOB	'00'	Manager/licensee	'07'	Trainee manager
	'01'	Spouse/partner	'08'	Other staff
	'02'	Tenant	'10'	Retail partner
	'03'	Assistant manager/ Deputy manager	'11'	Chargehand
			'12'	Family
	'04'	Relief manager/ Holding manager	'13'	Friend
			'14'	Children's supervisor/ Tuck shop manager
	'05'	Bar staff		
	'06'	Doorstaff	'99'	Not stated

Assailant's age

ASAGE	'0'	Under 21	'3'	31-40
	'1'	21-25	'4'	Over 40
	'2'	26-30	'9'	Not stated

Assailant's sex

ASSEX	'0'	Female	'9'	Not stated
	'1'	Male		

Assailant's 'locality'

ASLOC	'0'	Non-local	'9'	Not stated
	'1'	Local		

Assailant's 'regularity'

ASREG	'0'	Non-regular	'4'	Barred
	'1'	Regular	'5'	Friend/family
	'2'	Staff	'9'	Not stated
	'3'	Ex-staff		

Number of assailants

ASNO	2-digit number			
	'20'	20 or more	'93'	several
	'50'	50 or more	'94	crowd/quite a lot
	'91'	some	'99'	Not stated
	'92'	group		

Gender mix of assailant group

ASGRP	'0'	Female	'4'	Including children
	'1'	Male	'8'	Only 1 assailant
	'2'	Mixed	'9'	Not stated
	'3'	Not stated but probably male		

Drunken/drugged state of assailants

DRUNK	'0'	Not reported drunk/high	'2'	High
	'1'	Drunk	'3'	Both

Where incident occurred

WHERE	'00'	Outside
	'01'	Lounge bar/saloon bar
	'02'	Public bar (including 'bar' when only one)
	'03'	Restaurant
	'04'	Games/pool room
	'05'	Toilets
	'06'	Hall/corridor/entrance
	'07'	Private accommodation
	'08'	Other room
	'09'	More than one
	'10'	Mr Q's
	'11'	Dance floor
	'12'	Off premises
	'13'	Wacky/children's area
	'99'	Not stated

Amount of crowding

CROWD	'0'	Not crowded	'9'	Not stated - or pub closed
	'1'	Crowded		

Weapon used

WEAP	'0'	No weapon involved	'9'	Not stated/not known
	'1'	Weapon involved		

Type of weapon

'0'	Weapon not reported to have been involved
'1'	Weapon reported to have been involved

WBRICK	Brick, stones, concrete etc.
WFIRE	Fire/fire bombs/petrol bombs, etc.
WSPRAY	Sprays, ammonia, CS gas, etc.
WBAT	Baseball bat, club, sticks, etc.
WPOOL	Pool equipment
WIRON	Iron/metal bars, piping etc.

WGUN		Gun, air rifle, etc.
WKNIFE		Knife, machete, Stanley knife, sword etc.
WASHT		Ashtray
WFURN		Furniture, stools, tables, etc.
WBOTT		Bottles
WGLASS		Glasses
WFOOD		Food and drink
WOTHER		Other weapons
WUNKNO		Unknown weapon

Where weapon obtained

WOBTN	'0'	Obtained from premises
	'1'	Brought in
	'2'	Both
	'3'	Unclear where obtained
	'9'	Not armed
	'9'	Not stated

Circumstances/conditions leading up to incident

	'0'	Circumstance/condition not reported
	'1'	Circumstance/condition reported

NOOBV	No obvious cause
EQUIPINT	Interfering with equipment
INBAR	Attempting to get behind bar
STEAL	Attempting to steal
NOPAY	Refusing to pay
ABLANG	Abusive language
ROWDY	Rowdy behaviour
PROVOC	Intentionally provocative
THROW	Throwing things
ACCIDMIS	Accident/misunderstanding
ARGCUST	Argument between customers
FIGCUST	Fight between customers
ARGOUT	Outside argument brought in
ARGDOM	Domestic/family argument
ARGSEX	Argument over man/woman
ARGFAM	Inter-family argument
ARGGRP	Inter-group argument
ARGLOC	Locals/non-locals
ARGRACE	Racial tension
ARGFBL	Rival football fans
ARGPUB	Inter-pub rivalry
ARGGNG	Inter-gang tension
ARGREG	Regulars/non-regular
ARGPOOL	Argument over pool
NOGOAFT	Refusal to leave after time
REFAFT	Refusal of service after time
REFAGE	Refusal of service - under age
REFBAR	Refusal of service - barred
REFPREV	Refusal of service - previous behaviour
REFNOW	Refusal of service - present behaviour
REQGO	Request to leave

REQGOBAR	Request to leave - barred
TELLBAR	Told barred
INDECENT	Indecent action/exposure
INQUART	Attempting to get into private quarters
MISBEHAV	Other/unspecified misbehaviour
ARGSTAFF	Argument with member of staff
BETWSTAF	Argument between staff
REFENTRY	Refused entry
PLANNED	Planned attack
LOOKING	Assailant looking for victim
REPERCUS	Repercussion from previous incident
REPSAME	Repercussion (same people)
REPOTH	Repercussion (other people)
STAFBED	Staff in bed
STAFOFF	Staff off premises
STAFOUTS	Staff went outside
STAFTEL	Staff telephoning (led to worse action)
LOCKING	Staff locking up after session
CLEARING	Staff clearing for closing
EQUIPFL	Equipment failure
TVFTBL	Football/rugby match/boxing on television
SPECIAL	Special event
UNSEEN	Incident not seen by staff
CTDRUG	Caught using/dealing drugs
PRIVPART	Private party
ANNOY	Person annoying customers
MANNEW	New managers
SERVICE	Problem with service
LETINBAR	Barred person(s) allowed in
FANS	Football/rugby/racing/boxing etc. fans
TEAM	Football/rugby etc. team or club
GANGFEAR	Gang or family held in fear
INTERVEN	Staff intervened in situation
MENTAL	Mention of evidence of mental illness
ARMY	Soldiers/military involved
VIOLENT	Previous history of violence
RETARD	Assailant reported to be "mentally retarded" i.e. learning disabilities
HOLIDAY	National holiday/festival (Christmas Eve/Day, Boxing day, New Year's Eve/Day, Bank holiday)
EXWAGE	Ex member of staff collecting/demanding wages
LOCALEV	Important local event

<u>What happened in the incident</u>

'0'	Event not reported to have occurred
'1'	Event reported to have occurred

FIGHT	Fight
ACCID	Accidental injury or damage
FORCE	Forced way in (or attempted to)
FIRE	Fire
AFTATT	Attack on premises after ejection
VERBAL	Verbal abuse

THREAT	Threat
ASTAFF	Attack on staff
ACUST	Attack on customers
APROP	Attack on property
FAM	Family members joined in (inc. girl/boyfriend)
AFTFIG	Fight continued after ejection
HELP	Customers assisted staff
RIOT	Free for all/riot
BERSER	Assailant went berserk
RETURN	Assailant returned later
RETOTH	Assailant returned later with others
EJATT	Attack during ejection
IMMED	Immediate attack
ATTPOL	Attack on police
BANK	Attack while banking takings
AFTTHR	Threat after incident
BACKIN	Tried to get back in after ejection
SPREAD	Spread to other customers not originally involved

How the incident came to an end

'0'	Circumstance not reported to have occurred
'1'	Circumstance reported to have occurred

NOEND	Not stated
OTHEND	Other
CALMFR	Assailant calmed by friends
CALMST	Assailant calmed by staff
CALMOT	Assailant calmed by other/unknown
ASLEFT	Assailant left
EJECT	Assailant ejected
POLCAL	Police called
POLARR	Police arrived
ASSINJ	Assailant injured
OTHINJ	Other injured
CUSTAS	Customers assisted staff
DETAIN	Assailants detained/restrained til police arrived
HIT	Staff hit assailant
ESCAPE	Staff escaped or shut themselves in

Police action taken

'0'	Action not reported to have been taken
'1'	Action reported to have been taken

NOTPOL	Police not called
NOCOME	Police did not arrive
ASSGON	Assailant gone when police arrived
POLATE	Police late
NOACT	Police arrived but took no action
WARN	Police gave a warning
STATE	Police took statement/investigating
SEARCH	Police mounted a search
ARREST	Police arrested assailant
ARRSTA	Police arrested member of staff

POCALM		Police calmed situation
POCLEA		Police cleared premises
POSHUT		Police closed premises
POHOSP		Police took injured to hospital
NOCHA		Police did not press charges/released assailant
BAIL		Assailant let out on bail
POPOOR		Dissatisfaction with police action
CHARGE		Charges preferred
FUTCHA		Charges will be preferred if assailant found
PATROL		Increase patrols/protection/support for pub
NODETS		Police called - no further details
LATER		Reported to police later
NOWIT		Cannot prefer charges - no witnesses

Number of police injured

POLINJ 2-digit number

Injury to employee

(if 'No injury', code FACE to EMSICK as '9',
if 'Upset, no physical injury', code FACE to LEGS as '9')

EMINJ	'0'	No injury
	'1'	Upset or shocked, no physical injury
	'2'	Injury not needing medical attention
	'3'	Injury needing medical attention
	'4'	Injury requiring short hospitalisation
	'5'	Injury requiring long hospitalisation (24 hours +)
	'6'	Permanent disability
	'7'	Death
	'9'	Not stated

Injury to employee's face (See EMINJ)

FACE '0' No '1' Yes

Injury to employee's head (or neck) (See EMINJ)

HEAD '0' No '1' Yes

Injury to employee's arms (See EMINJ)

ARMS '0' No '1' Yes

Injury to employee's trunk (See EMINJ)

TRUNK '0' No '1' Yes

Injury to employee's legs (See EMINJ)

LEGS '0' No '1' Yes

Sick leave taken by employee (See EMINJ)

EMSICK	'0'	None taken
	'1'	One day
	'2'	Up to one week
	'3'	Up to two weeks
	'4'	Up to one month
	'5'	More than one month

	'6'	Still off work
	'7'	Unknown time
	'9'	Not stated

Second person involved
(if 'No' code INJ2 to SICK2 as '9')

ELSE	'0'	No or not stated
	'1'	Staff
	'2'	Customer
	'3'	Unclear who
	'4'	Both
	'5'	Friend/family
	'6'	Police

Injury to second person
(if 'No injury', code FACE2 to SICK2 as '9',
if 'Upset, no physical injury', code FACE2 to LEGS2 as '9')

INJ2	'0'	No injury
	'1'	Upset or shocked, no physical injury
	'2'	Injury not needing medical attention
	'3'	Injury needing medical attention
	'4'	Injury requiring short hospitalisation
	'5'	Injury requiring long hospitalisation (24 hours +)
	'6'	Permanent disability
	'7'	Death
	'9'	Not stated

Injury to second person's face (See ELSE & INJ2)

FACE2	'0'	No	'1'	Yes

Injury to second person's head (See ELSE & INJ2)

HEAD2	'0'	No	'1'	Yes

Injury to second person's arms (See ELSE & INJ2)

ARMS2	'0'	No	'1'	Yes

Injury to second person's trunk (See ELSE & INJ2)

TRUNK2	'0'	No	'1'	Yes

Injury to second person's legs (See ELSE & INJ2)

LEGS2	'0'	No	'1'	Yes

Sick leave taken by second person (See ELSE & INJ2)

SICK2	'0'	None taken
	'1'	One day
	'2'	Up to one week
	'3'	Up to two weeks
	'4'	Up to one month
	'5'	More than one month
	'6'	Still off work
	'7'	Unknown time
	'9'	Not stated

Number of employees injured

NOEMPL	2-digit number	
'99'	Not stated or not known	
EMPLM	1-digit number	(male employees)
EMPLF	1-digit number	(female employees)
EMPLU	1-digit number	(employees, gender not stated)

Number of customers injured

NOCUST	2-digit number	
'98'	Some, several, etc.	
'99'	Not stated or not known	
CUSTM	1-digit number	(male customers)
CUSTF	1-digit number	(female customers)
CUSTU	1-digit number	(customers, gender not stated)

Damage to property

DAMAGE	'0'	No damage reported
'1'	Damage reported	
'2'	Extensive damage	
'9'	Not stated/not known	
DDISCO	Damage to disco	
DTILL	Damage to till	
DVEND	Damage to vending machine	
DASHT	Damage to ashtrays	
DSTOLE	Property stolen	
DORN	Damage to ornaments, plants	
DPICT	Damage to pictures, mirrors	
DCLOTH	Damage to clothing	
DFURN	Damage to furniture, carpet, curtains, fittings	
DCAR	Damage to cars, vans	
DPERS	Damage to personal property	
DSPECS	Damage to spectacles	
DCASH	Cash stolen	
DENTER	Damage to entertainments	
DPOOL	Damage to pool equipment	
DBAR	Damage to bar fitments/accessories	
DSTOST	Stock stolen	
DSTDAM	Damage to stock	
DBOTT	Damage to bottles	
DGLASS	Damage to glasses	
DDOOR	Damage to doors	
DWIND	Damage to windows	
DLIGHT	Damage to lights	
DPHONE	Damage to phone/PA button	
DWALL	Damage to walls, fences, railings, roofs etc..	
DOTHER	Damage to other items	
DTOIL	Damage to toilets	

Additional assailants

Second assailant's age

ASAGE2	'0'	Under 21	'3'	31-40
	'1'	21-25	'4'	Over 40
	'2'	26-30	'9'	Not stated

Second assailant's sex

ASSEX2	'0'	Female	'9'	Not stated
	'1'	Male		

Second assailant's 'locality'

ASLOC2	'0'	Non-local	'9'	Not stated
	'1'	Local		

Second assailant's 'regularity'

ASREG2	'0'	Non-regular	'3'	Ex-staff
	'1'	Regular	'4'	Barred
	'2'	Staff	'9'	Not stated

Third assailant's age

ASAGE3

0'	Under 21		'3'	31-40
	'1'	21-25	'4'	Over 40
	'2'	26-30	'9'	Not stated

Third assailant's sex

ASSEX3	'0'	Female	'9'	Not stated
	'1'	Male		

Third assailant's 'locality'

ASLOC3

0'	Non-local		'9'	Not stated
	'1'	Local		

Third assailant's 'regularity'

ASREG3	'0'	Non-regular	'3'	Ex-staff
	'1'	Regular	'4'	Barred
	'2'	Staff	'9'	Not stated

Drug involvement

DRUG	'00'	None	'10'	Caught using in house
	'01'	Possible or suspected	'11'	Evidence of use found
	'02'	Known user	'12'	Other
	'03'	Known dealer	'13'	Local problem
	'04'	Prescribed drugs involved	'14'	Had possession
	'05'	Yes (no details)	'15'	Member of group known to be involved
	'06'	Appeared 'high'		
	'07'	Not known/not sure	'16'	Victim drug dealer
	'08'	Not asked	'17'	Problem in house
	'09'	Not stated	'18'	Repercussions for "clean up"

Seriousness of incident
SERI Score 00 - 10 99 Not stated

Employee left
EMLEFT

'0'	No comment
'1'	Employee left employment
'2'	Employee transferred
'3'	Employee dismissed/disciplined
'4'	Employee considering leaving
'5'	Relief installed (manager distressed
'6'	Manager residing elsewhere while problem sorted

"Isolated incident" or "one-off"
ISO '0' No comment '1' Comment made

Standard of detail of report
DETAIL '0' Good '2' Poor or incomplete
'1' Fair '3' Old or other form

Name & place
SIGN 1st 4 letters of pub name
1st 4 letters of town

Outlet number
OUTLET 6-digit number (obtained from outlet listings)

APPENDIX 7: SAMPLING STUDY MATERIAL

SAMPLE COMPLETED INCIDENT DIARY

INCIDENT DIARY INSTRUCTIONS

INCIDENT DIARY

The Beale Arms, Sometown

Monday 4th November

Time	Problem between customers	Problem between staff and customers	Problem between staff members	Verbal abuse	Pushing shoving	Threat	Physical attack on staff	Physical attack on customer	Physical attack on property	Fight - 2 people	Fight - more than 2 people	Injury to customers	Injury to staff	Damage to property	Weapons involved	Rpt'd to ADR
9.20pm	✓									✓		✓		✓	Glass	✓
10.30pm		✓		✓			✓						✓		–	✓
10.40pm		✓			✓				✓						–	X

Initials D.D.B

Tuesday 5th November

Time	Problem between customers	Problem between staff and customers	Problem between staff members	Verbal abuse	Pushing shoving	Threat	Physical attack on staff	Physical attack on customer	Physical attack on property	Fight - 2 people	Fight - more than 2 people	Injury to customers	Injury to staff	Damage to property	Weapons involved	Rpt'd to ADR

Initials D.D.B

INCIDENT DIARY INSTRUCTIONS

This diary is completely independent of the normal reporting of violent incidents to the company. Please continue to report to the company exactly as you would have done had you not been keeping the incident diary.

Ensure that <u>all</u> your staff know this exercise is happening and that they will tell you about any incidents. When completing the diary, get the staff who were involved in, or who witnessed, the incident to decide which columns should be ticked.

INCIDENTS can include a whole range of happenings from verbal abuse to serious physical attack. VIOLENCE is any behaviour deliberately intended to damage staff, customers or pub property either physically or psychologically (through abuse or threat).

FILLING IN THE INCIDENT DIARY

When a violent or problem incident occurs, make an entry on the table for that day:

1. Fill in the time it occurred in the column on the left of the sheet (column 1).
2. Put a tick in as many of columns 2 - 15 as you need to describe the incident. These columns represent who the problem or conflict was between (columns 2 - 4), what sort of aggressive action(s) occurred (columns 5 - 12), and what injury or damage resulted (columns 13 - 15).
3. In column 16 write in any weapon that was in evidence during the incident.
   Note: a 'weapon' includes any objects used, or threatened to be used, to cause harm, not just obvious weapons such as knives or guns.
3. Put a tick in the extreme right hand column (column 17) if the incident is being reported to the company (area manager, security etc.), otherwise put a cross.
4. *If you wish* to add any comments about the incident, write them on one of the additional sheets provided. (Remember to put day and time so the incident can be identified.) Extra information would be very much welcomed.

At the end of each day:

1. Check that any incidents have been entered. If no incidents have occurred, put a diagonal line through that day's table.
2. Initial the table for that day in the space provided.

At the end of the fortnight:

1. Write any more comments that you have to make on the additional sheets.
2. Send the completed incident diary to Di Beale at Nottingham, in the envelope provided.

Please send the diary even if there have been no incidents to record!

APPENDIX 8: CALCULATION OF COHEN'S KAPPA AND *Z* SCORES

Kappa, κ, is a measure of agreement that takes into account the agreement that would be expected by chance. Its calculation was outlined by Cohen (1960). The *z* scores and thus the significance levels were determined following a procedure outlined by Bakeman and Gottman (1986) based on the sampling distribution of kappa described by Fleiss, Cohen and Everitt (1969). The calculation is as follows, where:

P_O is the proportion of agreement observed:

$$P_O = \frac{\text{Sum of the tallies on diagonal}}{\text{Total number of tallies (N)}}$$

P_C is the proportion of agreement expected by chance:

$$P_C = \sum_{i=0}^{k} P_{i.}P_{.i}$$

where $P_{i.}$ is the probability that a tally will fall in the *i*th *row* and $P_{.i}$ is the probability that a tally will fall in the *i*th *column*

Cohen's kappa:

$$\kappa = \frac{P_O - P_C}{1 - P_C}$$

Variance of Cohen's kappa, based on the sampling distribution of kappa described by Fleiss, Cohen & Everitt (1969):

Variance of κ

$$= \frac{\sum_{i=1}^{k} P_{i.}P_{.i}[1 - (P_{.i} + P_{i.})]^2 + \sum_{i=1(i\neq j)}^{k}\sum_{j=1}^{k} P_{i.}P_{j.}(P_{.i} + P_{j.})^2 - P_C^2}{N(1 - P_C)^2}$$

SD of κ

$$= \sqrt{\frac{\sum_{i=1}^{k} P_{i.}P_{.i}[1 - (P_{.i} + P_{i.})]^2 + \sum_{i=1(i\neq j)}^{k}\sum_{j=1}^{k} P_{i.}P_{j.}(P_{.i} + P_{j.})^2 - P_C^2}{N(1 - P_C)^2}}$$

$$z = \frac{SD_\kappa}{\kappa}$$

Table A8.1 Initial problem agreement matrix

		RATER 2						
		A	B	C	D	K	L	Row total
RATER 1	A	1	0	0	1	0	0	2
	B	3	10	0	0	0	0	13
	C	2	0	15	0	0	2	19
	D	0	0	0	5	0	0	5
	K	0	0	0	0	4	0	4
	L	0	0	1	0	0	2	3
Column total		6	10	16	6	4	4	46

$$P_O = \frac{37}{46} = .8043; \quad P_C = \frac{504}{2116} = .2382$$

$$\kappa = \frac{.8043 - .2382}{1 - .2382} = \frac{.5661}{.7618}, \quad \kappa = .7431;$$

$$z = 9.8; \quad p < .0001$$

Table A8.2 Subsequent events agreement matrix

		RATER 2																							
		Ø	E	F	G	H	J	M	N	O	P	Q	R	S	T	U	X 1	Y 1	Z 1	X 2	Y 2	Z 2	X 3	Y 3	Z 3	Row total
	Ø	-	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	2	0	1	1	0	0	0	0	7
	E	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	F	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	G	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
	H	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	J	2	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
	M	1	1	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
R	N	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
A	O	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
T	P	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
E	Q	2	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	13
R	R	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	5
1	T	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
	U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
	X1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Y1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	2	0	6
	Z1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	5
	X2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	21
	Y2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	3
	Z2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	9
	X3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4
	Y3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	Z3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7
Column total		20	9	1	5	2	29	4	23	0	3	12	1	4	3	5	1	6	3	22	4	7	3	4	6	177

$$P_O = \frac{141}{177} = .7966; \quad P_C = \frac{2495}{31329} = .0796$$

$$\kappa = \frac{.7966 - .0796}{1 - .0796} = \frac{.7170}{.9204}; \quad \kappa = .7790;$$

$$z = 46.7; \quad p < .0001$$

Table A8.3 Agreement matrix for forward empirical pathway map,

cut off = .15

		Set 1		
		Present	Absent	Row total
Set 2	Present	43	3	46
	Absent	6	34	40
	Column total	49	37	86

$$P_O = \frac{77}{86} = .900; \quad P_C = \frac{3734}{7396} = .505$$

$$\kappa = \frac{.900 - .505}{1 - .505} = \frac{.395}{.495}; \quad \kappa = .798\,;\ z = 7.39;\ p < .0001$$

Table A8.4 Agreement matrix for backward empirical pathway map,

cut off = .15

		Set 1		
		Present	Absent	Row total
Set 2	Present	39	5	44
	Absent	2	40	42
	Column total	41	45	86

$$P_O = \frac{79}{86} = .919; \quad P_C = \frac{3694}{7396} = .499$$

$$\kappa = \frac{.919 - .499}{1 - .499} = \frac{.420}{.501}; \quad \kappa = .838;\ \ z = 7.76;\ p < .0001$$

Table A8.5 Agreement matrix for forward and backward models,

cut off = .15

		Forward map		
		Present	Absent	Row total
Backward map	Present	36	8	44
	Absent	13	29	42
	Column total	49	37	86

$$P_O = \frac{65}{86} = .756; \quad P_C = \frac{3710}{7396} = .502$$

$$\kappa = \frac{.756 - .502}{1 - .502} = \frac{.254}{.498}; \quad \kappa = .510;\ \ z = 4.76;\ p < .0001$$

APPENDIX 9: WEAPONS INVOLVED IN INCIDENTS

Glasses
Furniture
Guns (real and imitation)
Ash trays
Pool cues and balls
Knives
Bottles
Pork pie and other food
Stanley knives
Piece of pipe
Pick-axe handles
Iron bars
Baseball bats
Briefcase/suitcase
Hammers
'Noxious gas'
CS gas canisters
Ammonia sprays
Axes, hatchets
Pieces of concrete
Cut-throat razors
Eggs, chips
Dog chain
Stiletto-heeled shoe
Lumps of wood
Victim's tie
Starting handle
Steel toe-capped industrial boots
Bits of broken window
Shillelagh
Keys
Miner's lamp
Large rings
Lighted petrol
Pieces of broken door
Bar stools
Table leg
Bricks
Piece of lead pipe
Pick-axe
Drain pipe
Drinks tray
Lighted rags soaked in petrol
Rottweiler dogs
Large stones
Petrol bombs
Sling with metal nuts
Pool cue rest
Starting pistol
Broken mirror
Guinness display
Surgical scalpel
Yawara (a karate weapon)
Range Rover and other cars
Catapult
Poker
Concrete paving slab
Table
Fire extinguisher
Fire
Warming pan
Staves
Car jack
Van
Wheelchair kerb ramp
Sword
Beer crate
Galvanised mop bucket
China cups
Bollard
Tin of paint
Window box
Tomahawk
Base of garden umbrella
Bag of rubbish
Car clutch cable
Carbon dioxide cylinder
Beer kegs
Crash helmet
Christmas decoration
Meat cleaver
Rice flail (martial arts)
Light bulbs
Paint
Wheel brace
Bicycle (thrown at window)
Monkey wrench
Cigarette machine
Cigarette
Crooklock
Knuckledusters
Crowbar
Dustbin lid
Terracotta shrub tubs
Spike disguised as pen top
Firework
Explosive device (gunpowder)
Scythe (from pub bric-a-brac)
Wooden pallet
Garden furniture
Garden fork
Golf clubs
Pen
Crib board
Shelf fitting
'Pepper gas' can
Oven spray
Steering lock
Mobile phone
Chisel
Fence paling
Scissors
Piece of staging
Monkey wrench
4 x 4 vehicle (driven through wall into bar)
Lump hammer
Sword stick
Hosepipe/water
Rope barrier stands
"A" board
Toilet seat
Sunbed