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Child Accident/Injury Prevention in Risk Society: A Critical Analysis

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Abstract

Unintentional injury is now the principle cause of child death in developed nations, and the prevention of it has become a key focus of health professionals. This paper presents a sociological/philosophical enquiry into child accident prevention discourse and its implications for practice. With a critical distillation of major child accident prevention literature spanning the last two decades, significant findings, recommendations and themes are identified. It is observed which preventative measures have been deemed successful, with the placement of strategies into the appropriate 'E' category – education, engineering, enforcement, and environment. This process demonstrates the difficulties with and paradoxes inherent in the notion of accident prevention and buttresses a central hypothesis: that the child accident or injury in risk society is simultaneously predictable and random; knowable at a statistical level but enigmatic at an individual one. The accident, previously configured as unpredictable and inexplicable, has become wholly subject to risk society's *raison d'etre*, the laws of probability, and is thus rendered predictable and preventable on a magnified scale.

Keywords: accidentology, injury, prevention, rationality, risk, uncertainty

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Prevención de Accidentes y Daños Infantiles en la Sociedad del Riesgo: Un Análisis Crítico

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Resumen

Los daños imprevistos son hoy en día la principal causa de muerte de niños y niñas en los países desarrollados, y su prevención se ha convertido en un aspecto central para los profesionales de la salud. Este artículo presenta una investigación filosófica y sociológica sobre el discurso de prevención de accidentes infantiles y sus implicaciones prácticas. A través de una síntesis crítica de la principal literatura en prevención de accidentes infantiles, el artículo identifica resultados, recomendaciones y temas significativos. Se observan qué medidas preventivas han resultado exitosas, situando las estrategias en la apropiada categoría 'E' -educación, ingeniería, ejecución y entorno. Este proceso demuestra las dificultades con, y las inherentes paradojas de, la noción de prevención de accidentes, y refuerza la hipótesis central: que los accidentes o daños infantiles en la sociedad del riesgo son simultáneamente predecibles y aleatorias; cognoscibles a nivel estadístico, aunque enigmáticas a nivel individual. El accidente, *a priori* establecido como impredecible e inexplicable, se ha convertido completamente en la razón de ser de la investigación de la sociedad del riesgo, en una cuestión de probabilidad, transformándose, de esta manera, en algo predecible y prevenible a nivel macro/ a gran escala.

Palabras clave: accidentología, prevención de daños, racionalidad, riesgo, incertidumbre

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Accidents retain a power to disturb simply as a reminder of the limits of rational cosmologies and of our tenuous control over the worlds that they describe

– Judith Green, 1997a, p.34.

Introduction

The following pages present a sociological/philosophical enquiry into an area that is largely taken for granted; one usually considered 'unquestionable and mundane' (Green, 1997a). For sociology, the accident as it has typically been defined has not been of concern as it is not amenable to classical analysis. It is a marginal, random happening that when patterned ceases to be an accident. If a phenomenon has no discernible structure and is devoid of much agency, as the 'ideal' accident has been constructed, a sociological enquiry into such necessitates a novel approach[1]. The concept of the accident is discussed here, along with its treatment within the discourses of child accident prevention and risk. We also address the ways in which the concept of prevention is integral to risk society.

With childhood disease brought largely under control, unintentional injury is now the principle cause of child death in developed nations, and the prevention of it has become a key focus of health professionals. Yet the case can be made that rates have variously reduced, advances have been made, and that child injury deaths therefore represent a small and diminishing problem[2]. Nonetheless, it is child injuries *per se*, both mortality and morbidity rates, that is of current concern. This paper examines some of the developed world's chief child injury/accident prevention literature, identifying key discursive elements and points of consensus.

While the term 'accident' has been replaced with 'injury' in most of the professional literature –a modification that will be inspected later– this paper uses the term 'accident' in an exercise of recuperation[3]. Use of the term is also necessary to chart its fall into disfavour and to demonstrate the paradigmatic shift from the certainty that characterised rational modernity to the attempts to control the uncertainties that characterise 'high-modern' risk society (Giddens, 1991).

The overall aim is to explore the extent to which 'accident prevention' is possible, and perhaps aid in the creation of a more authentic approach to child accident/injury prevention[4], one that recognises the complexities and realities of the sometimes irrational and unpredictable everyday life that constitutes children's (and adults') interaction with their environment[5]. In other words, this study acknowledges that all risks to child safety can be only theoretically calculable; in practice, it shall be argued, there is still such an event as the accident. Prominent themes are rationality, risk, anxiety, uncertainty, and blame, with a cameo appearance by Sweden.

The Literature

This study undertakes a critical distillation of major child injury/accident findings and recommendations on an international developed-world level, identifying the significant themes that have emerged from child accident prevention literature spanning the last two decades. As a rather selectively random review, it will examine meta-reports from the United Nations Children's Fund [UNICEF] (2001); the World Health Organization [WHO] (2008); the National Center for Injury Prevention and Control of the Centers for Disease Control and Prevention [NCIPC-CDC] (2012); Safekids New Zealand (Alatini, 2009); and the more general injury prevention strategies from New Zealand's Accident Compensation Corporation [ACC] (2005) and Britain's Royal Society for the Prevention of Accidents [RoSPA] (2013).

As much as is possible (limitations outlined below) it is observed to what extent preventative measures identified in the literature have been successful through isolating critical differences in strategies. Preventative strategies are placed into the appropriate 'E' category –education, engineering, enforcement, and environment– and assessed for perceived effectiveness. It is during this process that the difficulties and paradoxes become apparent and buttress a central hypothesis: namely that the child accident or injury in risk society is simultaneously predictable and random (although the randomness is now ideally minimised if not eradicated), and it is because of this that prevention as such remains generally elusive and a challenging phenomenon to calibrate.

An examination of the wider literature will identify common themes in the general discourse of child accident/injury prevention. While it is recognised that there are preventative strategies that appear to have achieved a measure of success (how 'success' is defined is problematic too) at the statistical level (the case for Sweden is persuasive), the limitations of epidemiological mapping are recognised in the tension between macro- and micro-forces, what statistics tell us and lived experiences, and predictability and chance.

Particular use will be made of Judith Green's (1997a) *Risk and misfortune: The social construction of accidents*, which traces the changing conception(s) of the accident to its current day incarnation of a category which, in a society obsessed with calculating and managing risk, should not exist. Her work demonstrates, among many other things, the persistent disjuncture between theory and practice with regards to accident prevention.

Methodology/Theoretical Framework

As mentioned, measuring the effectiveness of child accident/injury prevention initiatives is an exercise in disconcertion. How can we know when an accident or unintentional injury has been prevented? While injury circumvention can ostensibly be measured in some cases, there is no way of measuring how many children did not have an accident who otherwise would have[6]. Nevertheless, research of this kind would seemingly begin with the statistical evidence, surmising causality or simply correlation, though whether a *particular* measure has prevented a *particular* child injury cannot be ascertained with certainty. It could potentially be *inferred* through causal, deductive reasoning, yet what might be 'true' at the general level may not be true for specific cases.

Initially it was anticipated that this study would walk a line between the formalism of traditional means of accident prevention and 'risk' research (in that there would be some utilisation of 'rates' and 'statistics') and a post-modernist critique that largely eschews relevance. Such a line however, is redundant. As Green (1997a) outlines, an 'accident' is unequivocally defined with reference to social norms about responsibility. Therefore, statistics are unreliable in that they will only reflect that which was (selectively) socially

and legally defined as an accident at the time. Douglas (1967) asserts that official statistics are "…useless for the purpose to which they are put in sociological research – being merely tautological indicators of the subject under study" (cited in Green, 1997a, p. 86). If this study is to be a robust enquiry into child accident/injury prevention discourse and initiatives, the conventional, inclusive of the statistical, needs to be problematised and marginalised, so that alternative epistemologies may come to the fore.

Thus, this study bequeaths the child accident as a social fact to epidemiologists, and instead takes an approach that incorporates chance and contingency as legitimate areas of sociological enquiry; albeit, as Green (1997a) points out, areas that are potentially rather disturbing[7]. It does not seek to reveal the structured causes of child accidents and the effectiveness of preventative strategies so much as to assess the discursive determinations of normativity: How is the accident configured in risk society? How is prevention talked about? Whether particular preventative measures are effective will also be discussed, but as an issue that is necessarily problematised due to the definition of both 'accident' and 'effectiveness', the proposed solutions, and the existential difficulties of measuring 'prevention'. The most apposite theoretical basis for this study is a post-structural one, which seeks, as does Foucault (Lye, 2008), to (re)instil an episteme of chance, discontinuity and materiality.

The Accident

In determining the connotations of the term 'accident', Friedrich Nietzsche's 'effective history' (cited in Fendler, 2010, p. 42) is edifying: instead of a mirror held up to the past in order to reveal 'the truth', Nietzsche employs a lever to excavate the ways in which truths have been constructed[8]. In employing this approach to conceptions of the accidental, there is no linear march towards a more progressive or total conception whereby earlier notions are thought to be deficient, primitive or strange, but rather recognition of the diversity and status of various conceptualisations, producing a genealogy that "de-naturalizes and exposes the strangeness of the present" (Macintosh, 2008, p. 3). Moreover, there is no singular view of

the accident at any given time, only contextual understandings, some of which are privileged over others.

Before the diffusion of western rationality, misfortunes were typically attributed to a metaphysical entity –witchcraft, the gods, ancestors– and thus had a reason for occurring (Evans-Pritchard, cited in Green, 1997a). The unfortunate event now known as the accident was either willed by spiritual forces or floated outside conceptual frameworks. According to Green (1997a), speaking of an accident became possible with the emergence of the European Enlightenment's rationality and deterministic notions of direct cause and effect. Here, the accident became a 'left-over' category wherein causality could not be determined.

As Green (1997a) explains, this was to change with the rise of the notion of risk which stemmed from a fracturing of the consensus around rationality[9]. As the products of scientific advancement became problematic in their side effects and the race toward progress less assured (Sorensen & Christiansen, 2012), the accident became a prime site for analysis and calculation. With spiritual explanations long-rejected, and rational explanations rendering the accident inexplicable, unpredictable, and on the outer parameters of determinism, the accident, says Green (1997a), became subject to the newly mapped laws of *probability*. Here, random events become predictable. The accident could be, at least theoretically, comprehensible within a rationalist framework as more and more risk factors were teased out by the growing field of epidemiology. At the macro-level, the accident no longer 'just happened' with no need for further enquiry; the accident became a thing in-itself that could be predicted and thus prevented. If prevention failed, then someone, somewhere, had failed through negligence of the *known* risks, and that failure would need to be uncovered. The prevailing social construction of the accident shifted from being deemed by the gods, to a random unfortunate event, to, at this point within risk society, a preventable occurrence. The accident victim has similarly moved from being cursed, to being unlucky, to being interrogated and often blamed[10].

However, Green's (1997a) focus-group based studies of both adults' and children's stories about accidents paint a more ambiguous picture of the accident in regard to how such an event is conceived within everyday life.

For everyday people –mothers, children– the accident is simultaneously predictable (risks are calculated and managed) and unknowable (appeals to fate in that 'accidents will happen' or that some folk are just 'accident prone'), which illustrates the uptake of a risk discourse sitting a little awkwardly alongside notions of the accident from previous eras. In accepting a discourse of risk management the discourse of individual responsibility is implicit. The contradictory view of the accident also demonstrates the split between theory and practice: what is theoretically calculable is not individually applicable. The accident can be predicted at the statistical level and precautions can be taken by individuals, yet given this, when an accident occurs despite precautions there can often be no explanation other than it 'just happened' –a 'real' accident. This occurs usually, Green (1997a) found, when responsibility for the accident cannot be isolated. She stresses that 'lay' people do not have an under-developed conception of the accident nor are they ignorant of the risks[11]. As it turns out their logic is similar to that of the professionals –she has noted similar ambiguities within professional accident prevention discourse, the law, and policy[12]. Perhaps, though, in everyday discourse the paradoxes are more apparent.

Accidents then, are a contextual, discursive construction. Green's (1997a) qualitative research shows that they are events that we have to make sense of in personal terms, rather than as part of a population risk profile. Current usage of the term accident denotes a phenomenon that is both controllable and unwieldy; without blame yet apportionment of blame is usually sought; and predictable yet frustratingly enigmatic. The concepts of the controllable, blameworthy, and predictable as they sit within an explanatory framework of risk will now be appraised.

Risk Society and the Accident: Ordering the Disordered

Studies of risk, according to Green (1997a), have become something of a cottage industry –incorporating risk analysis, which is event and process-driven, and social theory, which examines and critiques the *construction* of risk and safety– something of an 'academic bricolage'. Those of the latter category conceptualise 'risk society' and describe how within late modernity

actions are organised in terms of perceived risks[13] while risk analyses contribute to attempts to aggregate and mitigate such risks[14]. Those who theorise risk would charge those who analyse risk with reification: notions such as 'safety' and 'accident' have become things existent 'out there' separate from the individual and their social context. The risk society emerges when a negative side-effect of industrialised society comes to be, and is perceived as, an entity in and by itself (Sorensen & Christiansen, 2012). In the same vein, Madge and Barker (2007) posit the notion of risk as a 'floating signifier' and suggest that the term has a more secure base than the behaviours and events it seeks to explain.

According to risk society theorists (Beck in particular) we have made the transition away from industrial society, wherein negative side effects were either ignored or unknown as progress was key, into the risk society, in which these side effects take up more and more discursive space. The risk society is one where uncertainty has re-entered, previously thought to have been banished by the triumph of science and rationality over the mystical and magical, but now present in the form of exposure to hazards produced by technological development (climate change, work-place accidents, car crashes). Such hazards cannot be allowed to remain unfathomable or unpredictable within a rational worldview however; they must become re-configured as risks –uncertainties that are paradoxically rendered determinable and calculable. As Green (1997b) points out, the contemporary management and understanding of misfortune relies on our (perceived) ability to monitor and manipulate risks in most areas of our everyday lives. The supposition that the hazards we face can be quantified and managed underlies both the risk assessment industry and the discourse of individual responsibility.

In a society that is fixated by risk and its management, the accident is central: "That an accident has happened denotes that risk has not been adequately managed" (Green, 1997a, p. 13) and signifies supposedly residual irrationality. As Hacking (cited in Green, 2007) puts it, we have 'tamed chance', so that accidents, like other seemingly random happenings, now sit within a "coherent framework of probabilistic understanding, and individual events become calculable as instances of aggregated trends" (Green, 2007, p. 32). Under this paradigm, the individual becomes a

'constellation of risks' to be monitored and regulated –by both the self and the 'professionals' (Castel, 1991). When an accident occurs, the individual is no longer just an unfortunate victim, but a repository for liability, negligence and epidemiological speculation. Contemporary child accident prevention literature asserts that child accidents are predictable and preventable. The term 'accident' therefore becomes inaccurate, so these occurrences are instead termed 'unintentional injury'.

Risk, Responsibility, and Anxiety

In pre-rational times, unfortunate events had meaning and responsibility for them sat with the gods, the spirits or 'fate'. Within rational modernity, the unfortunate event became an accident; it came to have no meaning in that it was just coincidence and ideally no-one could be held responsible. This meant there was a measure of sympathy for the victim –they were simply 'in the wrong place at the wrong time'. The passage into risky times has seen meaning (or at least the search for it) re-enter the frame and responsibility is located with those who miscalculated or were 'ignorant' of the risks. Meaning is attached to finding out why the accident happened (i.e. who failed to take adequate precautions based on known risk factors), attributing responsibility, and seemingly trying to ensure it 'doesn't happen to anyone else' (see Clarke & Van Amerom, 2007). This trajectory of implication and accountability traces the cultural curve into risk society, and demonstrates the existential need for certainty in a progressively more uncertain world, but how attempts to achieve that certainty –probabilistic calculations of random events– succeed in creating more uncertainty and anxiety.

Demonstrating how risk society's model of probabilities is unable to achieve the certainty it craves and promises (and at times, demands), is Irish mathematician George Boole's (1951) statement that

> (p)robability is expectation founded upon partial knowledge. A perfect acquaintance with all of the circumstances affecting the occurrence of an event would change expectation into certainty, and leave neither room nor demand for a theory of probabilities.

It may be that a 'perfect acquaintance' with the confluence of factors that contribute to an individual accident is not possible within the theoretical sphere of probabilities, and even less so at the experiential level[15]. Thus, as Green (1997a) argues, mapping the rates of accidents does nothing to help predict any individual event.

Responsibility is crucial to framing the accident in risk society –an accident is genuine only if no culpability can be isolated. Yet even in such cases, culpability is pinned to not so much the will of an individual or group (accidents are 'unintentional'), but to their *lack* of responsibility and negligence of the risks. The fact that an accident occurs in a universe where risks and preventative measures are known, means there has been a failure of risk calculation. Risk society, in its quest for certainty and order amid cumulative chaos, must punish 'bad deeds'; not, as in earlier times, 'bad thoughts or character' (Leiter, 2013). For Nietzsche, all such morality is abhorrent, but necessary for what he sees as a certain stage of human character. *Accidentality* is the true character of everything that happens, according to Nietzsche, yet he despairs that

> (t)he ability and willingness of the human mind to grasp the accidental are both very limited. Our natural tendency is to interpret events in a way that provides an explanation, even a contrived one (Small, 2010, p. 42).

Green (1997a) suggests that the inability of rational explanatory systems to provide understanding for personal misfortune engenders a search for meaning. When no sense is found, rather than acceptance of the random, there is attribution of blame. Yet individuals were at one time not held responsible for their own –or their children's– misfortunes, which evokes the 'strangeness' and contingency of the present construction of the accident. Nietzsche (cited in Small, 2010, p. 36), in his disdain for the search for causality, contends that

> (w)herever responsibilities are sought, it is usually the instinct of wanting to judge and punish which is at work…the doctrine of the will has been invented essentially for the purpose of punishment, that is, because one wanted to impute guilt.

Child Accident/Injury Prevention: The Wider Literature

The Three 'E's

The three 'E's are a well-known framework within the accident/injury prevention sphere, in which most prevention strategies fall into one or a combination of these categories: **Education**, **Enforcement**, and **Engineering**. Educational initiatives aim to inform the public or targeted 'at risk' groups about potential risks and safety options and usually take the form of 'awareness raising' campaigns (advertisements depicting the effects of drink-driving or speeding). Enforcement initiatives use the legal system to influence both behaviour and the environment and typically involve regulations requiring the use of certain safety equipment and adherence to safety standards, with penalties enforced for non-compliance (compulsory use of seat-belts, bicycle helmets, car seats). Engineering initiatives use environmental and equipment design modifications to reduce the chance of an accident/injury event or to minimise injury by reducing the amount of energy to which someone is exposed (airbags, stair gates, street design). Engineering initiatives can be either active, where effort and repeated action is required by the user (using booster seats, installing and maintaining a working smoke alarm), or passive, which do not require any effort from the person being protected (fences, safety surfacing on playgrounds). Such passive engineering efforts form another 'E' category: **Environment**. The literature generally endorses environmental initiatives as the most effective – often in combination with enforcement as well as the more active engineering measures. Most suggest that effective injury prevention efforts require a combination of all the 'E's.

The literature demonstrates a long period of observation on the merits of accident prevention educational programmes, yet their success or otherwise remains inconclusive/elusive. For example, the 2001 UNICEF report *A league table of child death by injury in rich nations: Innocenti report card* shows that:

> It has rarely been possible to evaluate (these) individual interventions with any great precision. Because child injury deaths are rare events, studies of the effectiveness of safety campaigns

> demand large sample sizes and prolonged evaluation periods. Add to this the fact that any one measure can seldom be isolated from other social and environmental changes and it is easy to see why hard evidence for the effectiveness of these different safety campaigns is hard to secure (UNICEF, 2001, p. 12).

The report goes on to document what *can* be proven to reduce the likelihood and severity of child injury, pointing to measures such as drink-driving laws, safer car design, the use of child seats and rear seat restraints, the wearing of cycle helmets, childproof packaging of pharmaceuticals and safety standards for toys and games, safety glass, window bars, stair gates, playground safety standards, the fencing of swimming pools, and campaigns to ensure that most young children learn to swim. All but the last of these initiatives are ones of **Engineering, Enforcement**, or changing the physical **Environment**. Learn to swim campaigns, while **Educational** in nature, provide not just information but a practical, primary preventative skill.

The majority of the current literature reaches similar conclusions with regards to proven efficacy. Despite this, most persist in recommending educational strategies. This can be partially explained by the findings of UNICEF's (2001, p. 23), *Innocenti report card* wherein a table was presented evaluating road safety measures that had proved effective in developed nations. It established that overall, educational initiatives had the least efficacy, but were the *most affordable and feasible*. Part of this lack of efficacy was explained by the difficulty of measuring the outcomes of educational initiatives. While enhanced levels of knowledge can be ascertained, any reduction in the accident/injury rate cannot be demonstrably linked to that enhanced awareness.

A further explanation for the persistence of educational strategies despite their lack of proven effectiveness is one advanced by risk theorists. Both Beck (1992) and Giddens (1991) maintain that since the latter half of the twentieth century, responsibility for the management of risk has increasingly become a privatised activity. As Green (1997a) points out, risk society has diffused responsibility for safety from 'experts' to individuals. Here, accident prevention is not so much a public good, but an individual responsibility. As educational strategies typically address individual actions, they are deemed to be the most appropriate and 'successful'. For Green

(1997a), the focus on education in child accident prevention serves to mask the structural inequalities that pattern accident rates and instead utilise a 'victim blaming' ideology. Further, it hinders the development of collective action and reinforces the construction of parents as having the sole responsibility for the safety of their children.

One organisation that exemplifies the individualisation or 'privatisation' of risk and safety is Great Britain's Royal Society for the Prevention of Accidents[16] (RoSPA). In their publication *The big book of accident prevention* (2013), the authors imply it should be evident to everyone that "Accidental injury prevention is low cost and high impact. It is easy to deliver (there is a well-worn pathway of best practice) and it is broadly welcomed by the people it helps" (p. 3). The preventative methods referred to are focussed on information and education, and in a departure from the general consensus around what is effective, RoSPA sees educational programmes as one of the proven and most effective forms of public health intervention[17]. Education is the preferred strategy not only due to its relatively low cost, but arguably because it is a good fit for the discourse of individualism. With an emphasis on the disadvantaged, RoSPA declares that: "People need to be empowered (through knowledge) to make their own safety decisions. After that, they should be expected to take responsibility for themselves and their loved ones" (p. 24).

While the publication presents case studies to demonstrate how specific injuries can be successfully prevented through the use of safety programmes, evaluation relies on reported satisfaction with the programmes and levels of knowledge. Where statistics are used to try to demonstrate a causal link between a drop in injury rates –hospital admissions were used– and the success of safety programmes, all that can be surmised is that the reduction in the annual rise of hospital admissions[18] "appears to have been the result of the programme". If any link could be made, it could possibly be due to the fact that the safety programme included the provision of free safety equipment (safety gates, fire guards, cupboard locks, bath mats and blind cord shorteners) which constitute the more substantiated environmental and engineering strategies.

Overall, the literature is in accord with the perceived efficacy of accident/injury prevention measures that change the physical environment.

These measures are primary in nature[19] and as such form the crux of accident prevention. The literature is also largely in agreement with the notion that all 'E's should be used in combination for maximum effectiveness. While there are those (RoSPA) who in general recommend purely educational initiatives, most endorse education as a supplement to environmental, engineering and enforcement initiatives[20]. It is within these multi-fold accident/injury prevention enterprises that education is seen to be most helpful.

Salient Findings/Themes/Recommendations

Accidents are preventable

Along with the major finding that environmental modification is the most effective method of preventing childhood accidents, perhaps the most obvious theme across the literature is the notion that accidents are preventable –an idea that underpins the existence of accident prevention organisations situated within a discourse of risk. Of the reports examined, almost all were initiated with a statement emphasising the predictability and preventability of accidents/injuries. Incorporating an educational approach, the first objective of the *New Zealand injury prevention strategy 2005/08 implementation plan* is to "Raise awareness and acceptance that most injuries can be prevented" (ACC, 2005, p. 10), while the United States' *National action plan for child injury prevention* (NCIPC-CDC, 2012) asserts that "These (child) deaths and injuries need not occur, because they often result from predictable events". RoSPA's (2013) *The big book of accident prevention* is more confident, proclaiming/imploring that "Accidents are 100 per cent preventable, so why not prevent them" (p. 5)? In comparing child injury rates across OECD nations, with Sweden's being the lowest, UNICEF's (2001) *Innocenti report card* somewhat redundantly states that "At least 12,000 child deaths a year could be prevented if all OECD countries had the same child injury death rate as Sweden" (p. 2). Alatini for Safekids New Zealand (2009, p. 11) concurs that "most unintentional injuries are predictable and therefore preventable".

With the exception of RoSPA, the organisational literature accepts that not all accidents are preventable, yet it is regularly reiterated that *most* are.

Which accidents then, are not preventable? *Real* accidents? The contemporary definition of a 'real' accident is slippery: the space in which 'real' accidents occur is diminished by increasing the domain of the known and patterned (Green, 1997a), yet it would seem even here there is a 'left-over' category that sits outside the explanatory framework of risk. Demonstrating the disjuncture between the statistical and individual levels, the problems with measuring prevention, and the implication of blame is Alatini's (2009) statement that "For some families, the emotional pain (of losing a child through accidental injury) is even greater if simple measures could have been taken to prevent the incident" (p. 14). If 'most unintentional injuries are predictable and preventable', why has this 'incident' occurred? It is either one of the 'left-overs' that was not predictable or preventable, or, the implication is, the family must have been ignorant and/or negligent. If simple measures could have been taken to prevent the incident, then why were they not taken? Attempting to determine these 'simple measures' after the fact serves only to apportion blame and heighten feelings of individual guilt.

A more unified effort

The literature posits a need for a cohesive, integrated approach to child accident/injury prevention. The consensus is that in any given nation (except Sweden…) there are too many agencies involved in child accident/injury prevention and that one main co-ordinating agency is required in order to implement broad strategies based on evidence. As the *European report on child injury prevention* (WHO, 2008) points out, Sweden was the first to recognise the importance of injuries as a threat to child health and to tackle the problem in a co-ordinated manner. Sweden has the lowest child accident/injury rate in the world, which the WHO report attributes to Swedish society's sense of corporate/collective responsibility; allowing a culture of safety to be nurtured and the protection of children to become a key societal goal.

The reports are unanimous in the assertion that *we already know what works*[21], but that child safety has not been fiscally and collectively

prioritised[22] and preventative efforts are typically piecemeal, making them generally unsuccessful and difficult to measure.

Those most 'at risk'

Not only do all the reports point to poverty/disadvantage as the single biggest risk factor, but many comment that this fact has been a common finding of previous research and that attempts to address it have been sorely underdeveloped. Other common risk indicators or correlations identified include gender, with boys having a higher incidence of injury; family size, with larger families more likely to experience child injury; lack of maternal education; single parenthood; unemployment; poor housing; and parental drug or alcohol abuse. As all of these factors (aside from gender) are closely associated with poverty, it seems the continual mapping of these risk indicators is a largely futile exercise. While some of the literature simply restates the salience of poverty in child accident/injury prevention research findings, others endeavour to address it specifically and prioritise it in their objectives and recommendations. UNICEF's (2001) *Innocenti report card* states, "…it is not difficult to see why economic poverty alone would increase risks to children", and points to proven risk-reducing interventions[23] that would benefit the under-privileged population that are not being implemented. While many of the recommendations that address the unequal distribution of child accident/injury sit within the existing framework of education (and increasingly, the new 'E' that reflects the redress of disadvantage – empowerment), there are some that go further. The *European report on child injury* (WHO, 2008) for instance, has this to say:

> Making children's environments inherently safer by using passive safety countermeasures can reverse the social inequities in injury. These interventions tackle the physical exposures that put children at risk. For example, ameliorating material deprivation at home by providing better housing and modifying the traffic environment to ensure that children are not exposed to dangerous situations have been shown to result in fewer injuries, thereby reducing the safety differentials between social groups (p. 3).

As it stands, the pervasive relationship between poverty and child accident/injury is seen as at the cutting edge of child accident/injury prevention. The broad consensus in the literature is that this area is under-researched[24] and suffering from a chronic lack of dissemination of proven preventative measures. The literature is in accord that if the factors that lead to the high accident/injury rate among the disadvantaged are addressed, the overall rate will reduce considerably.

Problems with Prevention

At the surface level, the notion of accident prevention seems to serve to reduce uncertainty and anxiety by constructing the accident as an occurrence that can be predicted –in theory. If it can be predicted, the logic follows that it need not happen. As noted previously, the prevention of child accidents/injuries in the developed world has become a primary health concern for professionals, built up over the latter half of the 20th century. The case of Sweden demonstrates how a concerted, sustained, collective effort involving all of the three 'E's (with emphasis on the environment) can reduce the child accident/injury rate[25]. Yet, prevention remains problematic on several levels. The first is the disjuncture between what is known at the statistical level and what occurs 'on the ground'. While Sweden has achieved an impressive reduction in its child accident/injury rate over the last 50 years, accidents and injuries naturally still occur (Jansson et al., 2006). Furthermore, the discourse that posits individual accidents/injuries as essentially preventable –through charting risk factors and taking precautions– in effect serves to increase anxiety. While statistics can display a change in the rate and analysis of that can (attempt to) pinpoint causality, at the individual level a different kind of sense must be made when accidents inevitably occur.

Another problem with prevention is the persistence of educational strategies despite scant evidence of their efficacy –perhaps indicating that both policy makers and researchers have reached somewhat of an impasse. If the objective is a reduction in the accident/injury rate, and the most effective strategies have been consistently identified as environmental, then the implementation of 'more education' can only inhibit that aim.

Demonstrating this perversity is New Zealand's Accident Compensation Corporation's (ACC) recent announcement that its largely educational prevention scheme has not been "having great impact" (ACC admits multi-million dollar prevention scheme failing, 2014), yet funding for its programmes is about to double to $40 million.

The effectiveness of preventative strategies, particularly those of an educational nature, will always be difficult to measure as there is an absence of tangibility. Added to that is the myriad of forces, both physical and social, that can converge at any time to produce an 'unfavourable occurrence'. Moreover, if a particular accident *has not* happened, there is no way of knowing at the individual level that it has been prevented[26].

From Accident to Injury: Erasure

Green's (1997a) discussion of the history of the accident notes the contemporary unease about the 'accidental' as a valid explanation for misfortune. It carries with it connotations of an arbitrary process, something unknowable and 'primitive' which society has outgrown. Chance events have been rendered predictable; thus the accident, as an event devoid of volition and clarity, no longer has a legitimate place. As Green (1997a, p. 112) points out, health professionals have long objected to the term 'accident', suggesting that it is "…somehow contaminated by 'lay' associations of an unwilled and unknowable process", citing one professional, Doege, who in 1978 proclaimed that it was "…time for medicine to dispose of the 'accident'" given that it is an "…ambivalent, misleading anachronism" (ibid). Another professional suggests that "…the word accident (should be replaced) by a more objective and crisp word" (Evans, 1993, cited in Green, 1997a, p. 112).

Presciently, in 1983 a field of 'injury control', rather than 'accident prevention' was advocated, which would focus on injuries as a result of the transfer of energy, enabling an "epidemiological model of human damage" (Roberts, cited in Green, 1997a, p. 112). In 2001 the demise of the accident became official when the British Medical Journal (BMJ) banned the use of the term, pointing out that accidents are not synonymous with injuries, but are instead "injury producing events" (Davis & Pless, 2001, p. 1320). The

journal decided to lead the way in rectifying the 'misuse' of the term 'accident', as the BMJ is "…a leading communicator in medicine (and) needs to establish or follow standards in language" (ibid). The function of this new standard in language is to leave no doubt that "most injuries and their precipitating events are predictable and preventable" –they are not chance occurrences or 'acts of God'.

The current focus on injury prevention rather than accident prevention reflects the transformation of the 'random accident' into the 'preventable accident' –an oxymoron. A benign explanation for this shift is that it is recognition that accidents are not preventable, but injuries are, and that the BMJ's transparent amendment to language serves to correct the misuse of the term 'accident' when 'injury' would be more appropriate. A more critical explanation – one that draws on Foucault –is that it is a *logophobic*[27] attempt to control the 'dangerous elements' of the unrestrained discourse of 'lay' people. Here, attempts to control discourse mask a fear of disorder (Lye, 2008). This shift is a way of erasing the accident, the ultimate disorderin a society that has convinced itself it has command of chance. Foucault (in Fendler, 2010), applies Nietzsche's archaeological method in order to excavate historical trajectories –not to uncover truths, but to identify changes in discourse. With gratitude to the BMJ, the authors of this paper have not had to 'dig' too much to locate this particular discursive shift.

Conclusion

"We don't live in a world that suffers from doubt, but one that suffers from certainty, false certainties that compensate for the well of worldly anxieties and worries."

– Les Back, The art of listening.

The only accident that is not preventable now, the discourse implies, is the 'ideal' accident –an occurrence lacking implications of responsibility, motivation or prior knowledge. Yet the accident, ideal or otherwise, is increasingly non-existent. Now wholly subject to the laws of probability, risk society's *raison d'être*, the accident is predictable on a magnified scale.

A preventable, predictable event cannot be properly termed an accident; therefore the focus has shifted from the event to the injuries it produces.

With regards to child accident/injury prevention, efforts in Sweden have proven successful in reducing the child accident/injury rate, reportedly due to a collectivised, cohesive, sustained programme with a focus on creating environmental barriers to injury. Other developed-world nations repeatedly refer and aspire to Sweden's success, yet preventative measures in other nations are typically piecemeal, detached from research and proven practice, overly focussed on education programmes, and to a certain extentirrational in the underpinning logic of preventability.

The knowability with which risk society frames the accident ostensibly serves to reduce uncertainty –something which humans by and large find discomfiting. However, the concepts of predictability and preventability in effect raise levels of anxiety as constant vigilance and assessment is required for an ever-increasing pattern of risks. Anxiety levels are increased too by the apportionment of blame when the (contradictory) predictable and preventable *accident* occurs.

The critiques contained in this paper are not intended to discount the efforts of accident/injury prevention professionals. Rather, it is hoped that the discussion will demonstrate the ways in which contemporary cultural concerns such as uncertainty and responsibility are inherent in the accident's construction (or deconstruction, as the case may be). Areas that have not been covered in depth, such asdisadvantage, gender, ethnicity and the distribution of risk; non-western cultural constructions of the accident; the world of insurance; the legal implications of the accident; and the 'overprotection' of children have significant potential for further critical study.

That which is known for certain is subject to material deterministic laws of cause and effect. At the statistical level, knowledge of risk is determined by the laws of probability in an attempt to establish certainty. At a local or individual level however, when it comes to the accidental there is little that can be known for sure. This is our paradox.

Notes

[1] Sociology has been concerned with industrial accidents and large-scale disasters (e.g. Perrow, 1984; Matthewman, 2012), but not so much with accidents at the micro-level.
[2] UNICEF, 2001.
[3] The use of the term 'accident' hasbeen something of a misnomer – one of its main uses has been to describe the *outcome* of an accident, which is often an injury. Using the term 'injury' may indeed be more accurate in these instances. The accident is the event or incident, the injury is the outcome.
[4] Although maybe this is too ambitious within a western rationalist discourse – Paul Feyerabend in *Farewell to reason* (1988) suggests that other worldviews may have a more 'functional' approach to accidents.
[5] Yet to do so would turn the accident prevention industry on its head.
[6] Although attempts have been made – see for example UNICEF's (2001) *Innocenti report card*.
[7] See theorists such as Michel Foucault (1972); Nietzsche (1887); and Richard Rorty (1982, 1989).
[8] Nietzsche expounded this approach in *On the genealogy of morals* (1887), one that has greatly informed Foucault's genealogical and archaeological style of historical enquiry.
[9] Although as Green (1997a) notes, for Foucault there was no single or comprehensive rationality – it was always already fractured.
[10] In the case of children it is their parents/caregivers who are subject to interrogation and blame.
[11] See the project undertaken with the Corkerhill community in Glasgow (Roberts, Smith, & Bryce, 1993).
[12] See too Reeve's (2006) examination of the split between macro- and micro-factors in child injury research and prevention in New Zealand.
[13] Notably Beck (1992) and Giddens (1991).
[14] See for example the child accident prevention literature that will be inspected later.
[15] Especially if "…disorder is far more probable than order" (Cole, 1998, p.134).
[16] Of the literature reviewed, RoSPA's is the only publication that uses the now professionally anachronistic term 'accident' instead of 'injury'.
[17] Despite inadequate evidence.
[18] The Safe at Home programme was targeted to children under 5 who were deemed 'at risk', yet the hospital admissions data examined post-programme encompassed unintentional injury admissions for all age groups.
[19] Injury prevention involves primary prevention, which aims to prevent the injury event (accident) in the first place; secondary prevention, which seeks to reduce the risk of injury once an event has occurred; and tertiary prevention, which aims to minimise the consequences of an injury (WHO, 2008).
[20] A car seat safety campaign coupled with legislation making them compulsory and safer car seat design is one example of a threefold initiative. Subsidised or free car seat rental is a further strategy that has been added to this for extra effectiveness.
[21] With the exception of RoSPA, which advocates an educational approach to accident prevention, it is widely accepted that environmental measures, encompassing engineering and enforcement initiatives, have been substantiated as the most effective.

[22] Again, with the exception of RoSPA, which advocates an individual approach to accident prevention.
[23] Such as Sweden's comprehensive programme.
[24] Although the value of more research is a contradictory arena – most organisations, while recommending further research, also agree enough is already known to implement effective preventative strategies for 'at risk' groups.
[25] See Why does Sweden have the lowest childhood injury mortality rate in the world? The roles of architecture and public pre-school services (Jansson, De Leon, Ahmed, & Jansson, 2006); and Sweden's experience in reducing childhood injuries (Bergman & Rivara, 1991).
[26] This absurdity was highlighted when Charles Dickens announced one December that he could not travel by train any more that year, "on the grounds that the average annual quota of railroad accidents in Britain had not been filled and therefore further disasters were obviously imminent" (Cole, 1998, p. 30).
[27] *Logophobia* is a Foucauldian concept that denotes a fear of the mass of spoken things (Lye, 2008).

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