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**Perceptions of Non-Accidental Child Deaths as
Preventable Events:
The impact of probability heuristics and biases
on child protection work**

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Abstract

Anxiety about the possibility of non-accidental deaths of children has had a major influence on child care policy and practice over the last 40 years. The formal inquiry reports and media coverage of these rare events serve to maintain the perception that these are regular incidents that happen far too often and that they could have been prevented. This focus on individual events tends to distort a clear view of the actual probability of non-accidental deaths and serves to reinforce the notion that potentially all child care cases are risky and that any social work practitioner could be involved in such a case. As a result, work with children has become highly risk averse. However, in statistical terms, the probability of non-accidental child deaths is very low and recently has averaged about 55 deaths a year. Children are at considerably higher risk of being killed on the roads.

This paper examines the way in which perceptions of the 'high' level of risk of possible child deaths are maintained despite the very low statistical probability of such incidents. It draws on thinking from behavioural psychology and, in particular the work of Kahneman and Tversky, to consider some of the biases in probability reasoning affecting people's perception of risk and explores how inquiry reports into single *past* events reconfirm risk perceptions. It is suggested that recognition of the essentially unpredictable nature of *future* non-accidental child deaths would free up childcare professionals to work in a more positive and less risk-averse manner in the present.

Introduction

In December 1985 the report into the death of Jasmine Beckford concluded, 'On any conceivable version of events under inquiry the death of Jasmine Beckford was both a predictable and preventable homicide.....' (London Borough of Brent, 1985, p.287). In other words, by acting or not acting as they should have, not only were particular people (i.e. professionals) to blame for her death, but it was not possible to even *imagine* any circumstances in which the ways the professionals behaved could possibly have made sense. The report then proposed many recommendations for restructuring and improving social work practice.

Twenty five years later in 2010, a serious case review in Salford into the murder of a 12-year old schoolgirl, Tia Rigg, said 'In these circumstances the death of Child H (Tia Rigg) was *not predictable or preventable....*' (Salford Safeguarding Children Board, 21010, para. 3.19, emphasis added). However, it then went on to propose a long list of recommendations as to how practice should change amongst social work and health professionals.

Although these two incidents may be quite different in the details of the events that took place, the outcome in both cases was the same: a child died non-accidentally and both led to formal reports. However, what is striking looking at the reports are the different approaches each takes to probabilistic reasoning. In the Jasmine Beckford report, the death of the child is presented as highly probable and it says that those working with the case should have anticipated such an outcome. On the other hand, the Tia Rigg report concludes that the child's death was highly improbable and could not have been foreseen by those involved. However, despite these different views of the probability of the particular children's deaths, there is still no change in the

apportioning of blame as, in both reports, the view is that professionals were at fault in some way, and so must change their practice. As Lupton says, drawing on Mary Douglas's (1992) perspective on risk, '...every death, every accident and every misfortune must be "chargeable to someone's account" – someone must be found to blame' (Lupton, 1999, p.45).

Bearing in mind these paradoxical approaches to risk in social work, this article examines how probability is viewed and understood in work with children, particularly in relation to child protection and non-accidental child deaths, and how this affects the way social work practitioners are able to respond to and make sense of risk in their every day practice.

The paper is divided into two parts. Drawing on available statistical information, the first part considers the actual probability of non-accidental child deaths occurring on a yearly basis. It also looks at the figures in relation to cases of child deaths where the child has, or has had, some contact with social care services and the implications this has for social work practice and the management of risk. One of the key factors analysed here is the impact of very low base rates, i.e. the actual number of non-accidental child deaths in relation to the child population under consideration, and the effect this has on the feasibility of risk prediction. The second part of the paper examines some ideas developed by the behavioural psychologists, Daniel Kahneman and Amos Tversky (Tversky and Kahneman, 1974; Kahneman *et al.*, 1982; Kahneman, 2011), concerning the limitations people often experience in relation to accurate probabilistic reasoning, and then applies them to social work understandings of the probability of non-accidental child deaths. Their work, and that of others in the field, has been highly influential in such disciplines as psychology, economics and business and their ideas have

reached a wider audience through a range of texts (Bernstein, 1996; Taleb, 2005; Lanchester, 2010) but they have received only limited attention in social work (Stalker, 2003).

A key aspect of Kahneman and Tversky's work was an exploration of how judgments are made under conditions of uncertainty (Kahneman *et al.*, 1982), which is, of course, a constant issue for all those working in the field of child protection. They identified a range of the heuristics, or 'rules of thumb', that people use to help them make decisions and the range of biases that can affect their decision-making processes. Some of the aspects of decision making they looked at were 'loss aversion', where people would rather avoid a negative (or loss) rather than achieve a positive; and heuristics such as 'representativeness', where a individual case is seen as representing a particular category and 'availability', when people assess the probability of an event by the ease with which examples can be brought to mind. Consideration is given to how these heuristics operate in assessing risk in child protection and the effects they have on judging the probability of particular outcomes. This section of the paper particularly draws on what is known as the 'hindsight' bias (Frischoff, 1982), where people, who have knowledge of the actual outcome (usually negative) of a situation, claim they know how those involved in the situation should have acted to prevent that outcome. This is a common feature of many inquiry reports into child deaths. The view that it is possible to 'predict the past', i.e. to argue retrospectively (as many Inquiry Reports do) that the professionals involved should have known that their actions or non-action would lead to a negative outcome, helps to maintain the perception both that non-accidental child deaths have a high probability and

that most could be avoided, if not eliminated entirely, by professional interventions.

What is the probability of non-accidental child deaths?

As with any such controversial topic, to come up with a definitive figure for the number of non-accidental child deaths is not a simple one. Firstly, there is the issue of definition - *what constitutes a non-accidental child death?* The word 'non-accidental' is being used here in a descriptive sense to cover child deaths that are not due to illness and other medical conditions or major traumatic events such as car accidents or falls. However, this still leaves a wide range of incidents that can be classified as non-accidental and can include such diverse causes of death as the fatal abuse and neglect of a two-year old over an extended period; a spouse, unwilling to accept the end of a relationship, killing their partner and children; a mother with a severely disabled child, unable to cope any more, jumping with her daughter to their death or a depressed teenager taking their own life. Sidebotham (2007) has attempted to categorise child deaths into different groups, which include infanticide/'covert' homicide, severe physical assaults, extreme neglect, deliberate homicides and deaths related to maltreatment. However, there are also cases where the cause of death is unclear, with the result that it then becomes difficult to decide how the death should be classified. These are, of course, in risk terms, categorisation problems, which is another theme of these special issues (*Health, Risk and Society*, Vol. 14. Issue 2), but is not one that I wish to focus on here. For the purposes of this paper, the aim is to identify an approximate yearly average for the non-accidental child deaths as a basis for the overall discussion.

Over the last ten years there have been a number of reports that have attempted to quantify the number of deaths as a yearly average. In 2003, in response to claims in national newspapers that child homicides had halved in England and Wales since the 1970s, Creighton and Tissier (researchers with the NSPCC) argued that non-accidental child deaths had in fact remained steady and had averaged 79 deaths a year for the previous 28 years, i.e. from the beginning of the 1970s (Creighton and Tissier, 2003). They drew on figures from two governmental publications – *Criminal Statistics* and the ONS publication *Mortality Statistics* - but they acknowledged that the ways of recording child homicides had changed during this period.

In 2007 another NSPCC analysis of Home Office figures (using figures from Coleman *et al.*, 2007) gave a five-year average of 67 homicides per year for children aged under 16 in the period 2001/02 to 2005/06 in England and Wales (www.nspcc.org.uk/Inform/research/statistics/child_homicides/). A more recent NSPCC report (nspcc.org.uk/Inform/research/briefings/) in April 2011 said that the average number of child homicides (based on a 5-year average) was now down to 55 deaths, or approximately one death per week. These figures were drawn from the Home Office publication *Homicide, firearm offences and intimate violence* (Smith *et al.*, 2011) and *Mortality Statistics* (ONS).

Similarly, the latest two-year overview analysis of Serious Case Reviews, which are the local reviews required by the Government into the death or serious injury of a child where abuse and neglect are known or suspected, reports that there are 50-55 non-accidental child deaths each year (Brandon *et al.*, 2012).

While clearly each death is a tragedy and it is good news if the numbers of children being killed non-accidentally is falling, the statistically differences discussed above in relation to the overall child population (11 million children under 18) does not change the probability of non-accidental child deaths in a significant way. Therefore, for the purposes of the discussion in this paper, I will take the figure of an average of 55 non-accidental deaths a year as a base line, which allows for some discrepancies between the different statistical samples. On this basis, the annual probability of any particular child being killed non-accidentally is .0005% or 1:200,000.

Child deaths and children's social care services

While the figures discussed above relate to the probability of any specific child in England and Wales being killed non-accidentally, it is worth considering the situation with regard to children who have had some contact with or are known to the children's social care services. As mentioned above, in recent years the Government has commissioned research reports on a two-yearly basis giving an overview of Serious Case Reviews, the local reports into child deaths and cases of serious harm, which are carried out by Local Safeguarding Children Boards. The last four reports covering the period 2003-11 (each two-year period runs from April of the first year to March of the second year) have all been carried out by research teams led by the same researchers (Brandon *et al.*, 2008; Brandon *et al.*, 2009; Brandon *et al.*, 2010; Brandon *et al.*, 2012) and so have been able to identify a number of similar patterns between the different cohorts. In total there were just over 800 serious case reviews in the eight-year period, which is a yearly average of 100 incidents. Again, on average, in two thirds of the cases the child died and in one third they were

seriously injured. There was a consistent pattern of between 45-50% of the case reviews concerning children under one year old and approximately two thirds were less than five.

However, one of the most striking features of these reviews is the status of the children, both those who died and those who were seriously injured, in relation to children's social care services. While in both groups approximately 55% of the families were known in some general way to children's social care (e.g. contact with an agency about an unrelated issues or about a different family member) the percentage where the child who died or was injured had a specific involvement with social work services, i.e. was formally registered as 'at risk' either on the child protection register or as subject to a child protection plan, was much smaller. This averages out across the four cohorts studied as 13% of the total cases, which is equivalent to about 104 cases over the eight-year period. If, in actuarial terms, this number is regarded as having the same balance of two thirds child deaths to one third serious injury as the overall total of cases, then on a annual basis, there would be approximately 13 cases which were formally registered as at risk, with about eight of these resulting in the death of a child. Based on the figures for 2009/10 (cited in Munro, 2010a), as there are approximately 35,000 children formally subject to child protection plans, the probability of a child in this group being killed is .025% or 1:4375, which is a very low level of risk. On the other hand, in probability terms, this means that 87% of the children killed and seriously injured come from what are regarded as much broader and low risk populations, which are either (i) those who have only had some general contact with children's social care services over a period of years, or (ii) no contact at all. As there are between 500,000 and 600,000 initial referrals to

social care each year (see Munro, 2010a), the first category can potentially include millions of families. The potential population for the second category is all the children in the country, i.e. 11 million. With such large potential populations to try and assess, the issue of detection and prediction becomes impossible and can only lead to an excessive number of false positives.

It is worth noting that, in relation to very young children, those under one year old accounted for nearly 50% of the incidents examined by SCRs, Brandon *et al.* (2008) say that ‘the families of very young children who were physically assaulted tended to be in contact with universal services or adult services rather than children’s social care’ (p.7). So for this age group, the relevant sample is all children under one year, which is approximately 640,000 (Pritchard and Williams, 2010), rather than only those known to social care services.

Therefore, as non-accidental child deaths are so rare in statistical terms, for any individual social worker there is almost no chance that a child on their caseload will die in a non-accidental manner. Equally, as such deaths do happen on a very rare but regular basis, then over say a 20 year period, it is quite probable that most child care agencies working in the field of child protection will experience the non-accidental death of a child within their client population.

Writing about issues of violence risk prediction in relation to people with mental illness, where cases of homicide have a similar high public profile as those involving children, Szukler (2003) identifies the ‘base rate’ problem as key in relation to assessing the accuracy of prediction. When the base rate is very low in relation to the issue in question, i.e. which people with a mental illness might or might not be violent or which parents or carers might or

might not be responsible for injuring or killing their child, then predictive risk assessment is of very little value. Drawing on the findings of some of the predictive research literature in his field (Buchanan and Leese, 2001; Monahan *et al.*, 2001), Szmukler notes that 'if 5% of the population of interest is violent, then the (predictive) test will be wrong 92 times out of a 100' (2003, p.205). In relation to homicides committed by patients with a psychosis, he argues that as the rate is approximately 1 in 10,000 per annum, then 'prediction is meaningless' (Szmukler, 2001). As the annual base rate for non-accidental deaths of children, as described above, is 20 times less than this, in statistical terms any attempt to predict which children may be at risk of being killed non-accidentally is an even more meaningless exercise.

Making judgments under uncertainty

As the issue here is to understand why policymakers, professionals and the public perceive that childcare work potentially carries such a high level of risk of child death, what has been described as the 'psychometric paradigm' (Wilkinson, 2010) or the behavioural psychology approach to risk, can be of considerable use. This approach is based in the original work of Daniel Kahneman and Amos Tversky (Kahneman *et al.*, 1982) and has been developed by Paul Slovic and his collaborators (Slovic, 2000). This work has been important in analysing how people perceive and construct risk and so is helpful in trying to understand why anxiety about a very rare event, the non-accidental death of a child, has come to dominate interactions between child welfare professionals and the cases they work with. The approach differentiated itself from much of the previous theoretical thinking about risk and decision-making, which was based on the idea of the 'rational' human

being. This was the (ideal) person who worked out logically what was the most beneficial course of action or decision in terms of their own personal benefit or welfare and then acted on that (Bernstein, 1996). What Kahneman and Tversky did was to identify patterns of behaviour that limit human beings ability to make, what would seem to be, the most rational response in terms of their decision-making (Tversky and Kahneman, 1974; Kahneman *et al.*, 1982). In general terms, the two key factors are firstly, that not surprisingly, natural emotional responses can often seriously affect how people make decisions and secondly, they suggest that people have difficulty understanding the complexity of many situations, in other words they don't have sufficient information (Bernstein, 1996). Using a wide range of empirical experiments, Kahneman and Tversky explored how people actually made decisions in experimental contexts. For example, faced with a number of choices, people are risk averse in one context, but offered the same choice in a different context; they are willing to accept a risk. Kahneman and Tversky identified an asymmetrical pattern between possible gains and losses, or between positive and negative outcomes. Bernstein (1996) outlines one imaginary scenario used by Kahneman and Tversky to illustrate this difference.

Imagine that a rare disease is breaking out in some community and is expected to kill 600 people. Two different programmes are available to deal with the threat. If programme A is adopted, 200 people will be saved; if programme B is adopted there is a 33% probability that everyone will be saved and a 67% probability that no one will be saved....If most of us are risk averse, rational people will prefer Plan A's certainty of saving 200 lives over Plan B's gamble, which has the same mathematical expectancy but involved taking the risk of a 67% chance that everyone will die (p.273).

Not surprisingly, over 70% of those in the experiment took the risk-averse option. However, when the same situation was presented in a different context, the response to the same basic facts was actually different. In this

case, there is a Programme C where 400 out of 600 people will die, while Programme D assumes that there is a 33% probability that nobody will die and a 67% chance that everyone will die. As Bernstein notes, in this second scenario 'the first of the two choices is now expressed in terms of 400 deaths rather than 200 survivors, while the second programme offers a 33% chance that no one will die' (1996, p.273). In this part of the experiment 78% of the people involved became risk-seekers and chose Programme D in order to avoid the sure outcome of 400 deaths.

Although in both scenarios the outcome probability is the same, either 200 people remain alive or there is a 33% chance of everyone surviving, the people in the experiment did not respond in what might be considered a logical manner by making the same judgment in both instances. Instead, in the first scenario they are risk averse and in the other, they are risk-takers. To explain this, Tversky says that the "major driving force (for people) is loss aversion" (1990, p.75, cited in Bernstein). A loss (400 deaths) was experienced as much worse than a positive outcome (200 alive).

Non-accidental child deaths can be seen as providing a particularly strong example of loss-aversion, based on the overwhelming emotional responses of both the public and the media to such cases. These very rare events are usually judged in retrospect as being predictable and preventable, leading to the blaming of specific individuals for the particular deaths. Rationally, as discussed earlier, the incidence of non-accidental child deaths has been quite consistent (and may actually be reducing) over a period of more than 30 years and therefore, another death, while obviously a tragedy, should not be unexpected. However, each case that makes it into the public arena is regarded with horror, and often brings forward what might be described as

the 'utopian bias', i. e. that no child should *ever* die in a non-accidental manner. Risk, in these situations, is then constructed as a *moral* issue and any child's non-accidental death can be seen as a failure by professionals, agencies and society itself (Heyman *et al.*, 2010).

This was shown by the comment of the former Children's minister, Ed Balls, in relation to the Peter Connolly case when he said:

The case of Baby P is tragic and appalling. It is our duty to take whatever action is needed to ensure that such a tragedy doesn't happen again, that lessons are learned and that children in Haringey are safe. (Daily Telegraph, 12th November 2008)

However, as he made the comments some 15 months after the death of Baby P, the statistical probability was that another 50 to 70 children had already suffered non-accidental deaths over this period. Although Mr. Balls would presumably have been aware of the statistical figures, the political context in which he was speaking made it, from his point of view, necessary to argue that such a case as Baby P should not happen again. Rather than seeing this statement as 'irrational' in logical terms, Kemshall describes this as a 'situated rationality', which is one that is 'embedded in place, time and network' (2010, p. 1249), so that the context of the meaning has to be considered as well as the logic. While Kahneman and Tversky have been criticised for positing that human behaviour is basically 'irrational', in fact they suggest that 'the evidence indicates that human choices are orderly, although not always rational in the traditional sense of the word' (Kahneman and Tversky, 1973, cited in Bernstein, 1996, p.282).

Some common errors in probability thinking

In their work, Kahneman and Tversky analysed the principles and techniques that people use to determine the likelihood of future uncertain events so that complex tasks can be reduced to simpler and more useable judgments. They called these learning devices *heuristics* and they can be very useful in facilitating decision-making. However, due to a human tendency towards certain biases in making judgments, for very valid contextual reasons as described above, they can also lead to a range of important errors. Two of the main heuristics they described are: *representativeness*, which is concerned with probabilistic questions such as: What is the probability that object A belongs to class B? or that A is representative of B? and *availability*, where people assess the frequency of a class or the probability of an event by the ease with which instances or occurrences can be brought to mind. Both of these heuristic devices can aid decision-making in uncertain situations but can also lead to a number of biases in thinking, which can then create serious errors.

(i) Representativeness

One of the experiments to demonstrate how people use the representativeness heuristic to make judgments is known as the 'Linda' question (Kahneman and Tversky, 1982). In this experiment participants were given a brief pen picture of a woman named Linda. She is described as aged 31, single, outspoken and very bright. She has a degree in philosophy. As a student, she is deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Participants were then asked to rate how likely it was that Linda might be involved in a list of possible occupations, which included teacher in a primary school, psychiatric social worker, bank teller, active in the feminist movement, or bank teller and active

in the feminist movement. The interesting outcome of this experiment was that regardless of how they rated other occupations, 89% placed the likelihood that she was a bank teller and active in the feminist movement higher than the possibility she was a bank teller alone. However, when looked at in logical terms, it has to be at least as likely that Linda is just a bank teller, as it is that she is a bank teller *and* active in the feminist movement. There is, of course, the possibility that she is a bank teller and not active in the feminist movement. The provision of the pen picture had created a representation of a kind of person that overruled the logic of what the outcome should be.

If we examine this heuristic in relation to assessing children and whether they are at risk, both Parton (2010) and Munro (2010b) in previous volumes of *Health, Risk and Society* note that a lot of work has been carried out to identify 'risk factors' in relation to possible negative outcomes for children. In other words, what is a representative type of family where child abuse might be an issue? Some of the characteristics that have been identified include: parental low income and unemployment, poor parenting, poor schooling, postnatal depression, low birth rates or living in disadvantaged communities (Chief Secretary to the Treasury, 2003). However, they also note the comments of researchers Fernstein and Sabates that 'Children move in and out of risk in terms of their own development and their levels of contextual risk' (2006, p.35). Therefore, while it is possible to identify factors that contribute to the probability of children being at risk (and some of these factors are of more general nature than others), and so create a category of children where risk is an issue, this does not help in identifying those particular children in this category that might actually be at risk. In this context, it is possible to have a statistical percentage but not a particular

person. As Munro puts it ‘The known risk factors are neither necessary nor sufficient for producing adverse outcomes’ (2010b, p. 123). They are not sufficiently representative to allow accurate prediction of potential risk.

In these circumstances, a social worker faced with a new initial referral, of which there are 600,000 a year, where some of potential risk factors are present, has to decide how risky a particular case might be and that is a judgment made under conditions of uncertainty. There are a variety of possible outcome in terms of a decision. The social worker might decide there should be no further action, or an initial assessment needs to be made, or a more in-depth assessment or to move towards a child protection plan. However, the decision has to be made in relation to each specific case without knowing in advance what category of case each one might represent. Munro in *her Review of Child Protection: Part One* (2010a) gives the retrospective figures for all the decisions made in relation to the 600,000 referrals in the previous year. These were:

- *No concerns (so no further action is taken) - 200,000 or 33% of the total referrals*
- *Needs an initial assessment - 400,000 or 65% of the referrals*
- *Needs a more in depth assessment - 140,00 or 25% of referrals*
- *At risk of significant harm - 35,000 or 6% of referrals*

The final category is the one described earlier in this paper:

- *May be killed non-accidentally – up to 55 or 0.01% of referrals.*

Drawing on the figures above, in probability terms, therefore, the initial referral is most likely to be a child where no further action is needed or a child in need (approximately 94% of total referrals), rather than a child protection

case (6% of total referrals), yet many social workers feel great anxiety that each and any particular case might be extremely risky for them.

If we think about this in terms of child care assessments, any particular child is far more likely to be a child in need of support rather than a 'child at risk' case and therefore it makes sense for social workers to approach cases in a positive and supportive manner. However, the childcare system is constructed on the bias that any case might be both *a child in need and a child that is at risk of significant harm* and therefore risk is the dominant concern. In other words, 'risk' and not 'need' has become the basis for assessment (Kemshall, 2002).

The sense of what an individual childcare case might represent has been distorted more recently by policy documents and reports into childcare and child protection that have argued that, to some extent, all children can potentially be seen as children needing support. For example, the Laming Report argued that even if the Victoria Climbié case was not seen as a 'formal' child at risk, she should have been seen as a 'child in need' and so *potentially* a 'child at risk' (Laming, 2003). This has the effect of creating a logically incoherent category of children who are 'at risk of being at risk' that is not based on a probabilistic prediction derived from information on existing examples of children, but on an unquantifiable imagining of what might happen in the future. From this perspective, all cases of 'children in need' should be looked at as closely as cases of 'children at risk' and equally, that all cases of child protection should be seen as children in need. The blurring of the line between children in need and children at risk was taken up by the consultative Green Paper *Every Child Matters* (Chief Secretary to the

Treasury, 2003), which was the government's response to the Laming Report.

It was not just about child abuse but as Parton says:

It was to include *all children* as it was felt that any child, at some point in their life, could be seen as vulnerable to some form of risk and therefore might require help' (2010, p.54, original emphasis).

This form of thinking in relation to possible future negative events has been described as a 'precautionary approach to risk' (Alaszewski and Burgess, 2007, p.355). It is more concerned with a fear about what might happen in the future, rather than learning from the past. Therefore there is a general fear in relation to all children about the future and the worst-case scenario would be a non-accidental death.

This trend has continued with the publication of the *Final Report of The Munro Review of Child Protection* (Munro, 2011), which although its title focuses on child protection, the report addresses issues affecting all children, including early intervention and the role of universal child welfare services. As Munro herself says '...a central question (for the report) was "what helps professionals make the best judgments they can to protect a vulnerable child?"' (2011, p.6). The issue of 'protection' is again the dominant one. In a discussion of policy developments over the last 20 years Parton makes the point that:

While the focus for both assessment and possible intervention has thus considerably broadened between 1991 and 2006, *the forensic investigation of child maltreatment still inhabits the core of the system*' (2010, p.53) (emphasis added).

Therefore all children coming in contact with the childcare system are to be considered as potentially (or as a representative of) children at risk.

(ii) Availability

The availability heuristic means that people assess the probability of an event by drawing on instances and occurrences that are easily brought to mind. For example, people regularly over-estimate the number of murders that take place and under-estimate the number of people who die from particular natural causes as (understandably) murders often receive extensive publicity and so are easily recalled when one occurs, whereas deaths from a natural causes usually only impact on people if it is someone close to them (Tversky & Koehler, 1994). This availability heuristic is affected by a number of biases in human thought processes, such as the ease with which it is possible to mentally search for examples. When asked to consider which occurred more frequently, words ending in the letter 'g' or words ending in 'ing', most people answered that words ending in 'ing' were more common. However, in reality the opposite is true as clearly all words ending in 'ing' include the letter 'g'. But people responded as they did because words ending in 'ing' are more available, i.e. easier to bring to mind (Tversky and Kahneman, 1974). Therefore, if people are asked to think of examples of social work practice, it is understandable that the extensive coverage of the limited number of child deaths will dominate their responses, rather than any other stories of good practice.

As non-accidental deaths of children are very high visibility events in the media, people often have high profile incidents fixed in their mind. The names of children who have been the focus of child death inquiries in recent years have become iconic, e.g. Victoria Climbié, and most recently, 'Baby P'. In fact the phrase 'Baby P' now serves the function of a signifier for the general public to stand for all and any examples of non-accidental child deaths and

the failure of welfare services, even if many of these people would have very little idea of what his actual name was or the specific circumstances of the case. Kitzinger (2000) suggests that cases such as Baby P become media ‘templates’, which are key events that extend beyond their own lifespan and are then used to explain current events, but in a restrictive and controlled way. From this perspective, because the Baby P case is now so ‘available’ as an example in the public mind, it is a template that constrains discussion of other more recent cases of child deaths, as well as child protection in general. Each new case is compared to that of Baby P.

While Kahneman and Tversky’s view is that the heuristics described above can distort people’s ability to understand the actual statistical level of risk in different contexts, Heyman *et al.* (2010) argue that, in fact, inductive probabilistic reasoning (statistical probability) is in itself a ‘heuristic’ as it relies on the past as a guide to future possibilities and uses statistics to categorise individuals – it is in itself a ‘rule of thumb’ (p. 86). So when figures are given for the numbers of children identified as either being ‘in need’ or ‘at risk’ these are themselves constructed categories that children can move in and out of over time. Therefore they suggest that the way ordinary people think about risk and the shortcuts they use to make decisions, such as ‘representativeness’ and ‘availability’, can best be described as ‘heuristics about heuristics’ (Heyman *et al.*, p. 97). What this means is that people are using simplifications to understand what are already generalisations, and while this can be very useful in many situations, it can also lead to erroneous decisions.

Predicting the Past

One of the ways that the heuristics and biases in probability thinking described above affect people's understanding of the risk of non-accidental child deaths is that they are re-constructed and re-confirmed on a regular basis by inquiry reports into particular cases. Often these individual reports then receive extensive coverage in the media, which creates great pressure for political action. In these cases, the reports' analyses of the past then become predictors of the future in order to identify possible children, who may be at risk of 'significant harm'. Therefore, one of the effects of the inquiries into non-accidental child deaths has been to operate a 'hindsight bias', which claims that at certain points in time in the past during their involvement with the child, not only should the professionals involved have done X, but also that they should have known at that point in time that X was the right thing to do. In other words the inquiry report writers are 'predicting the past' (Frischoff, 1982). They are saying that there was only one logical course of action for the professionals to take. Instead of having to make judgments under conditions of uncertainty the report writers, as a result of knowing the outcome, claim that the professionals involved at the time should have foreseen the probability of a negative event in the future. Clearly, as reports are only written after the death of a child, the outcome is known and such an approach inevitably engenders a focus on failure and an exploration of how something went wrong (and who is to blame). As Frischoff (1982) says, a focus on failure is likely to mislead us by creating a distorted view of the prevalence of misfortune.

In looking back at incidents in cases involving child deaths, inquiry reports often identify moments when they say professionals should have acted

differently (the implication being that if they had done the 'right' thing, the child would not have died). For example, in relation to the Climbié case, the Laming report said that there were 12 occasions when the child could have been saved (Laming, 2003). By commenting like this the writers are saying that the actual outcome (the death of a child) could have been predicted at these moments and therefore it should have been obvious to the professionals involved of the need to intervene and stop this happening. The writers of the inquiry reports, by going into every action carried out by professionals involved in the case, and at the same time knowing the eventual result of the case, create a single narrative, which gains credibility from the sheer amount of detail involved and makes the final outcome appear to be inevitable.

The Laming Report is a particularly detailed example of this. Cooper (2005), in a discussion of what he describes as 'emotional issues' in child protection, comments on the report saying there is a 'kind of restrained passion informing the opening pages of the first chapter of the report' (p.5) and that Laming seemed to be driven by a strong personal response to what happened to the child. Cooper also notes the 'meticulously reconstructed narratives' that are present in the document. What he is noticing here is how the past is being recreated in the present, driven by an emotional intensity because it is based in knowledge of the outcome. As Taleb (2007) says 'When you look at the past, the past will always be deterministic since only one single observation took place' (p.56).

However, this is creating a context in the past, which is dominated by the idea that the child might die and which proposes that the professionals were thinking to themselves 'how I act in this moment might affect whether this child lives or dies'. Clearly, there are very few professionals who would be able

to live and work that way, and it is very unlikely that they would have seen the particular moment (home visit, telephone call, meeting) in such life and death terms. It is much more likely that the event was one of 20 or 30 such moments in a week's work, which might have involved half a dozen different families all with a relatively similar profile to the one in question. To think about the past usefully, one must try and understand what the actual context for the particular professional was at that moment in time when the family and child in question were, in reality, another case on a caseload and not a very rare tragedy. As Fischhoff says, "...if one is interested in learning from the experience of others, it is important to determine what problem they were attempting to solve" (1982, p.340).

This bias towards privileging hindsight has been described as 'creeping determinism', which is the tendency to view reported outcomes as having been relatively inevitable (Frischoff, 1982) and to think that the people involved should have had some awareness of the unfolding historical situation as it was happening. Fischhoff suggests that, if people had this ability, then it would be possible for them to write in their diary 'Dear Diary, The Hundred Years War started today' (1970 cited in 1982).

Fischhoff argues however, that trying to predict the past can in fact harm our ability to judge it or learn from it:

...in the short run, failure to ignore outcome knowledge holds substantial benefits. It is quite flattering to believe that we would have known all along what we could only know with outcome knowledge, that is, that we possess hindsightful foresight' (1982, p.342).

In a sense, this is the dilemma that the inquiry reports have created for professionals, requiring them to have 'hindsightful foresight', and so to act in their present, bearing in mind how others in the future might judge these

actions. This must inevitably lead to a more risk averse and defensive mode of practice. A very striking example of this was the sizeable increase in the number of children referred to social workers after the publicity in relation to the Baby P case (55,000 extra referrals in 2009/10, which was an increase of 11% on 2008/09 (Munro, 2010a)). It is reasonable to assume that this increase was due to the fact that social workers in their day-to-day work were behaving in a precautionary manner and attempting to predict how potential inquiries in the future might judge their decision-making.

Discussion

As described above, a single, unique event in the past, a child death, is turned by inquiry reports into criteria for constructing categories of children potentially at risk in the future. With the focus of child welfare now on early intervention and to take action before any harm or restrictions of development have occurred (Parton, 2010), this means categorising children (and families) at an early stage using criteria based on previous research (see Farrington 1996). However, such an approach only allows probabilistic analysis of categories of children and potential outcomes. It cannot identify individual cases and predict specific outcomes. Prior to the death of Peter Connolly (Baby P), the child was one of approximately 35,000 children who were regarded as formally 'at risk'. At that point in time, many potential outcomes were possible for all or any of these children, of which the worst and least probable, was non-accidental death. After the event of his death, Peter Connolly became one of the approximately 55 children who died from non-accidental causes in that year. However, at least 34,945 of the other children in that category did not die and their cases had different outcomes.

Szmukler (2000) in an analysis of homicide inquiries where a person has been killed by someone diagnosed as mentally ill, points out, rightly, that the death of an adult (or child) is the worst possible outcome case for the professionals involved and the organisation. He raises the question that, even if failures were identified in the work of the professionals involved, whether it is right they should be judged solely on their worst ever case. He also argues that if it is claimed that homicides (or child deaths) are preventable by a service then the fact they are so rare means that overall the service must be doing a very good job (p. 9). However, this is not the picture often presented by inquiry reports into mental illness related homicides or child deaths. In many cases the specific event is used as a basis for criticising not only the organisations involved, but also the management systems. As with non-accidental child deaths, Smukler (2000) argues quite strongly that ‘An assumption reigns.....that all such homicides are preventable, despite the fact that every country has, and has always had them. For some reason, ours has become terrorised by them’ (2000, p. 6). In terms of child protection work it is also true that child deaths occur in every country (see Pritchard and Williams, 2010) and while social workers in the UK may not quite feel terrorised, it is clear many do experience great anxiety and stress in relation to their work, as shown by the high turn over and high vacancy rates in child protection posts (communitycare.org.uk, 2009; basw.co.uk, 2012).

Statistical analysis of the numbers of non-accidental child deaths demonstrates that they have been and continue to be very rare events and the probability of such an event affecting a particular child or particular social worker is so slight as to be statistically insignificant. Therefore, it makes no sense in probability terms that such a minimal risk should be one of the key

components of the childcare system. As Munro (2010a) has shown, lowering or raising the 'threshold' for formal social work intervention with children and families merely increases or decreases the number of cases of false positives that become involved with the system. However, the regular inquiries over the years into non-accidental child deaths and the current system of Serious Case Reviews has distorted the perception of the frequency and predictability of such events. The tendency to generalise from single negative instances encourages the heuristics and biases in the media, policymakers' and public's understanding of risk described above. As Devaney *et al.* (2010, p. 243) point out, when there is a non-accidental child death:

..this leads to the 'unholy trinity' of media pillorying, detailed post-mortem recommendations about the operation of the system on the heels of inquiries and the increasing prescription of practice, resulting in social workers and other child welfare professionals becoming focused on the need to avoid a non-accidental death that is the "classic instance of a low probability/high consequence risk that leads to risk-averse cultures and practices in all walks of life" (Cooper *et al.*, 2003, pp. 10-11).'

While the biennial overview reports of serious case reviews have been useful in providing some analysis of the features of child deaths and serious injury from abuse and neglect, their main findings illustrate the unpredictability of such events. The very low base rate of incidents in relation to the overall child population means that factors identified as relevant across the serious case review reports, such as mental illness, violence, neglect, etc., can have no useful predictive value in relation to wider categories of children, as such factors exist in many families. The consistently low percentage of cases that were formally considered 'at risk' at the time of the incident and the fact that almost 50% of the cases involved children under one year old, demonstrate

that the population of children dealt with by child care social workers are the least likely to be affected. While individual serious case reviews may produce some useful information for the local agencies involved, the government requirement for them to be carried out in every case and to be made public gives far more emphasis to individual review findings than can be justified. As each deals with a specific case in a specific context, the general applicability of any findings is very limited. A recent survey of 20 serious case reviews identified that they had produced a total of 932 recommendations, giving an average of 47 recommendations per review (Brandon *et al.* 2012). If this figure were extrapolated to cover the 800 reviews analysed since 2003, it would give an eye-watering potential total of over 37,500 recommendations. Clearly, there is nothing more to recommend that might make the very rare incidents of child deaths more predictable or preventable. As Macdonald and Macdonald (2010) argue, by focusing a greatly disproportionate amount of energy and effort on such low probability outcomes, attention is diverted away from the good that social work can do for the broad population of vulnerable people.

Conclusion

This paper has argued that the possibility of a child dying dominates both policymaking and frontline practice of child welfare services when, in fact, the statistical probability of non-accidental child deaths can be calculated very well and they are very rare events. However, the recurrent inquiry reports, by focusing on individual and specific children and reconstructing and ‘predicting’ the past, fuel both the ‘hindsight bias’ that the death should and could have been prevented and the myth of ‘total’ prevention (the ‘utopian bias’), that no child should die non-accidentally in the future.

Frank Knight, an economist and one of the early writers on risk and uncertainty said:

Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated.....It will appear that a measurable uncertainty, or 'risk' proper...is so far different from an unmeasurable one that it is not in effect an uncertainty at all (Knight, 1921, p.205 in Bernstein, 1998, p.219).

The child welfare system is conflating together the risk (measurable uncertainty) of a certain number of children dying within the overall child population, which is quite predictable; and unmeasurable uncertainty, which tries to identify the specific child that might die in one specific local authority, which is not. So instead of seeing child deaths as extremely rare and part of the human condition (Szmukler, 2000) with no probability that the vast majority of social workers will experience such a death on their caseload in their working life, the possibility of such an event remains part of every childcare social worker's consciousness. By having child protection 'inhabit the core of the (child welfare) system' and child deaths inhabit the core of child protection, unmeasurable uncertainty becomes its dominant feature.

On the other hand, by taking on board the probability that .0005 percent of children may die non-accidentally each year, and that these deaths are the result of such a complex array of factors they are neither predictable or preventable, social work could focus more directly on the hundreds of thousands of children and families that come in contact with it looking for help and support.

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