

CAN A RULES-BASED MODEL ILLUMINATE RESILIENCE MECHANISMS?

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Abstract

Purpose: To set out a rules-based model for resilience from bioscience and to explore its translation for helping to illuminate the mechanisms through which resilience operates in the context of children and young people's wellbeing and for critical evaluative research into interventions in this area.

Design: The theoretical model is applied to an example of a school-based social and emotional learning programme, 'Promoting Alternative Thinking Strategies' (PATHS), drawing on examination of programme materials, a focus group with practitioners and existing research literature on the programme.

Results: The model fitted well with the core problem-solving elements of the PATHS curriculum but less so with other aspects of the programme. It was useful for breaking down the processes involved in generating resilience in this context into a series of steps and in providing a basis for introducing critical evaluative questions about interventions. An initial critical evaluative framework for resilience interventions is proposed.

Key words: Promoting Alternative Thinking Strategies; resilience interventions; social and emotional learning programmes; critical realism; transdisciplinary research.

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Introduction

There is now a large body of social and behavioural science research on resilience, focused on children and young people. This research has identified a range of interacting individual and contextual factors which promote resilience (Burchardt and Huerta, 2008; Hobcraft and Sigle-Rushton, 2008). However, the active social *processes*, or *mechanisms*, through which resilience is produced remain under explored. Furthermore, evaluative research into the effectiveness of interventions designed to promote resilience for children and young people has produced variable results and tends to be limited to pre-determined programme outcomes, thereby lacking wider critical engagement (Ecclestone, 2012a, 2012b). Responding to this research context, this article describes a transdisciplinary project which explored the possibility of using scientific insights about the ability of organisms to develop resilience to identify unifying ‘rules’ or guiding principles for human resilience and the practical applicability of these principles to real life school-based programmes in the area of social and emotional well-being. The aim was to explore whether a simple model from biosciences could illuminate resilience mechanisms in the social world and be used as a basis to construct a critical evaluative framework for prevention-intervention programmes used in education settings. Before setting out our theoretical model, we provide a brief overview of resilience policy and interventions in schools and of the research literature.

The resilience and wellbeing agenda for schools

In recent years, ‘resilience’ has become a popular and political concern in many countries. In Britain, research and associated interventions designed to develop individuals’ and communities’ resilience have proliferated in schools, mental health, adult community education, social work with ‘troubled’ families and international aid and development (see Aranda, Zeeman, Scholes & Morales, 2012; Durodie, 2010; Ecclestone & Lewis, 2014). In such interventions, resilience is depicted as integral to a set of psychological constructs (a slippery mix of attitude, disposition, skill, behaviour and capability) that are perceived to be teachable and measurable, including stoicism, emotional literacy (self-awareness, empathy, emotional regulation and management), optimism and altruism, and self-esteem (e.g. Seligman, Ernst, Gillham, Reivich & Linkins, 2009; Sharples, 2007).

This concern with resilience has been part of a wider ‘wellbeing’ agenda for children and young people (e.g. NICE, 2008). According to Coleman (2009: 282-3), this agenda for UK schools arose from three main factors. First, the US influence of Daniel Goleman’s book, *Emotional Intelligence* (1996) which highlighted the relationship between social and emotional intelligence and educational and career outcomes. Second, reports of high levels of mental health problems in children and young people in Britain and the linking of this to poor educational outcomes (see also Bywater & Sharples, 2012 and, for critical discussion, Myers, 2012). Third, “a growing international movement for mental health promotion in schools in countries such as Australia and North America”. Coleman also notes the influence of UK New Labour government policy between 1997 and 2009 concerned with social justice and addressing social inequalities.

Many policy-led interventions in schools have resilience as a focus. In British schools, for example, influenced strongly by positive psychology, resilience is presented as one of several constructs that comprise emotional well-being, together with optimism, emotional literacy, altruism, emotional regulation, and other attitudes and dispositions. One outcome has been a rapid growth in the UK from 1997 of universal prevention programmes designed to develop these constructs (Ecclestone, 2012a). ‘Resilience’ is also a focus for targeted interventions for children diagnosed with particular mental health, behavioural, or emotional difficulties.

Resilience research: a brief critical review

Since the 1970’s, the concept of resilience has been developed in the behavioural and social science literature to the point of a broad, consensual definition of the concept as a process involving positive adaptation in the face of adversity (Ungar, 2015). Most definitions encompass an input perspective (exposure to risk and adverse circumstances) and an outcome perspective (adaptation as a result of coping mechanisms) (Mohaupt, 2008). Much research into resilience has targeted children and young people, in the context of which ‘risk’ or ‘adversity’ had been seen to include factors such as poverty, domestic violence, neglect or abuse, parental break up, loss of a parent, or illness. ‘Positive adaptation’ is usually defined in terms of “behaviourally manifested social competence” but sometimes by the “absence of emotional or behavioural maladjustment” (Luthar & Cicchetti, 2000: 858), with the phenomenon of resilience often inferred from these defining elements (Mohaupt, 2008).

In recent years resilience research has moved from an understanding of the phenomenon as an attribute of individuals to an ecological theoretical framework in which resilience is seen as the outcome of “children’s interactions with multiple reciprocating systems, and the quality of those systems” (Ungar, Ghazinour & Richter, 2013: 349) and as a result of transactions between an individual and their environment (Ungar, 2015). Within this framework, the protective factors that enhance resilience identified in empirical research include: environmental factors such as peer relationships and school settings (which may help protect against family adversity); family and parental factors such as “warmth, responsiveness and stimulation”, knowledge and skills, a stable living situation and financial resources; and individual psycho-social factors such as problem solving skills, aspirations, self esteem, self efficacy, self belief, conscientiousness, “planful competence” and “sense of purpose and future” (Hill, Stafford, Seaman, Ross & Daniel, 2007: 10-11; Borge, Christie, Torgersen & Waaktaar, 2004; Hobcraft and Sigle-Rushton, 2008; Mohaupt, 2008; Resnick, 2011; Ungar et al., 2013). Yet while these protective factors are widely recognised, the “protective processes ... through which protective factors operate” (Gerwartz & Edleson, 2007: 158), the mediating mechanisms through which the phenomenon is developed among children and young people and that link protective factors to outcomes, are not yet fully understood (Foot, 2012; Resnick, 2011; Morrison Gutman, 2010; Gerwartz & Edleson, 2007; Mohaupt, 2008; see Gutman, 2007 for a review).

The proponents of programmes that aim to promote resilience claim that they lead to improved educational, social and health outcomes, thereby helping to address educational, social and health inequalities (see, for example, Morpeth & Bywater, 2011; Bywater & Sharples, 2012). They have also been linked to improvements in aggression, substance abuse and risky sexual behaviour (Curtis & Norgate, 2007; Mihalic et al., 2002; Kam, Greenberg & Kusche, 2004; Riggs, Greenberg, Kusche & Pentz, 2006). These positive claims and their universalist approach make them a useful case for an initial evaluation of the practical application of our resilience model for understanding resilience processes. However, evidence of the impact of programmes designed to promote resilience has produced variable results. For particular interventions, there have been inconsistent findings across studies and differential impact across outcome measures. This is demonstrated in evaluations of PATHS, which are discussed in section 6. As a further example, the evaluation of the Penn Resilience Programme found “a significant short-term

improvement in pupils' depression symptom scores" but inconsistent outcomes in relation to impact on anxiety scores, "no measured impact ... on behaviour scores or life satisfaction scores" and "no impact on any of the outcome measures by the two-year follow-up" (Challen & Machin, 2011: 2). In the broader area of interventions for emotional and psychological well-being, which sometimes include 'resilience' as a construct, evidence of effectiveness is inconclusive due to "conceptual confusion, strong advocacy for intervention and competing claims about the best approach" (Ecclestone, 2012a: 469). This additionally highlights need for greater critical evaluation of interventions in this area that broaden the evaluative lens beyond internal programme aims (Ecclestone, 2012b; Ecclestone & Lewis, 2014).

Therefore, the purpose of this study was to advance a theoretical framework for the mechanisms through which resilience is produced, demonstrating its potential through critical analysis of an existing intervention programme. Drawing on a pilot study of one intervention designed to promote children's social and emotional wellbeing and existing research literature, the paper sets out and begins to apply a framework from bio-sciences and evaluates its potential for use to guide critical social research into resilience processes. Our research questions were as follows: Can a rules framework derived from the natural sciences help illuminate the mechanisms through which resilience is produced in the context of children's social and emotional wellbeing? Are they useful as a framework for critical evaluation of interventions?

Theoretical model

Our study brought together researchers from bio-science, cognitive psychology, and the sociology of mental health and education to investigate the possibility of using 'rules', or emergent properties for resilience distilled from the study of micro-organisms in bio-sciences to understand human resilience and how it can be developed. Reflecting the need for a broad conception of resilience in this context, the phenomenon was understood as the process of negotiating, and of managing and adapting to, potential or actual sources of stress or adversity (Windle, Bennett & Noyes, 2011; see also Luthar & Cicchetti, 2000). It was viewed, in bioscientific terms, as a distributed and emergent property, and in social scientific ones, as a situated and relational phenomenon (Aranda et al., 2012; Cote & Nightingale, 2012; Mohaupt, 2008) generated within and through social interaction with "multiple levels of influence",

including the individual, group, organisational and social structural (Luthar & Cicchetti, 2000: 859; see also Ungar et al., 2013; Wessells, 2015). The underlying proposition of the research was that examining natural entities such as cells, organisms or ecosystems which show high levels of resilience reveals fundamental properties or rules essential for their resilience. These rules are biologically adaptive because entities which possess them are more likely to survive, reproduce and pass these properties on than those which do not. They may therefore form an explanatory framework that can be used to investigate the presence or absence of resilience for individuals, groups, institutions and societies.

At their simplest, the rules we can derive from natural systems are intuitively obvious, although they have not been applied systematically outside of the context of science and engineering. Resilient systems, we proposed, must: (a) have the capacity to detect changes which may perturb them (b) link this detection to a response (c) respond in a way which is appropriate, and which in some way either ameliorates the effects of the change or adapts the resilient system to withstand them and to recover from them and (d) end the response when the need is no longer present, because the response is one which will require resources. Our study set out to explore whether these insights could illuminate some of the processes surrounding human resilience and help to inform the evaluation and development of interventions designed to develop resilience.

Our approach was an example of retrodution, an epistemological process and mode of inference often associated with critical realism in which “events are explained by postulating (and identifying) mechanisms which are capable of producing them” (Sayer, 1992: 107). Of course, limitations to applying insights from bio-science to complex social systems and psychological and social phenomena such as resilience are widely recognised. We were aware of critiques of naive realist and empiricist attempts to apply natural laws to and identify universal generalisations in the study of social phenomena (e.g. Bhaskar & Danermark, 2006) and that resilience is generally understood to be a “culturally embedded and contextually sensitive phenomenon” (Lee, 2010: 438). However, we were also aware of the potential of ‘transdisciplinary’ research, in which concepts and theories originally developed by one discipline are applied within or across others, for helping to understand complex phenomena such as resilience (Nicolescu, 2008), of using the framework as a heuristic device to assist in the

exploration of resilience as a social phenomenon. We could see the potential relevance of these insights to interventions that adopt a behavioural and psychological approach to developing resilience among children and young people. As the aim was to put forward a unifying framework, we were also interested in theoretical generalisability from studying a particular case of resilience-promotion in the social world to other target populations.

In seeking to elucidate and apply the ‘rules’, we positioned ourselves within a critical realist ontology which acknowledges the social construction, or production of ‘resilience’ and its meanings as well as the existence of an ‘object’ to be researched (Bhaskar, 1978, 1986, 1989, 2012; Bhaskar & Danermark, 2006). Thus the phenomena in resilience research (e.g. stress, trauma, self efficacy, competence, agency, social capital, and resilience itself) are viewed as real in the sense of existing independently of the ways in which these are conceptualised, measured or tapped and beyond what we can perceive (Bhaskar, 1989; Bhaskar & Danermark, 2006; Busfield, 1996; DeFransisco, 1997). The importance of critical realism over pure constructionism, therefore, is that it “accepts the existence of a real world that is potentially knowable and accepts the superiority of some claims over others” (Busfield, 1996: 49), focusing on the explanatory power of theories. It takes a critical perspective on social practices under investigation and aims to provide emancipatory understandings as an impetus for social change (Bhaskar, 1986).

In the remainder of this article we consider the practical applicability of this theoretical approach for understanding the processes involved in building human resilience and its potential use for critically evaluating interventions designed to promote resilience. As a pilot study, we apply the model to a social and emotional learning programme used in primary schools, PAtHS (Promoting Alternative Thinking Strategies), which is widely used in the UK and elsewhere. The discussion and conclusion consider the potential of the model as a basis for further theoretical development and for evaluating and developing such prevention-intervention programmes.

Method

It was decided that investigating a well-established programme that aims to build resilience would be a feasible and potentially fruitful way of testing our theoretical model in relation to resilience processes and how these may be worked upon through interventions. Although PATHS isn't explicitly termed a resilience-promoting intervention, the programme was chosen as a case study because it was being used and evaluated in our locality and reflects the approach of other widely used school-based interventions in the area of resilience in terms of a combination of cognitive-behavioural and social problem-solving skills (e.g. The Penn Resilience Programme, see Challen, Noden, West & Machin, 2009, 2011) and of a personal skills and an environmental, or 'contextual' approach (e.g. The Bounce Back Programme, Noble and McGrath, 2006; see Note 1). In addition, research literature surrounding PATHS discusses the intervention in terms of the promotion of resilience (e.g. Greenberg, 2006) and the materials refer to how the programme supports the development of "protective factors ... includ[ing] bonding to pro-social peers and adults in school, in the community and at home, and social-emotional skills" (Domitrovich, Greenberg, Kusche and Cortes, 2004: 7). Social and emotional learning programmes like PATHS are widely used in US schools, and in the UK variations of its competence-based approach to content and teaching appeared in the previous government's Social and Emotional Learning Strategy for primary and secondary schools in England (see Hallam, 2009).

We adopted a staged, multi-method and qualitative approach to assess whether and how the model is reflected in the programme, first through examining academic and promotional literature on PATHS, then a selection of materials used with children and for training teachers, followed by a focus group of one hour with three female PATHS practitioners working for a local authority. Normal institutional ethical permissions preceded preparation by participants using the topic guide. After an initial discussion about conceptions of resilience in the programme, the questions turned to whether each of the resilience rules was reflected in PATHS and initially explored whether applying the principles might provide a basis for critically evaluating PATHS as an intervention. An important element was to examine the implications for understandings of resilience arising from the practical elements of the PATHS programme and for this ideas from critical discourse analysis concerning underpinning assumptions and values, socio-political

implications of language and social interaction and what is excluded or marginalised (Gill, 2000) were drawn upon.

Findings

The PAtHs programme

Originating thirty years ago in the USA, PAtHs is a prevention-intervention programme designed to promote social and emotional ‘wellbeing’ in primary aged pupils. It has since been applied internationally, including in many European countries and all four countries of the UK. The programme is a universal, classroom based programme designed to develop all children’s social and emotional competences. An overarching aim is to improve educational, social and health outcomes, thereby addressing inequalities in these areas (Morpeth & Bywater, 2011). More specifically, it aims to “prevent violence, aggression and other behavioral problems by promoting social competence” (Domitrovich et al., 2004: 8), to help children manage their feelings and conflict, and to “enhance the educational process” (Channing Bete Company, 2012; Note 2). Objectives encompass increasing children’s self-control and developing their skills of empathy, perspective taking, reflective thinking and social problem solving (Channing Bete Company, 2012; Note 2).

PAtHs provides a developmentally based programme of activities and accompanying manuals, with curriculum packages from preschool to grade 5/6. A key element is the teaching of a sequence of steps for problem-solving in the face of a difficult or upsetting situation. For younger children, the ‘turtle technique’ requires children to ‘stop, breathe, then ‘say the problem and how you feel’ (Greenberg, Kusche & Channing Bete Co. Inc., 2008). For older children, a ‘traffic light system’ involves stopping, calming down and articulating the problem (red), making a plan (yellow) and then acting and evaluating the course of action taken (green). Programme goals also include promoting pro-social behaviour and assisting with ‘character development’ by discussing the biographies of historical and contemporary role-models in terms of the emotional and social competences they have had to use to overcome adverse situations (Channing Bete Company, 2012; Note 2). Typically, lessons of around half an hour take place twice a week, while the programme is also intended to be embedded in other parts of the primary curriculum, such as literacy and history. Crucially, PAtHs advocates a ‘whole school approach’ where all staff,

including canteen and playground staff, help implement the programme, encourages peer learning and support, and also involves parents in encouraging children to practise skills at home. More generally, the programme aims to foster a “positive classroom climate” (Domitrovich et al., 2004: A-13) which encourages “empathy and openness in dealing with emotional needs” (Kam et al., 2004: 67).

PATHs is based a range of theories from developmental psychology (see Domitrovich et al., 2004) and, as noted above, like other widely used interventions in the area of social and emotional learning and resilience (e.g. Challen et al., 2009, 2011), incorporates ideas from cognitive behavioural psychology. Based predominantly on the ABCD (affective, behavioural, cognitive, dynamic) developmental model in which “a child’s behaviour and internal regulation are considered to be functions of their emotional awareness and control, their cognitive abilities, and their social skills”, the programme aims to integrate affect, behaviour and cognitive understanding (Curtis & Norgate, 2007: 34). In addition, a theory of language and emotion is implicated. This neuropsychological theory focuses on the use of language for “regulating emotions and the development of reasoning” (Channing Bete Company, 2012 – Note 2; see Greenberg, 2006). Other underpinning theories are that of ‘emotional intelligence’, concerned with emotional awareness and control, and psychodynamic education theory, which emphasizes the importance of ‘role models’ and the quality of teacher-pupil relationships for children’s social and emotional development (Domitrovich et al., 2004). The eco-behavioural systems model, concerned with learning requiring environmental changes to provide opportunities for skills to be practiced and generalised is also drawn upon (Curtis & Norgate, 2007).

Evaluations of PATHs with randomised control trial designs have been conducted in a range of countries over nearly 20 years, with the earliest ones conducted in the USA (e.g. Kam et al., 2004; for a review, see Bywater & Sharples, 2012). However, research findings on their effectiveness remain variable. In the UK, many findings, for example with regard to outcomes of developing empathy and self-control skills and ‘pro-social behaviour’ have been encouraging but those regarding effects on other behaviour and measures of ‘emotional health’ more broadly have been less so, and findings have also remained inconclusive due to the difficulty of isolating the influence of PATHs and differences in baseline scores in intervention and control schools (Curtis

& Norgate, 2007; Morpeth & Bywater, 2011; Ross, Sheard, Cheung, Elliott & Slavin, 2011). As noted earlier, much evaluation work in this area also seems to lack wider, critical engagement (see Ecclestone, 2012a, 2012b; Ecclestone & Lewis, 2014), meaning the implications of programmes for the educational experiences of children and young people remain under-explored. Questions about long-term impact into adulthood, for example in relation to educational and social equalities and in reducing violence and aggression, also remain (Morrison Gutman, Brown, Akerman & Obolenskaya, 2010; Gewirtz & Edleson, 2007; Palma & Balanon, 2007).

Applying the principles

As noted above, a key element of the PAtHS programme is the teaching of a sequence of steps for dealing with difficult situations. There is a carefully staged process in the forms of control signals (“stop, make a plan, go”) and the ‘turtle technique’, outlined above. A more detailed model of social problem solving taught in year 5 contains 11 steps:

1. STOP and CALM DOWN.
2. Identify the PROBLEM (collect lots of information)
3. Identify the FEELINGS (your own and other people’s)
4. Decide on a GOAL
5. Think of lots of SOLUTIONS
6. Think about the CONSEQUENCES (what might happen)
7. Choose the BEST solution (evaluate all of the alternatives)
8. Make a good PLAN (think about the possible obstacles)
9. TRY MY PLAN
10. EVALUATE – How did it go?
11. If you need to, TRY AGAIN.

(Greenberg, Kusche & Channing Bete Co., 2008, p. 29).

Linked to this 11 step model, Year 5 Unit 2 on problem solving includes a lesson entitled “Identifying problems – Feelings, Goals and Solutions” with specific objectives as follows:

- To provide individual practice in identifying problems (Step 2)

- To provide individual practice in identifying feelings (Step 3)
- To provide individual practice in identifying goals (Step 4)
- To provide group practice in generating solutions. (Step 5)” (Greenberg, Kusche and Channing Bete Co., 2008, p. 35)

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These staged processes reflect our theoretical framework. For example, Rule A asserts that resilient systems must have the capacity to detect changes which may perturb them, and, as the models above demonstrate, a core aim in PAtHs is to help children learn to identify problems and feelings. In our focus group, detection of feelings and problems were described by participants as a focus of the programme:

There’s a lot of work done with the children all around feelings and being able to recognise when they’re having uncomfortable, comfortable feelings, what those feelings are like and giving the children the ability to label those feelings and to be able to communicate those feelings. (...) I think we are helping to give the children the skills to be able to detect when they are feeling a little bit uncomfortable or a change is happening that is making them quite, quite anxious, quite worried and so, yes, it could perturb them.

Perhaps a preamble to all of this is that children recognise that there is a problem, because you can only bring about change when you recognise that something might be [pause] wrong or needs mending and sometimes, they don’t.

The need to ‘detect’ a problem and its accompanying emotional arousal as a key first step in the process of resilience is therefore a powerful principle in PAtHs. There is concern with heightening children’s self awareness and understandings of their feelings, particularly those that are ‘uncomfortable’, and their social awareness in relation to the feelings of others (see, for example, Domitrovich et al., 2004) as “a central component of effective problem-solving and social interactions” (Curtis & Norgate, 2007: 35). Furthermore, our focus group discussion showed how the central notion in PAtHs of initially needing to recognise problems through internal and external awareness encompasses other actors within the social system as teachers are encouraged to be able to identify problems or stressors children may be experiencing:

I do think though some teachers see it as very much a kind of anger management strategy and we spend quite a lot of time with the teachers and with the children (...) encouraging them that turtle you know can be used actually if you're feeling just a little bit anxious inside so there might not be anything, you wouldn't recognise it [in] your very timid, quiet children but it's a way of them handling those emotions.

Linking to Rule A, participants were pressed further on the focus of the 'detection', or problem identification element of the programme. The following discussion followed another participant's comments about how PATHS encourages disclosures of "sad or uncomfortable things":

Facilitator: And does that focus on, what's troubling or perturbing someone, does that tend to be on an individual level or would you say there's capacity to explore the social conditions that might sort of make people feel perturbed or troubled? (...)

Participant: There's both, there's room for both. So the children, during the lessons they will talk about things that make them feel a particular way, they're encouraged to talk about situations, they're shown photographs and pictures of situations or relationships between children, or *problems* and asked 'how does this make you feel?' and the children are asked to *share* and then encouraged to realise that different people feel different things about the *same* situation, and then as the curriculum builds, the children also will look perhaps at current affairs or biographies and think about how they would feel if they were *that* person (her emphasis).

These comments illustrate the 'social awareness' aspect of PATHS, where children are encouraged to consider how immediate environmental circumstances and personal relationships might have an impact on their feelings and to empathise with those of others. Furthermore, and perhaps leaving aside the focus in PATHS on very young children, consideration of feelings for political actors could be a spring board for encouraging an understanding that emotional states are linked to wider political conditions. Perhaps unsurprisingly, however, there was no evidence

in our study that the PAtHs curriculum substantively addresses the crucial relationship between social power relations and emotions.

Using the resilience rules framework, our study raises additional questions about the way in which interventions like PAtHs can encourage ‘detection’ of problems at an organisational level. When asked about whether PAtHs could encourage the expending of emotional resources that are no longer necessary, or encourage too much counterproductive introspection and worrying, focus group participants commented that part of their role involved demonstrating the value of the PAtHs programme to schools that initially felt they didn’t need to use it because they were already performing at a high level.

This indicates that PAtHs fits closely with, and reinforces, a target-led approach to being ‘outstanding’ at emotional literacy. However, in relation to identifying (potential) problems, the comments also align with Staw, Sandelands and Dutton’s (1981: 501) point that when it comes to resilience, “many effects appear to generalize across levels of analysis ... [because] organizational actions are often initiated by individual and groups forces, such that social and psychological effects indirectly influence organization-level phenomena”. An important caveat here, however, is that while there is often a confluence between these different scales of resilience, between resilient organisations and ‘resilience-promoting’ organisations, this does not always exist; indeed the resilience of an organisation or family can be at the expense of some individuals within these (see, for example, Easterbrooks, Chaudhuri, Bartlett & Copeman, 2011; Note 3).

In relation to Rule b (link detection to a response), the staged problem solving model in PAtHs guides children to do this, and in year 5 there is a whole unit on problem solving. As one focus group participant observed:

We’re looking at a whole class intervention here, where problem solving [is] an integral part of that. So we’re having problem solving meetings about all sorts of things that are happening either on a daily basis or a weekly basis so you become proficient problem solvers. (...) The whole idea is that children, once they are calm they can think and that’s

our strap line to any problem solving; you stop, you calm down and then you generate solutions, and you generate not just one but several because the first one might not work so you have to go back, you evaluate it, again choose the most *appropriate* one, thinking about what are the consequences and you go back and try again.

This participant's account reflects a view from the designers of PATHS that problem-solving strategies need to be iterative and encourage 'consequential thinking' in children as part of a sequential response (Greenberg, Kusche & Channing Bete Co., 2008). According to the Year 5 curriculum materials, this consequential thinking "involves learning to (1) anticipate and (2) evaluate the results of solutions, by thinking ahead realistically to what might happen if a solution is tried" (Greenberg, Kusche & Channing Bete Co., 2008, p. 43). One participant described this:

Looking at our traffic light signal that's very much where the yellowy orange part comes into play, because once they're calm, they're able to start to think 'well, what are the different problems and what are the different sort of solutions we could have?' and have an input into looking at different solutions, adapting 'well, I could do this choice of behaviour, I could hit them back, I could go and ask someone [get a] a teacher to help me, I could just walk away from the situation'. So they're encouraged to come up with different sort of solutions, adaptations - *once they're calm* - and to reflect on those and think 'well, is that an ok choice of behaviour, is that a not ok choice of behaviour' and to choose one of those that they feel is relevant and actually test it out.

Following our resilience model, this account describes how the staged process connects 'detection' of a social or emotional problem to a response, underpinned by the ABCD model of child development discussed earlier, which presents behaviour as dependent upon cognition as well as emotional awareness and control (Curtis & Norgate, 2007). Reflecting too the programme's underpinning neuropsychological theory of language and emotion, PATHS emphasizes articulating the problem as crucial (Channing Bete Company, 2012 [3]); there is an emphasis on the use of language for "regulating emotions and the development of reasoning" (Channing Bete Company, 2012 [3]; see Greenberg, 2006). This use of language to help in problem-solving is a particularly interesting aspect of the programme given that "there is little research that relates language

acquisition skills to resilience” (Ungar et al., 2013: 358). The practitioners in our study were enthusiastic about this element:

Participant: The whole idea that we are teaching a consistent, structured kind of system is really, really helpful, so that whether you are in reception or year 6, you have to stop; for the early years ‘doing turtle’, but that’s about *stopping*, it’s about taking that breath but also importantly it’s about articulating something, recognising that there is a problem and you can articulate that and you then can talk about how you’re feeling. If you’ve got a *structure* like that that *everybody* recognises, it’s giving you a vehicle for bringing about change because it’s allowing you a system, if you like, to be able to vocalise that and everybody knows that that’s how you’re going to deal with those kind of issues that are uncomfortable or difficult or problems you’re feeling upset about.

Facilitator: So the language competency is seen as very important for achieving this kind of linking response?

Participant: Yes and the whole complexity of that as you get into key stage 2 which *is* for children to begin to analyse much more in depth the idea that actually there are different perspectives, that sometimes what you see isn’t the *complete* picture and [pause] that is very, very helpful because in some respects I think children can often be quite egocentric, you know, what they see is what they think is happening and they’re going to stick with that, and it’s very hard to bring about change or a sense of discussion even sometimes. Whereas if you’re constantly looking at different scenarios and dilemmas and situations and problems from *different* angles, different perspectives, noting the fact that we *all* have very different feelings about the same thing, I think it’s a facilitator for change if that makes sense and helps, you know, a different kind of response.

This account reflects Rule c of our model (respond in a way which is appropriate, and which in some way either ameliorates the effects of the change or adapts the resilient system to withstand them and to recover from them). While the previous two extracts highlight the way in which the intervention encourages a response which is ‘appropriate’ or ‘relevant’ to the stressor or change, the account above adds how the reflective, consequential thinking element of PAtHs encourages a process of social adaptation to encourage a response which is likely to bring about an

ameliorating effect. The focus group discussion showed how this definition of ‘appropriate’ encompasses a normative assumption while avoiding constructing behaviours in overtly moralistic terms, as one participant described how within the programme, it is explained to children that “it’s ok to feel all those different feelings but how they actually respond might be ok or not ok, and we don’t call it good and bad.”

PAThS therefore encourages a response to a social problem or perturbing situation that requires individuals to adopt a response that is fitting within the norms of the social system in which they are operating (see Cote and Nightingale, 2012). Furthermore, PAThS encourages adaptation of a range of social actors within a social system, with reward and reinforcement, including from peers, important to the learning process. One participant described how it doesn’t become really effective “until the children start to intrinsically take it on board and think *actually* when I do this, then it makes life a lot easier.” Another pointed out how the onus is on getting children to use, or adapt, the learning in different situations, rather than to adopt it in a rule-bound manner, and that the intervention is inevitably normative in its social responsibility element as part of the wider school policy on behaviour. Another important consideration for evaluative research in this area was thus highlighted here - that there is a need to question the assumed “normal aspects of resilience” (Aranda et al., 2012: 550) as resistance to societal norms and expectations can also constitute a way of generating resilience (and indeed of being socially responsible) for individuals and groups (see also Bottrell, 2009; Ungar, 2004; Ungar et al., 2013).

Application of Rule c., concerning responding in an adapting or ameliorating way, to the stressor also highlights a further point concerning who or what is required to adapt. As a ‘whole school’ intervention, PAThS encourages adaptation of a range of social actors, as noted above, and adaptation of families, classrooms and schools, as inter-active systems. Yet, as with other SEL programmes, the focus in PAThS is on the child rather than on adapting other elements of the system (see Ungar et al., 2013) through action on contexts (Edwards, 2007).

Lastly, Rule d. (end the response when the need is no longer present, as the response is one which will require resources) is indicated in PAThS by the ‘evaluation’ step in problem solving, through reflection on the effectiveness of action taken to resolve a problem that can end a

redundant (or ineffective) response. One participant pointed out that this rule could also be interpreted in terms of the ending of an ‘active’ response once an effective solution to a problem has been implemented and at the organisational level:

Thinking on a *structural* level, we have schools that have been trained, all the teachers know PATHS, we have been working with them for a very long time and there is a sense in which we would end our resourcing of that and move on. (...) And I suppose the only other element would be in classes where we, not often, but sometimes PATHS staff that say ‘we’ve done turtle, we’ve done the control signals but our children just don’t need it, you know there’s just no opportunity apart from us modelling it and we’ve done lots of that, they just don’t appear to need it at present, either in the classroom, or in the playground or whatever’.

At the level of the educational system as part of the wider social structural organisation then, ending PATHS as an intervention, or response when the school didn’t seem to or no longer presented a need for intervention could be seen to reflect rule d. of the resilience framework. This may involve assessment of the degree to which learning from the intervention has become embedded or intrinsic to individuals, groups and organisations- a process generally understood to take between 18 months and three years (Jessiman, 2006) - or whether its use has become redundant or ineffective due to changing contextual factors. However, participants pointed out that while some ‘end points’ might be identified, reflecting our definition of resilience outlined earlier, PATHS needs to be viewed as a dynamic system involving not only learned responses but on-going interaction and adaptation processes (Mohaupt, 2008).

When interpreted in relation to the ‘costs’ of various kinds of building resilience, Rule d. additionally highlights some important critical considerations. Participants felt this rule couldn’t legitimately be interpreted in relation to too much expending of emotion and introspection at the expense of other educational engagements as, rather, the programme “gives children a chance to express how they’re feeling” and “frees them [teachers] up to teach other things (...) [as] the classroom environment is more positive and calmer.” However, when viewed in terms of on-going gender-related ‘emotion work’ (Hochschild, 1983), costs in terms of time and energy need

scrutinising and from the point of view of social and educational inequalities, there is a need to consider to what degree these are equally shared between males and females. The educational benefits and dis-benefits of encouraging children to use an emotional lens to interpret their own everyday experiences and reactions to situations and of encouraging emotional readings of historical political events also require further scrutiny.

Discussion

The findings of the pilot study support other research which shows approaches to problem-solving are important to resilience and how for children, adaptive responses to stressors depend on both the perceived and actual social, psychological and material resources available to deal with problems and mitigate risks (Ungar et al., 2013, Ungar 2015; see also McCreary et al., 2011), with “the interplay between context and individual” as key (Edwards, 2007: 257). From this standpoint, the practitioners thought the rules framework is useful for breaking down the processes involved in generating resilience into a series of steps. More broadly, and with more time, it might also aid practitioners’ understandings of the multi-level processes surrounding the phenomenon. It can therefore be useful for helping to illuminate the processes involved in interventions like PATHS, as well as for making resilience as a goal more explicit. Moreover, the critical discussions raised by application of the model suggest that it may provide a means for exploring key debates in critical evaluative research with practitioners and other stakeholders, particularly regarding who or what is expected to adapt and the costs in various guises of explicitly attempting to build resilience through prevention-intervention programmes.

These are important concerns because the target of an intervention implies the location of the perceived problem. This is one reason for a preference among some practitioners for environment-focused programmes aimed at parents or at influencing teaching approaches and school culture (such as *Celebrating Strengths* – Fox Eades, 2008) to interventions centred on children. Indeed, current research evidence supports a “decentred’ understanding of resilience” in which it is changes in the context “that create the conditions for resilience” rather than on the part of the individual that are more important to outcomes (Ungar et al., 2013: 360; see also Edwards, 2007, Ungar, 2015). For instance, family acceptance and accommodation to change is often crucial (Ryan, Russell, Huebner, Diaz and Sanchez, 2010) and supportive peer networks

can be helpful (Ungar, 2015). This is a particularly important point given current sociological critiques of the increasing expectation and imposition of individual behavioural solutions to socially produced problems as an element of social control within modernity, with ‘confessional society’ through therapeutic interventions being powerful features of this (see Ecclestone & Hayes 2009).

Indeed, although the framework of resilience has become a trend (Palma & Balanon, 2007), the costs, or dis-benefits at a range of levels of explicitly attempting to build resilience, through psychological training, for example, have been little discussed by researchers and there is still only limited understanding of the wider and longer-term implications of prevention programmes in this area (Gerwartz & Edleson, 2007; Morisson Gutman et al., 2010). This has been in part because efforts to apply research evidence on protective factors have given insufficient attention to the functional utility of skills taught within the social and cultural contexts of the lives of children and young people (Luthar & Cicchetti, 2000).

As previously, noted, many SEL and resilience programmes now claim to take a ‘systems’ approach which seeks to adapt all actors in order to support the skills learned by those targeted (see, for example, Curtis & Norgate, 2007). However, there can still be costs involved. For instance, when defined in terms of ‘social competence’ (Luthar & Cicchetti, 2000: 858) and educational success for less privileged groups, resilience can involve feelings of cultural dislocation and lack of belonging, and the loss of some relationships or valued facets of one’s sense of self and way of being, for example at points of educational transition. As Lee (2010: 439, citing Ungar, 2004) points out, resilience requires negotiation of such tensions to achieve ‘healthy functioning’ which, being a “culturally embedded and context specific normative judgement ... may not align with the person’s subjective point of view”.

In relation to schooling, consideration of such tensions and potential losses can indicate the need for institutional adaptation in respects (Ungar et al., 2013) and the way in which these may impact the aim of programmes like PAtHs to tackle educational and social inequalities is an important question for critical evaluative research into programmes like PAtHs, especially considering the general inattention to mental health inequalities in existing studies (Kavanagh et

al., 2009). At a wider level, socially and politically, a focus on resilience may also be seen to include a potential risk, or cost of “a whitewashing of the suffering that always attends resilient behaviour” and of diverting “action directed at the causes of threats” (Hoggett, 2011: 18-19) or ‘the causes of the causes’ (e.g. inequalities that underpin violence) (see also Wessells, 2015). Evaluations of interventions therefore need to give consideration to such potential unanticipated consequences.

We argue that the critical interpretation and application of the rules framework outlined in this paper may help understanding in critical social scientific research of the processes through which resilience operates. Once fully elaborated through relevant questions informed by social science, it also has potential use as a framework for much needed critical evaluation of programmes designed to promote social and emotional resilience among children and young people. Here there is a need for acknowledgement of the complex systems involved in generating resilience when developing interventions and social policy in this area (Ungar et al., 2013) as well as to consider issues of equity and justice surrounding resilience outcomes by “bring[ing] normative issues to the centre of our analyses, and emphasiz[ing] the political dimensions of response options available to different actors” (Cote & Nightingale, 2012: 482). Such questions may therefore include:

- (Rule a) Does the programme aid detection of (potential) problems by a range of social actors and at a range of levels? Where is the focus – internal states or external factors? Does the intervention help identify the link between these and give consideration to wider socio-political factors?
- (Rules b and c) Does the programme help identify/develop resources to deal with problems and develop a response to these? Where is the focus, adapting the individual or other actors and the context? What are the ethical and political implications of this focus? Is the response encouraged appropriate to the issues raised? Is consideration given to opportunities for changing or taking action on upsetting environmental conditions? Is the response likely to produce a short or long-term ameliorating effect?
- (Rule d.) What are the dis-benefits or ‘costs’ of explicitly attempting to build resilience (through psychological training, for example)? How do these weigh up against the benefits? How do these costs potentially impact upon educational and social inequalities?

Potential weaknesses of the model are that it appears less relevant in the context of resilience processes which are not concerned with immediate problem-solving (for example the elements of the PAtHs programme concerned with character development more broadly) and that its application can be difficult given the differences in language use between the natural and social sciences (e.g. in translating ‘detection’ of a problem into understandings of processes surrounding identifying or recognising problems or stressors and, heightening understanding and awareness of self and others). From cognitive psychological and social perspectives, applying rules b. and c. independently may also be difficult in the context of research into interventions which aim to build resilience in human populations as there may not always be a clear distinction between linking detection of a problem to a response and actually responding (Note 4).

Conclusion

This article has set out a preliminary model for the transdisciplinary investigation of guiding principles, or ‘rules’ for resilience. The case study demonstrates the practical applicability of the rules framework for enabling social researchers to elaborate the multi-level processes involved in promoting resilience. It also illustrates the potential use of the framework for critically evaluating interventions in the area of resilience by drawing in questions about the focus of the problem identification function (e.g. internal or external), the appropriateness of the programme responses to the ‘adversities’ encountered (including with regard to efforts towards changing versus adapting to a stressor), who or what should adapt within a systems perspective, to what degree individual, collective or institutional solutions to problems are encouraged, and the various kinds of costs that may be associated with explicitly attempting to build resilience through prevention-intervention programmes. Its interpretation in the context of social research into resilience provides a way of developing a critical evaluative framework for resilience interventions in the area of children and young people’s social and emotional wellbeing and potentially also interventions in other social policy settings.

We also suggest that the model may provide a basis for translating theoretical, explanatory insights across the boundaries of bio-scientific and social research (Bhaskar, 2012; Klein, 1996; see Bhaskar & Danermark, 2013), with an aim towards transdisciplinarity in the sense of “a

fusion between insights from different disciplines within some overarching framework” (Dickens, 2003: 95). It may provide an initial framework for the transdisciplinary critical realist research which aims to identify ‘causal laws’, or generative mechanisms for resilience (Bhaskar & Danermark, 2006) operating at multiple, interacting levels that can be applied across contexts. From this stance, the overall aim is construction of a ‘laminated system’ for resilience – “a system that refers essentially to several different levels [or aspects] of reality” (Bhaskar & Danermark, 2006: 280), including the bio-scientific, psychological and social, and how these interact to produce an emergent outcome (Bhaskar, 2012). Such an approach to resilience research, which avoids epistemological reductionism (Bhaskar, 2011) by drawing in a range of disciplinary perspectives is necessary in order to achieve a more holistic perspective (Cote & Nightingale, 2012) which can capture the systemic complexity of the phenomenon of human resilience (Ungar et al., 2013).

Notes

¹ See: <http://www.centreforconfidence.co.uk/projects.php?p=cGkPTU3JmlkPTM2OA>

² PAtHs Program web site: <http://www.channing-bete.com/prevention-programs/paths/paths.html>. Accessed 16th January 2012.

³ Thanks to Sue Morris and Jerry Tew for these points.

⁴ Thanks to Giles Anderson for highlighting this point.

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