

(Please note - for the most accurate version of this paper, with final page layout, please refer to Mellor, N. (2006) Attention seeking: A perspective from chaos theory. DECP Debate, 117, 17-23)

Attention seeking: A perspective from chaos theory

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Attention seeking behaviour is a relatively neglected topic in the academic literature; this paper aims to contribute further to its understanding. Insights from chaos theory have been applied to a wide range of issues. The purpose of this article is to use an aspect of chaos theory, the butterfly effect, to explore aspects of attention seeking behaviour cycles. The paper draws on casework experience and highlights a wide range of areas for further research.

Introduction and overview

The paper is in five parts. The first gives a very brief description of attention seeking. The second covers certain facets of chaos theory, in particular, the butterfly effect. To make the later connection with chaos theory, in part three, the idea that parents' *beliefs* may effect their behaviour towards their children, is introduced. Although there is lack of hard research evidence to support the notion of a butterfly effect arising from parents' beliefs (which is the last link in the chain of the argument) anecdotal evidence is presented to raise a plausible case for research into this aspect, in section four. Finally, some critical reflections are offered on the implications of these ideas.

Attention seeking

In view of the many confusions arising in when discussing attention seeking, Mellor (2005, p.96) offers a working definition, as an aid to practitioners:

... attention seeking ... [refers] to those behaviours which, through their very irritating nature, bring a child to the attention of a number of adults in a

persistent manner over a lengthy period of time, causing great concern. We would exclude, for instance, the sudden reaction of a child to an upset at home lasting for a few days or weeks.

It is a curiously neglected topic in the academic literature yet it may be a major cause of concern to parents and teachers (see for example de Pear, 1995 on exclusions and extensive reviews in Mellor, 2005).

This article will not rehearse the arguments for the existence of this phenomenon and the need to carry out research into a wide range of questions surrounding it (see Mellor, 1997 and 2005), although interventions appear to be successful (see Mellor, 2004a and case studies in Mellor, 2000). Let us begin simply with an assumption that certain patterns of behaviour, in families and in schools, can be identified, which indicate that some children appear to be locked into interactions where they obtain attention through inappropriate behaviours. They may of course obtain attention for acceptable behaviours at the same time, however, these are generally not seen as giving cause for concern.

Of the many puzzles surrounding attention seeking cycles, one is of particular concern in the context of the present discussion: how do they begin? One common trigger, drawn from the work of Alfred Adler, is the arrival of a new baby in the home:

As a dethroned child, with the birth of the second child, he may feel unloved and neglected. At first he usually strives... to regain his mother's attention by positive deeds. When this fails he ... may become obnoxious (Dreikurs *et al.*, 1971 p.47).

Mellor (2000, p.14) illustrates a number of other potential triggers. However, from casework experience, in many instances no clear trigger is apparent. The argument of this paper will be that one possible explanation can be found in an aspect of chaos theory: the butterfly effect.

Chaos theory

Gleick (1987) describes several attempts at defining chaos, many of which may leave the non-specialist none the wiser. The *Concise Oxford Dictionary* offers a definition of chaos theory which is relevant to the present discussion: “the theory that small changes in the physical world can eventually have unpredictable and potentially major consequences”.

For the purists there is a strong case that there is no such thing as a “chaos theory” (see Kellert, 1993), however, this article will not attempt a general discussion of chaos theory and, more importantly, its misuse (see the excellent account in Sokal & Bricmont, 1999 of the misapplication of scientific ideas, including chaos). Whatever its status, the evidence is that insights from chaos theory have been applied to a wide range of issues (see summary in Mellor, 2004b), including, for example special education (Guess & Sailor, 1993). In some of these works the authors are making little more than rough analogies. Systematic, even mathematical, models of human behaviour using chaos theory, have, however, been presented by, for example, van Geert (1997) in the case of attachment and Elkaim *et al.* (1987) in the case of family systems. A number of authors have written extensively on applications to psychology and the social sciences (see Mellor, 2004b) but the best introductory text remains Gleick (1987) where an extremely broad range of applications is noted.

The issue relevant to the present discussion, however, is the way in which tiny changes in the initial conditions of certain systems can lead to massive and unpredictable changes in the future: the “butterfly effect” or “sensitivity to initial conditions”. Gleick (1987) illustrates this dramatically. Quoting one of the earliest researchers in this field, he poses the question, in the case of weather systems: “does the flap of a butterfly’s wings in Brazil set off a tornado in Texas?” (p.322). What the analogy is getting at is how, in the complex, interacting chains of events in the atmosphere, tiny changes of pressure, temperature etc., of a level of insignificance equivalent to the flapping of a butterfly’s wing, can multiply upwards to a storm.

Drawing on anecdotal evidence from casework, this paper will argue that such a butterfly effect, drawing partly on parents' beliefs about behaviour, can be seen in the development of attention seeking behaviours in children.

Parental beliefs and the butterfly effect

Beliefs and attitudes can affect behaviour, however, the link is not simple (see for instance the extensive work of Fishbein & Ajzen, 1975). This paper argues that parents' beliefs (and feelings) about their children may effect their behaviour towards their children (see further discussion in Mellor, 20004b) , although the fine details of how this might develop in a range of families would need to be established by further research. This circumstance it is argued, can lead to the gradual development of attention seeking cycles (which may grow in intensity from relatively insignificant beginnings, thus spirals, rather than circles, may be the most apt visual metaphor for these interactions).

Consider for example a child who has had a distressed birth, or a post-natal illness or who is found to have a disability. Or consider a mother who has had a troubled pregnancy or domestic problems after birth. Now, any of these conditions might lead directly to the child displaying behaviour problems – for instance brain injuries might directly affect behaviour. But they might not. What is rarely considered is how the parent's beliefs could enter the equation. Whether or not such early events can actually cause difficulties, the parent may *believe* they can, and act accordingly. In addition, the parent may believe this child is somehow “different”, or special in some way, and that circumstances justify different handling, perhaps as a kind of compensation for the problems experienced. Vogel & Bell (1968) describe a parallel scenario where “the disturbed (*sic*) child” (p.418) has some physical abnormality or had a serious disease when younger (their analysis, however, focuses on scapegoating rather than attention seeking).

It should be stressed that such an idea: of parents' management being “thrown off course”, as one starting point for attention seeking cycles, lacks hard research evidence. However, some pointers arise both in the literature (see for example Cunningham & Davis, 1985, especially p.38, and van Geert, 1997 on maternal

sensitivities, plus the papers on the impact of minor environmental differences cited below) and in casework examples presented later. In these casework discussions, parents often report a background “worry” about one child. This may be vague and not fully recognised, but nevertheless it seems that such worries can contribute to undermining parents’ child management skill. There is no claim here for a simple direct “causation”, or even a clear circular cycle of cause and effect. More probably a whole host of factors influence each other in a complex mixture over a long period of time, with attention seeking at the heart of a messy spiral.

As a further illustration of the conceptual problems besetting parents, in a family we often find that only one child displays the “problem”. Parents are confused by this and insist “we treated them all the same” thus implicitly pointing to some other, unknown, possibly genetic, factor to explain their difficulties. Children however, all have different experiences of the family. One girl for instance may have an older sister, but that means the older child has a younger sister. Children enter the family at different times of family stress, and parents age and grow wiser but more weary, as James (2003) puts it:

The changes in the emotional state of each parent, and in the marriage between one child and the next, combine with the biographical bric-a-brac that each parent loads separately on to each child, creating a unique psychological environment every time (p.36)

Plomin & Daniels (1987), asking why children in the same family differ from one another, argue that “possibly subtle differences experienced ... by children in the same family are the environmental factors that drive behavioral development” (p. 15). Lytton (1990) describes how “quite small differences in the child’s responsiveness ... may, in repeated reciprocal interaction with parents ... produce antisocial children” (p.693). As Phelps & Hase (2002) succinctly explain, in all such settings we must attend to the “big consequences of little things” (p.507). Critics of twin studies support this notion. It is often argued that because twins share the same environment, differences between identical and non-identical twins must be genetic in origin. However, studies highlight the (sometimes subtle)

different experiences of twins in the apparently uniform family environment (see summaries in James, 2003).

Returning to the butterfly effect, a few recent case fragments are offered below to illustrate the way in which early incidents can set parents off on the “wrong track”. These events could provide the unique environment for that particular child-parent relationship to evolve into an attention seeking spiral.

Case fragments

The extracts below are drawn from casework with parents arising from referral for local authority educational psychology service support. Intervention in these cases followed the approach outlined in Mellor & Harvey (2003) as attention seeking was seen to be at the heart of the problems.

Now, some of the circumstances which parents describe are admittedly often significant and could potentially upset any child-parent relationship. For example Karl (all names have been changed), age seven, was displaying extensive attention seeking behaviours. His mother explained recently, about his extremely distressing early years and multiple hospital treatments: “ Because of his illnesses I’ve spoiled him... I was so grateful he survived...now I’m just putty [in his hands]”.

Paul was blue at birth with the cord around his neck. When referred in Year 2 he was described by parents as “Very stubborn – terrible”. He was defiant and prone to tantrums. He “goes on an on ... to wear you down”. He dawdled in the morning. A whole host of his behaviours fitted the attention seeking model. Parents explained that, because of difficulties at the time of his birth “we wrapped him up in cotton wool”.

Herbert (1981) presents one of the, extremely rare, detailed studies of attention seeking which appear in the literature. The account concerns Tommy, age four. His mother had illnesses after the birth and post- natal depression, Tommy was a difficult baby and he became tremendously jealous of his baby sister. A number of

factors probably contributed to the development of attention seeking interactions in this example.

However, some events appear much less serious initially, yet their influence seems to become magnified up, as from the butterfly wing to the tornado. Tim, for example, was another seven year old displaying quite marked attention seeking behaviour. Dad said “He fell downstairs at 18 months and turned into the child from hell. Looking back ... [we worried too much about him at the time]”.

The case extracts below try to catch the essence of some of the triggers and cycles associated with attention seeking. For brevity, the reports simply focus on the children’s less appealing behaviours. Interventions of course emphasised the more positive aspects. Further details of the approach can be found in Mellor (2000) and a similar stance in Herbert (1981).

- Tom Charlton, age four, had been adopted. His birth was okay as far as was known but the birth mother, who had learning difficulties, did not have checkups beforehand and had anorexia. Tom was healthy after the birth. He was a poor feeder, however, and at about three months he began projectile vomiting which carried on until he was onto solids. He went into hospital for observation but there was no medical reason for this. He always had poor weight gain. Tom had eczema on hands and legs and had warts which cleared up. He had a runny nose and constant colds. He took medication to help him sleep and cream for eczema. His hearing was okay and he was slightly long-sighted with a slight squint when tired.

At home Tom displayed a wide range of attention seeking behaviours. The adoptive parents said his behaviour had been difficult from a young age, Mrs Charlton said “We’ve spoilt him”. She added “We’ve done everything to please Tom”. The implication was that the parents were trying in some sense to compensate for what they saw as Tom’s early disadvantages and his illnesses (see Mellor & Harvey, 2003, for further case details).

- Debbie Tait age six (see Mellor 2000, p.63) was referred initially because of concern by her mother and speech therapist about school progress. She suffered from a severe allergy causing sinus and catarrh infections and occasionally slight deafness in one ear. She had a sinus wash and both ears drained the previous year. At school she had developed a great fear of failure and was very withdrawn and unhappy. Debbie had made very little progress with early number and early reading skills despite being of average ability.

Parents were interviewed and it became clear that at home Debbie was quite assertive, humorous and confident in marked contrast to being withdrawn and lonely at school. She was, however, very insecure after a number of hospitalisations because of her poor health and the family had tended to focus on her fears and illnesses. Much of her behaviour could be seen as attention seeking in the house.

At home Debbie could be a “tyrant” with her dad if denied her own way. She even threw her clothes one by one into the road to force him to carry her home when he was trying to insist that she walked. In the end Debbie won. Father tended to refer to her as “my baby girl”. He tended to pick her up and treat her as a much younger child because she looked so frail. Mother confirmed “I’d kept her as a baby too long”.

- The case study of Peter Hart, age 14, in Mellor (2000 p.83) is a good illustration of one mother being “thrown off course”. At the beginning of the intervention, according to the parents, Peter was very attention seeking. Mrs Hart said, almost in passing, during the course of the interview that she had worried about him since birth because of a small medical problem with his spine. She had tended to be very protective towards him because of this. It seemed that his behaviour patterns could have been influenced by his mother’s protective attitudes developing from this worry (amongst other factors).

The descriptions above are anecdotal in nature, but they do open up one plausible route for the development of certain attention seeking behaviours. Such difficulties

it is implied, could spiral, in a butterfly effect, from interactions arising from an initial mind set of the parents. These parent beliefs, such as : “this child is different” or “this child needs different handling”, may have evolved in some cases from quite minor events. However, they may have given rise to those “subtle differences ... which drive ... development” mentioned above – the butterflies which trigger the tornado. It would, of course, be necessary to explore such cases in much more depth, preferably with longitudinal studies, to establish the kind of links being proposed.

Reflections

The argument presented in this paper, of a butterfly effect in children’s behaviour development, is speculative and, as with so much in the field of attention seeking, clearly a great deal of research is called for. With regard to the chaos theory aspect in particular, in one simplistic sense, the butterfly idea is not new. We can recall the old story :

For want of a nail, the shoe was lost. For want of a shoe, the horse was lost.
For want of a horse, the rider was lost. For want of a rider, the battle was
lost. For want of a battle, the kingdom was lost (Gleick, 1987 p.23)

Sokal & Bricmont (1999) criticize the mixing of such “popular wisdom” (p.135) with mathematical theories. There is also a danger, expressed by Coveney & Highfield (1995) of “confused popularizations” where chaos is put forward as an “explanation for everything complex” (p.174) and Arnold (2002) surveys a number of authors “whose excitement [about chaos] may exceed their theoretical engagement” (p.4). Other criticisms are raised in Hunter & Benson (1997) and Mandel (1995) concerning over-general applications to education and the social sciences generally and difficulties in adapting data analysis techniques from chaos theory to the behavioural sciences.

Chaos theory, however, potentially presents a powerful framework within which propositions could be researched and even, in some cases, quantified. Such a framework appears to offer more scope for development and investigation than a

model referring, for example, simply to the action of positive feedback loops existing between parent and child (see van Gert, 1987 or Thelen, 1990 on the benefits of a chaos type of perspective in other aspects of development).

A number of questions remain:

- Is what is being described here a genuine butterfly effect in a chaotic-type system (see Pigliucci, 2000)? Or is the chaos perspective no more than a loose (albeit helpful) analogy?
- If a butterfly effect is demonstrable, linking, for example, parents beliefs or superficially insignificant environmental occurrences, to the development of attention seeking spirals, we may need to ask a number of questions. Why, for instance, such a butterfly effect might lead to attention seeking behaviour and not some other difficulty (or indeed, to positive behaviours). In parallel we would also need to explain how attention seeking might arise in cases where a butterfly effect seems to be absent. Which leads to the third issue:
- In some instances clear triggers such as birth of a sibling (Griffin & de la Torre, 1983) or illness of a sibling (Taylor *et al.*, 2001) have been seen as incidents with the potential to spark off children's behaviour difficulties, and we could argue that attention seeking might be one outcome (see for example Dreikurs *et al.*, earlier on the "dethroned" child). However, we need to take account of the possible complexities entailed in such considerations. Sandberg *et al.*, (2001), for instance, highlight the difficulties in assessing the impact of *any* life events on children. A great deal of research would be called for to examine both risk factors and protective factors. Which brings us to the final point:
- Up till now we have been considering the potential impact of parents' beliefs surrounding their children and other events (however small) in triggering attention seeking cycles. We still need, however, to ask what the factors are which might amplify and then maintain such cycles. After all, not every butterfly wing beat leads to a storm!

Acknowledgments

The author would like to record the support of Christopher Arnold, Jonathan Caswell, Miles Thomas, Sarah Woodburn and the journal's editors. This paper is based on "Attention seeking: a perspective from chaos theory" presented at the annual conference of the Association of Educational Psychologists, Stratford on Avon, November 2004.

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Footnotes

[1] Of course, fathers have a role to play. The focus on the mother here is for simplicity.

References

- Arnold, C. (2002). *The dynamics of reading acquisition: Applications of chaos theory to literacy development*. Unpublished thesis submitted for the degree of PhD, University of Wolverhampton.
- Coveney, P. & Highfield, R. (1995). *Frontiers of complexity: The search for order in a chaotic world*. London: Faber and Faber
- Cunningham, C. & Davis, H. (1985). *Working with parents: Frameworks for collaboration*. Milton Keynes: Open University Press.
- De Pear, S. (1995). Perceptions of exclusion by pupils with special needs. In: M. Lloyd-Smith & J.D. Davies (Eds) *On the margins: The educational experience of 'problem' pupils*. Stoke on Trent: Trentham Books.
- Dreikurs, R., Grunwald, B.B. & Pepper, F.C. (1971). *Maintaining sanity in the classroom: Illustrated teaching techniques*. New York: Harper & Row.
- Elkaim, M., Goldbeter, A. & Goldbeter-Merinfeld, E. (1987). Analysis of the dynamics of a family system in terms of bifurcations. *Journal of Social and Biological Structures*, 10, 21-36.
- Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Reading: Addison-Wesley
- Gleick, J. (1987). *Chaos: Making a new science*. London: Abacus.
- Griffin, E.W. & De La Torre, C. (1983). Sibling jealousy: The family with a new baby. *American Family Physician*, 28, 143-146.

- Guess, D. & Sailor, W. (1993). Chaos theory and the study of human behaviour: Implications for special education and developmental disabilities. *Journal of Special Education*, 27(1), 16-34.
- Herbert, M. (1981). *Behavioural treatment of problem children: A practice manual*. London: Academic Press.
- Hunter, W.J. & Benson, G.D. (1997). Arrows in time: The misapplication of chaos theory to education. *Journal of Curriculum Studies*, 29, 87-100
- James, O. (2003). *They f*** you up : How to survive family life*. London: Bloomsbury.
- Kellert, S.H. (1993). *In the wake of chaos: Unpredictable order in dynamic systems*. Chicago: University of Chicago press.
- Lytton, H. (1990). Child and parent effects in boys' conduct disorder: a reinterpretation. *Developmental Psychology*, 26(5) 683-697.
- Mandel, D.R. (1990). Chaos theory, sensitive dependence and the logistic equation. *American Psychologist*, 50, 106-108.
- Mellor, N. (1997). *Attention Seeking : A practical solution for the classroom*. London: Sage/ Lucky Duck Publishing.
- Mellor, N. (2000). *The good, the bad and the irritating: A practical approach for parents of children who are attention seeking*. London: Sage/Lucky Duck Publishing.
- Mellor, N. (2004a). TIPS: time-limited intervention with parents service. *DECP Debate* 112, 9-13.
- Mellor, N. (2004b). Attention seeking: a perspective from chaos theory. Paper presented at the AEP annual conference, Stratford on Avon, November 2004
- Mellor, N. (2005). Attention seeking: the paradoxes of an under-researched concept. *Educational and Child Psychology*, 22 (4), 94- 107.
- Mellor, N. and Harvey, E. (2003). *Attention seeking: Parent interviews - a training pack for practitioners*. Available from first author.
- Phelps, R. & Hase, S. (2002). Complexity and action research: exploring the theoretical and methodological connections. *Educational Action Research*, 10(3), 507-523.
- Pigliucci, M (2000). Chaos and complexity: Should we be skeptical? *Skeptic*, 8(3) 62-70.
- Plomin, R. & Daniels, D. (1987). Why are children in the same family so different from one another? *Behavioral and Brain Sciences*, 10, 1-60.
- Sandberg, S., Rutter, M., Pickles, A., McGuinness, D. & Angold, A. (2001). Do high-threat life events really provoke the onset of psychiatric disorder in children? *Journal of Child Psychology and Psychiatry*, 42 (4), 523-532.
- Sokal, A & Bricmont, J. (1999). *Intellectual impostures: Postmodern philosophers' abuse of science*. London: Profile Books.
- Taylor, V., Fuggle, P. & Charman, T. (2001). Well sibling psychological adjustment to chronic physical disorder in a sibling: how important is maternal awareness of their illness attitude and perceptions. *Journal of Child Psychology and Psychiatry*, 42 (7), 953-962.
- Thelen, E. (1990). Dynamical systems and the generation of individual differences. In: J. Colombo & J. Fagen (Eds) *Individual differences in infancy: Reliability, stability, prediction*. Hillsdale, N.J.: Lawrence Erlbaum.
- Van Geert, P (1997). The development of attachment and attachment-related competence: A dynamic model. In : W. Kopps, J.B. Hoeksma & D.C. van

Den Boom (Eds) *Development of interaction and attachment: Traditional and non-traditional approaches*. Amsterdam: North-Holland

Vogel, E.F. & Bell, N.W. (1968). The emotionally disturbed child as the family scapegoat. In: N.W. Bell & E.F. Vogel (Eds) *A Modern introduction to the family (revised edition)*. New York: Free Press.