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# Complexity Theory: Developing New Understandings of Child Protection in Field Settings and in Residential Child Care

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## Summary

The protection of children, whether living at home or in residential care, is a core endeavour of residential and field social work with children. Yet, despite broad support from politicians, policy makers and the majority of the public for this work, child protection practice and practitioners are frequently criticized for perceived or actual failures to protect. Successive inquiries produce reports with similar recommendations, yet children continue to be abused and harmed, sometimes fatally. Clearly, better understandings and more effective protective practices need to be developed. Current research in the area of complexity theory is encouraging the development of concepts and applications which are powerful aids to understanding the issues that child protection practitioners experience daily. Child protection is not simple because of the multiplicity of factors that result in children being at risk. Complexity theory provides a framework for understanding the processes involved but without the problems of reductionism.

The purpose of this paper, therefore, is to explore the potential contribution of complexity theory and concepts that have relevance to the protection of children in both field and residential child care practice. It is argued that complexity theory offers new and helpful ways to conceptualize and work with the processes which underpin keeping children safe.

**Keywords:** complexity theory, child protection, field and residential child care social work

## Introduction

> If things were simple, word would have gotten round (Derrida, as quoted in Cilliers, 2005, p. 261).

The world is a complex place and social work takes place in an increasingly complex arena. Complexity theory has emerged in recent years and has the potential to provide new understandings for practice in a complex world. The term 'complexity theory' refers to a metatheory which has drawn on a number of disciplines. The fundamental concepts associated with complexity had their genesis in the fields of mathematics and physics, particularly from the late 1950s onwards. Common features from the various strands of these scientific endeavours led to the foundation of the Santa Fé Institute in New Mexico, USA (Fisher *et al.*, 1987). The work of the Santa Fé Institute draws together research from a wide range of scientific fields, including those of evolutionary biology and computational science. These ideas have gradually found their way into popular scientific literature, and the following books give interesting basic introductions to the foundations of complexity theory (Lewin, 1999; Buchanan, 2000; Gladwell, 2002).

This work has led to the development of concepts and theories which have a number of applications in the field of social science, and social scientists have taken an increasing interest in complexity theory (Byrne, 1998; Prout, 2004). Complexity theory is now growing beyond the boundaries of the academy and into practice, particularly in fields such as health care (Sweeney and Griffiths, 2002), social policy (Geyer *et al.*, 2005) and organizational management (McMillan, 2004).

In this paper, it is argued that complexity theory has applications for social work practice also. The area which will be examined in this paper is child protection, both in field social work and in residential childcare. Although safeguarding has become a more frequently used term in the UK, the authors are using 'child protection' as a term that will be understood by a wider readership.

The paper begins by introducing complexity theory and some of its more useful concepts that are relevant for the ensuing discussion and analysis of the protection of children. A brief review of the history of child protection in the UK from the mid-nineteenth century through to the twenty-first century follows, with a particular focus on inquiries into the abuse and deaths of

children in their homes and in residential settings, demonstrating that inquiry recommendations follow patterns which do not reduce the risk of harm to children. Drawing on complexity concepts, the authors conclude by outlining possible changes to child protection practice for consideration and discussion.

## A brief introduction to complexity theory

Complexity theory offers useful concepts with which to analyse and understand complex adaptive systems. Byrne (1998) provides a definition of a complex adaptive system as being 'the domain between linearly determined order and indeterminate chaos' (Byrne, 1998, p. 1), commenting on how this resonated with him as a social scientist interested in the complex groupings that form society. The 'domain' which Byrne discusses has also been referred to as a system which is *far from equilibrium*. Systems theories have a long history in social work practice, dating back to work on general systems theory by writers such as Pincus and Minahan (1973), family systems (Minuchin, 1974) and more recently found in ecologically based ideas such as those of Bronfenbrenner (1979). Systemic approaches continue to influence the development of ideas. One of the best known is *The Family Assessment: Assessment of Family Competence, Strengths and Difficulties*, which was commissioned by the Department of Health to accompany the *Framework for the Assessment of Children in Need and their Families* (Department of Health *et al.*, 2000). *The Family Assessment* as discussed by Bingley-Miller and Bentovim (2003) focuses on the tasks that a family has to perform and identifies family organization and family character as two key dimensions. *The Family Assessment* also encourages the identification of strengths and difficulties affecting a family's ability to carry out their tasks. The model is comprehensive and focuses the attention of the practitioner on strengths as well as problems. *The Family Assessment* is a set of scores along the various dimensions of competence and an accompanying narrative. As such, it follows a traditional systems model.

Payne (2005) discusses the advantages of systems approaches, commenting that:

> A systems approach alerts social workers to the possibility of alternative ways of achieving the same object (equi- and multi-finality). This reduces the stigma arising from the diversity of behaviour and social organization which some psychological theories that concentrate on normality and deviance tend to create (Payne, 2005, p. 153).

He also outlines some of the disadvantages, such as their use of technical language and their ideological foundations in structural functionalism. However, there can be no question that systems operate in all areas of existence, from biological evolution to societal development.

So how does complexity theory differ from traditional systems theory and how might it enhance practice? Unlike systems theory, complexity theory applies to complex adaptive systems. A systems theory approach suggests that by knowing about the component parts of the system, and by analysing how these interact with each other, an intervention can be applied in one part of the system which will have a predictable effect on another part of the system. This may be the case for closed systems but not for open systems. Complex adaptive systems are open systems which are organic, dynamic wholes. Systems theory would suggest that an input to the system will have an equal and equivalent output. Complex adaptive systems, because of their state of being *far from equilibrium*, are prone to abrupt changes. Such a system may be responsive to feedback but the value of the input to the system does not necessarily lead to an equivalent output. A tiny change in one component of the complex adaptive system may lead to massive unpredictable changes, or, indeed, it may not lead to any change. Traditional systems theory may encourage reductionism and reification in assessment. Complexity theory demands that attention be paid to the ever-changing nature of the system and asks for an intuitive approach as the practitioner comes to understand that they, too, are part of the complex adaptive system. Indeed, Bingley-Miller and Bentovim (2003) allude to this feature of systemic understanding when they discuss the importance of an awareness of *filters of understanding* in the practitioner (Bingley-Miller and Bentovim, 2003, p. 59). Finally, a complex adaptive system is not a fixed system. It changes over time, so any understanding can only be a snapshot. It is the view of the authors that an understanding of complexity theory can enhance practice by providing different ways to conceptualize some of the issues faced on a daily basis. Some of the more relevant concepts from complexity theory will now be discussed, with examples which link them to practice.

## Concepts from complexity theory and their relevance to practice in child protection

### Self-organization

Weather systems follow principles derived from complexity theory. Hurricanes arise due to the interaction of factors such as sea temperature, moisture in the air and gravitational forces. The complex combination of multiple and contingent factors creates a complex adaptive system which has the ability to undergo spontaneous *self-organization* (Halsey and Jensen, 2004). In other words, these factors will organize themselves to produce a hurricane. However, we cannot predict when a hurricane will form or what direction it will travel in simply by knowing these factors. Predictions can be made that there *will* be hurricanes in a particular area, but predictive ability stops at that point. So, in spite of the range of knowledge available about hurricanes, how they happen and where they occur, their actual occurrence in a time and place cannot be predicted.

The authors argue that social groups such as families are made up of agents interacting with one another in multiple and contingent ways to form complex adaptive systems. By drawing upon concept of self-organization, it can be demonstrated that behaviour is as much a product of interactions between agents and their environment as it is a result of individual actions. So, one person's behaviour affects others—but that person is, in turn, affected by the behaviour of the other and by their environment. It is in these interactions that the family *self-organizes* (Read, 2002). The factors which lead to a child being harmed within a family or group can be conceptualized as a self-organizing system. Self-organization gives some insight into the difficulties in predicting occurrences such as harm to children, and helps practitioners to seek a different ontological position in working with child protection issues.

## Non-linear understanding

A practitioner trying to operate a system of risk assessment in child protection from a stance of adding up the risk factors is applying *linear understanding*. In linear understanding, A plus B always equals C. Complexity theory suggests that this is not an adequate way to deal with complex phenomena, such as assessing the risk of harm to a child. This is because the development of complex adaptive systems is not a linear process. It is *non-linear*. In other words, action A plus B may lead to action C, but it may also lead to actions D, E and/or F. On the other hand, it may lead to no change. Coveney and Highfield (1996) suggest that complexity theory allows the development of indicative models, not predictive models of risk. The occurrence of certain events can be indicated with certainty (e.g. the injury or death of a child while under the care of social services in the year 2008). Where, when and how that event will take place, however, cannot be predicted, in the same way that a hurricane cannot be predicted. While this, in itself, may sound unremarkable, child abuse inquiries consistently express surprise that harm or death to a child was *not* predicted with certainty. Munro (2005) mentions this in her analysis of the shortcomings of traditional approaches to investigating child abuse deaths, and describes some of the consequences for practitioners as being the *steady erosion of the scope for individual professional judgement* and the *psychological pressure to avoid mistakes* (Munro, 2005, p. 533). Munro argues for a systems approach to such inquiries, and much of her argument reflects complexity concepts such as non-linearity.

It is argued here that procedures designed to protect children in fieldwork and residential care are currently based on linear models, which are inappropriate when dealing with the complex adaptive system of which the child and the practitioner are part. Psychologically and practically, some help is needed to allow participants in a system to make sense of what is happening within a complex situation. Hence, operational standards and procedures have a part to play. The danger arises when participants within the system believe that

because procedures are followed or standards are met, this will have a predictable outcome. A simple example of this in fieldwork might be placing a child on a child protection register. At the level of the organization, a particular set of inputs would be arranged with the express outcome of protecting the child from harm. This would perhaps entail that the social worker makes an agreed number of visits per week to the family home. The visits should create a space for the practitioner to monitor and work with the family. The intended outcome of this intervention should be that the child remains safe. It is argued that this represents an implicit linear understanding that this activity will protect the child (i.e. intervention should equal protection). However, the family within its wider social and physical environment is a complex adaptive system and, as such, the safety of the child cannot be guaranteed using purely linear understanding. Factors such as changes in the family unit and its environment over time, or even a change in the feelings or behaviour of the practitioner him or herself, must also be accounted for. Non-linear understanding insists upon close attention to the impact that the smallest details can have upon the whole system, for it is sometimes the smallest changes that can have the biggest effect. Another very simple illustration can be found in residential child care. Inspectors may insist upon a particular number of staff being on duty for a given number of children. The implication of such guidance is that X number of staff is required to keep Y number of children safe. However, in reality, there are so many factors involved at any given moment in the unit (e.g. experience of staff members, volatility of the group, individual developmental and life events affecting each member of the system, including staff) that such formulations can become meaningless. An ongoing attention to detail and a non-linear understanding of the situation (i.e. how changes in one small detail might have larger than expected consequences) is needed to maintain a more realistic approach to keeping children safe.

The concern here is that procedures and standards based on linear models have the potential to provide an element of false security, especially when one considers how stressful and demanding it is to be charged with protecting children and knowing the condemnation that will follow if there are any failures in that task. As Munro (2005) points out, the current system of investigating child abuse deaths has not given any comfort. Individuals, not systems, are often identified as failing children. This is a linear outcome. What is needed in such investigations is recognition that the entire system is a complex adaptive one in which non-linearity is an inherent feature.

## Emergence

The concept of *emergence* is important in complexity theory. Lewin (1999) argues that group behaviour on a small scale reflects the milieu within which it is embedded. This would suggest that while behaviour *emerges* in what may appear to be a chaotic way, it is actually responding to the laws of complexity.

Effects seen in social groups can be quite different from what may have been predicted, given the knowledge of the individual components. For example, a number of inter-disciplinary teams responsible for child protection may have the same number of staff, the same number of children and cover the same area in terms of population. However, each team will feel and act in very different ways (Klein, 2004). This is an example of a complex adaptive system which can be best understood using the concept of emergence. This concept was first proposed by Langton (1992) and Mihata (1997) defines this as:

> . . . the process by which patterns or global-level structures arise from interactive local-level processes. This structure or pattern cannot be understood or predicted from the behaviour or properties of the component units alone (Mihata, 1997, p. 31).

The emerging system strives for order and needs time to establish itself. However, emergence itself cannot be controlled or predicted. In child protection cases or in learning lessons from abuse in residential care, ways of examining how emergence can be *facilitated*, not controlled, to create safe conditions for children to live in must be central to protective practices.

## Dissipative structures, bifurcation and attractors

The concepts of *dissipative structure*, *bifurcation* and *attractors* are also helpful when thinking about keeping children safe. These concepts are linked to one of the better known aspects of complexity theory which tells us that complexity as a domain exists at the *edge of chaos*. A dissipative structure is essentially unstable and has the potential for abrupt shifts or changes. The structure is an evolving system, which, according to Byrne (1998), can be affected by both external and internal factors which will create changes within the system. Change may lead to a more stable system. However, it is difficult to say which type of stable system will emerge. A dissipative structure, according to Waldrop (1994), is one in which the components of the system never quite lock into place, yet they never quite dissolve into complete chaos. Hence, the system exists at *the edge of chaos* (Waldrop, 1994; Lewin, 1999; Marion, 1999). As more factors are introduced into the structure, the system will reach a *bifurcation* point. This is the point at which the system oscillates between two possibilities. Imagine a twig floating in a river. The river then forks. For a moment, the twig will be caught by the various forces at work in the river. Then, it will float down one of the forks. The point at which the twig reaches the fork is the bifurcation point. Once the twig has gone down its particular fork, the process is irreversible. An intervention at, or before, the bifurcation point can change the twig's course. This intervention within the system can be better understood through examining the concept of *attractors*. An attractor is a force within the complex system which directs how the system will emerge. Every complex system has attractors which create *boundaries of instability* (Haynes, 2003), which *means that the*

*future situation looks unpredictable but that it is unlikely to move outside certain boundaries* (Haynes, 2003, p. 42). These concepts have huge relevance in developing systems to keep children safe and will be explored later in the paper.

Children in need of care are already part of a complex adaptive system. We are suggesting that caring safely for children, whether it be in a residential establishment or in the field, results in the creation of further complexities in the system around that child. These systems are self-organizing and strive toward order, even though they are susceptible to abrupt shifts. These shifts or alterations in the system surrounding the child will be influenced by attractors which work to give the system a boundary, albeit a boundary of instability. A complex adaptive system has a pattern and, from this pattern, a range of likely outcomes can be indicated, but not predicted. Indeed, some of the outcomes will be unforeseen. Given the dynamic and live nature of the complex adaptive system, linear analysis of risk is inappropriate. Non-linear approaches to working with risk are much more relevant to the real nature of the system surrounding the child.

## An historical perspective of complexity and the development of child protection policies

Historical events are generally considered to proceed in linear, cause-and-effect fashion. However, complexity theory suggests that this is not the case. The development of policies and procedures in the history of child protection may look linear in hindsight, but each intervention is in reality an illustration of a system at the point of bifurcation. In this section, a brief history of the recent evolution of responses to child abuse are examined using concepts from complexity theory, to demonstrate that neither events nor responses to them can be truly predictable or predicted.

The emergence of child abuse as a significant social issue for societies in the nineteenth and twentieth centuries could not have been predicted from the onward march of capital, nor could the fact that as the twentieth century progressed, child abuse would manifest itself in a range of different forms. Policies and systems which developed in relation to protecting children can be seen as smaller structures embedded in the larger one of societal relations, explainable by the concept of connectivity between the base component and the end result.

The protection of children has been continually shaped and re-shaped by unforeseen (and, in some cases, unforeseeable) social, political and economic changes (Ferguson, 2004; Parton, 2005), reflecting the ways in which Western societies have self-organized. The complex social and economic systems of the nineteenth century introduced factors such as increased poverty, ill-health, child labour and child abuse, resulting in the 'emergence' of voluntary work in the form of philanthropic individuals and societies such as Barnardos, the establishment of the NSPCC Inspectors and children's shelters (Ferguson, 2004).

From 1884 through to 1914 and on to 1939, although interrupted by war and the Depression, there was a steady growth in the number of cases coming to the attention of the NSPCC and a corresponding development of measures to protect children in families—state intervention was seen to be necessary and legislation was enacted, introducing attractors into the system. These initiatives to protect children represent early linear responses. However, a linear response was inappropriate and indeed led to unintended consequences. Large-scale state interventions push social systems to the edge of chaos, thus creating change, some of which is unintended. For example, between 1939 and 1945, because of fears about bombing and in an attempt to protect the nation's children, the UK government decreed that large numbers of children were evacuated from particular areas of the country. However, while many children survived the war that otherwise might not have done, incidences of child abuse occurred for some, possibly many, in their 'safer' setting (Parsons and Starns, 1999), whilst, for others, it ceased. The introduction of evacuation as an attractor into the system caused unforeseen consequences or outcomes for the children in that system.

In 1945, the unforeseen death of Dennis O'Neill, killed by his foster-carers—again, a supposedly safe setting—led to the formation of the Curtis Committee in 1946, which drew up guidelines aiming to provide better protection for children in foster and residential care. The 1948 Children Act established Children's Departments and positioned statutory agencies as the predominant providers of both child welfare and child protection services. The NSPCC and other voluntary organizations which had been at the forefront of protecting children and which might have expected to continue as field leaders in this work experienced a decline in their role. Waldrop (1994) cites a number of similar examples in which the apparent leaders in their field, either political or material, do not maintain their pole positions, thus demonstrating the range of ways in which complex systems self-organize, with unexpected results.

From the 1950s to the 1960s, an illustration of the non-linear development of systems can be seen when the protection of children was undertaken in a period of 'post-war consensus' and the growth and consolidation of the welfare state. However, as noted by Parton (1996, 2005), such consensus was predicated on the assumptions that high employment, the hegemony of the nuclear family, wages that supported families and kept pace with the rate of inflation, and the commitment of the state to provision of welfare services would all continue. In fact, as Parton has demonstrated, in 1996 and more recently, these assumptions were overturned when unforeseen economic and political change occurred in the 1970s, changing the relationships between the state and social work in general, and child protection social work in particular.

The 're-discovery'—or, drawing from complexity concepts, the 'emergence'—of child abuse was made public through work by Kempe and colleagues in the 1960s (Kempe *et al*, 1962). In 1973, the death of Maria Colwell—a child known to social services—was widely reported. The inquiry into her death (Department of Health and Social Security, 1974) made a number of recommendations

for practice, including the establishment of a multi-disciplinary system for responding to child abuse and improving inter-agency communication. Akister (2006) reminds us of Minuchin's systemic analysis of the Colwell case. Minuchin commented that the professionals involved with Maria could not respond to her because 'they thought in fragmented ways. Their cognitive models imposed an acoustical screen.' He felt that the procedures put into place to improve the protection of children, paradoxically, 'only helped to retain incorrect points of view' (Minuchin, 1984, p. 160). His reflections echo some of the earlier discussion in this paper about linear versus non-linear understanding. Indeed, the analysis would have been strengthened by reference to complexity concepts, had they been widely known in 1984, when it was written (Minuchin, 1984).

Throughout the 1980s, highly publicized inquiries into failures to protect children continued, including those into the deaths of Jasmine Beckford (London Borough of Brent, 1985), Kimberly Carlile (London Borough of Greenwich, 1987), Tyra Henry (London Borough of Lambeth, 1987), followed more recently by inquiries into the deaths of Victoria Climbié (Laming, 2003) in London and Caleb Ness in Edinburgh (Edinburgh and Lothians Child Protection Committee, 2003). The linear pattern of responding to failures to protect children has continued virtually unchanged. Each of these inquiries notes a lack of communication and collaboration between professionals, as had been reported in the case of Maria Colwell (Corby and Cox, 2000). Given that almost thirty years has lapsed between the death of Maria Colwell and the death of Caleb Ness, this is a matter of concern. Most inquiries have reported similar issues to those that were mentioned in the inquiry into Maria Colwell's death and each has recommended more prescriptive policies, legislative changes and procedures. The prevailing belief which can be identified in each of the inquiries' recommendations appears to be that an increase in linear responses would eventually leave no margin for error on the part of professional workers. The underpinning assumption appears to be that if child protection or safeguarding systems are made more prescriptive, then injuries to children and deaths of children can be stopped. In fact, the findings from the inquiries demonstrate that this is far from the case, and once again provides evidence of the relevance of fundamental principles from complexity theory, such as emergence, self-organization and non-linearity, to protective practices.

During the late 1980s and into the early 1990s, awareness of other forms of child abuse (child sexual abuse, ritual abuse, young people as abusers) developed, as did awareness of incidences of physical and sexual abuse in residential settings (Corby *et al.*, 2001). More recent child deaths such as those of Victoria Climbié (Laming, 2003) have had an impact on policy and legislative decisions, as has the North Wales Tribunal of Inquiry (Waterhouse, 2000). Attractors such as mandatory degree courses for social work have now been introduced into the system. New 'safeguarding children' guidelines have been produced (Department of Health, 2003); the green paper *Every Child Matters* in England (Department for Education and Skills, 2003) and *Getting it Right*

*for Every Child* in Scotland (Scottish Executive, 2005) have led to new legislation and restructuring of services in both countries. The aim of these 'inputs' has been the improvement of services. Complexity theory, however, suggests that there will be unintended consequences. Changes have an effect on the pattern and processes within the systems surrounding the child at risk. To rise to the challenge presented by complexity theory, both practitioners and policy makers need to consider risk in a counter-intuitive way, and attend to the larger systemic impacts of such changes.

The risk factors which contribute to child abuse are well known and include, for example, poverty (Baldwin and Spencer, 1993) or neglect and poor parenting skills (Parton, 1995) or the will and the opportunity to misuse power (Finkelhor, 1994; Armstrong, 1996). However, the most in-depth analysis of each of these factors will not shed light on when or where or how serious the next occurrence of child abuse will be. Similarly, public inquiries into the abuse of children in their homes or in residential care reveal disturbingly similar patterns being repeated. In their comprehensive review of institutional abuse of children, Corby *et al.* (2001) summarize the findings of inquiries into residential care. They cite poor management, lack of close inspection, insensitivity toward the needs of children and the low status of residential child care workers as some of the risk factors contributing to institutional abuse. Yet, an in-depth knowledge of the risk factors is not preventing such abuse from taking place, as the last major inquiry demonstrated (Waterhouse, 2000). These examples from field and residential settings illustrate the shortcomings of traditional risk management. Residential units and families are complex adaptive systems and any analysis of risk in residential care or field practice must take account of this.

## Complexity and practice in child protection

The authors argue that most child protection interventions, whether at the macro level of state policy or at the micro level of the child, are linear in their conceptualization. Linear approaches to risk give rise to a blame culture in residential or field settings if children are harmed. This is understandable, because organizations are complex adaptive systems which become exposed to extreme criticism if children are not protected. Complexity theory suggests that this exposure to criticism acts as an attractor that pushes the organizational system to 'the edge of chaos'. Often, the most straightforward action to take may be to blame somebody and remove that person. By removing an individual, both the public's perception of the service and the system's need to re-establish equilibrium are restored. However, such linear responses have unintended consequences for social services staff working with children, as the authors have argued consistently in this paper. For example, social workers report that the balance of their work has been tipped so much towards child protection that their roles in giving care and support to families have diminished. Their interventions in this area have led to criticism for either not intervening soon

enough, or for intervening too much. The effects of these attractors in the system have been illuminatingly explored by Parton (Parton, 1991, 2005; Parton *et al.*, 1997). The reality is that the major function of the social worker within a children and families team is child protection. This inevitably leads to frustrations for field social workers, who report that they do not get the time and space to undertake reasonable support and preventative work with families. If their work is more about adherence to (linear) procedures rather than examining (non-linear) process, they will have less opportunity to introduce other attractors into the family system which could establish a more indicative boundary of instability, and hence have an impact on the *incidence* and *effects* of harm, if not on the occurrence of harm itself.

In their large-scale study of social service departments in the North of England, Coffey *et al.* (2004) reported that the lowest levels of job satisfaction were among those staff working with children and families. When asked what could make their job better, respondents reported that they would like more staff or a lower workload so that adequate time could be allocated to the real needs of service users. The more accurate, but less comfortable, analysis that would result from applying complexity theory to this situation is avoided (i.e. that social workers and residential staff work daily at the 'edge of chaos', with all of the implications previously described). Eoyang (2004) points out that by using some of the concepts developed from the work of complexity theorists, both the practitioner and the policy maker are much better prepared to face the challenges of working in this domain.

Policy makers and practitioners must depart from linear models of risk analysis in which the key to the wider picture is presumed to be in the components of the system. Processes at work in complex adaptive systems tell us that prediction and prevention of abuse can never be assured because of procedures or standards. Stacey (2000) observes that decision makers must understand and manage the dynamic system which arises from the interaction between all participants in the system and its environment, but that they also must acknowledge and live with the fact that there can be no fail-safe strategy.

## Discussion

The child in a family or in a residential unit is part of a complex adaptive system which is neither completely deterministic nor completely random: it exhibits both characteristics. The causes and effects of interactions which result in harm within that complex adaptive system are not proportional to each other. The idea of boundaries of instability and attractors can help in understanding how to protect children, as these are processes which are well understood in complexity. This means that that although a system might be at the edge of chaos, it will not move outside certain boundaries.

Protecting children in care requires practitioners to understand that they are working within a boundary of instability. Structural measures such as child

protection procedures in fieldwork or care standards in residential work will not, in themselves, suffice. They may serve as attractors and they may lead to unintended consequences. Instead, practitioners and organizations need to develop a sense of the dynamism of the system within which they are working, and to see the potential for *any* factor within the system to contribute to an abrupt shift, including the implications of decisions laid down via procedures, and issues for the practitioner. There has to be a high degree of tolerance to working with boundaries of instability and uncertainty. While some practitioners may have developed this tolerance, it is suggested that this way of conceptualizing child protection may represent a sea change for the organizations involved.

Complexity theory can be used to develop new ways of working. For example, Stevens and Hassett (2007) have developed some indicators based on complexity theory which could be considered in risk assessment. By applying concepts like fractal scaling and non-linear understanding, their model of risk assessment uses a limited number of social variables in order to identify the boundary of instability and, therefore, can indicate more clearly where efforts can be directed. It emphasizes process and systems, not procedures and tasks. By consciously applying some of the concepts from complexity theory, a much more realistic approach to risk assessment has been developed.

Applying complexity concepts provides an opportunity for practitioners to move away from a risk-averse approach, by encouraging an overview of interactions within the whole system, including all participants and the environment. It can engender a problem-solving attitude, which should be owned and encouraged by organizations. Indeed, as complexity concepts become better understood, it is suggested that we might see the 'emergence' of new policies based on these ideas. Complexity theory can be used as a paradigm to provide a more realistic framework for interventions to keep children safe. In addition, the concepts can be utilized as an analytical tool to examine the effectiveness of measures taken to protect children, either in residential settings or in the field. Approaches to safeguarding children which are based on linear understanding can leave social service practitioners with a false sense of security. As noted when examining the inquiries into failures to protect children, this sense of security has been shattered frequently in Britain. Munro (2005) is right when she suggests a different systemic approach—an approach which lies firmly in the realm of complexity theory.

It is the authors' contention that interventions in the lives of children which are based on a linear understanding can lead to over-simplification of assessment and intervention. It is argued that most child protection procedures are static and too narrow. Findings from *Messages from Research* (Department of Health, 1995) suggested that approaches to child protection should be located within a wider, family support context. We would suggest that it should go further than this and encompass the wider environment, the practitioner and the organization. Current assessment frameworks (Department of Health *et al.*, 2000) operate from an ecological approach; however, generally, these

approaches do not account for random or unanticipated events. Practitioners should make the distinction between *systemic* and *systematic. Assessment of Family Competence* (Bingley-Miller and Bentovim, 2003) provides a good example of this. It is based on a traditional systems model. The traditional systems model works on the basis that if all parts of the system are understood, then the system is knowable and the future is predictable. As previously stated, this may be the case for a closed system but not for a complex adaptive system. Complexity theory is anti-reductionist in its nature. Bingley-Miller and Bentovim's assessment model appears reductionist at first viewing by trying to condense the dimensions into a numerical score. It is only with the narrative explanation that practitioners expand upon this. Indeed, it is within the narrative that complexity concepts can be put into action. *The Family Assessment* is excellent as a *systematic* way of approaching assessment. However, it is our contention that it needs to be developed further to encourage a more *systemic* view. This may include using techniques such as eco-mapping or mind-mapping based on scenario-building with families, where families and children take the lead. The authors also believe that frequent regular supervision, in which practitioners reflect on their place within the system and the possible consequences of this, is also vitally important to ensure that the assessment remains alive and dynamic and does not become reified.

Examples from reports on failures to protect children illustrate the operation of principles of complexity by demonstrating that, routinely, events combine in a way that is unforeseen, and so children are harmed. This is compounded by the fact that practitioners may feel a sense of ease if they feel they have 'followed procedures' or ensured that the correct paperwork is completed. This false sense of security is not helpful when looking at the bigger picture in child protection. Lissack (1996) rightly comments that *what we find when we search is a function of how we look*. Although he is discussing the application of complexity concepts to management, the authors feel that his comment is equally applicable to social work.

## Conclusion

It is the authors' view that complexity theory can help practitioners working to keep children safe in residential or field settings. As concepts from complexity have emerged in the social sciences, debates are now taking place about whether commentators intend the application of complexity as hard science or the use of complexity as metaphor. Choi (1993), in his discussions on complexity, notes that individuals must have an understanding about any given situation, and hold this idea with sufficient confidence to follow the course of action that it suggests. If a situation is complex, individuals seek ideas that enable them to deal with it, ending that search only when such understandings have been obtained. The authors share Cilliers' (2005) view that while complexity theory may not provide the exact formulae to solve problems in the

social world, it does provide a new way to analyse and explain why these problems are so difficult. In conclusion, the authors believe that complexity theory offers tools for understanding and analysing many of the complex adaptive systems within which practitioners operate in protecting children.

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