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All the ACEs: A Chaotic Concept for Family Policy and Decision-Making?

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ABSTRACT AND KEYWORDS:

This paper will consider ACEs as a chaotic concept that prioritises risk and obscures the material and social conditions of the lives of its objects. It will show how the various definitions of ACEs offer no cohesive body of definitive evidence and measurement, and lead to a great deal of over-claiming. It discusses how ACEs have found their time and place, locating a variety of social ills within the child's home, family and parenting behaviours. It argues that because ACEs are confined to intra-familial circumstances, and largely to narrow parent-child relations, issues outside of parental control are not addressed. It concludes that ACEs form a poor body of evidence for family policy and decision-making about child protection and that different and less stigmatising solutions are hiding in plain sight.

Chaotic concept, child protection, family policy, poverty,

INTRODUCTION:

Adverse Childhood Experiences (ACEs) are currently centre stage. 'ACE-awareness' is advocated to inform the training and practice of professionals. ACEs are to be used to identify specific families deemed in need of intervention. Here we consider ACEs as a chaotic concept, one which prioritises risk and obscures the material and social conditions of the lives of its objects. Chaotic concepts are abstractions that conflate different issues, or divide up indivisible processes, leading to problems in their explanatory weight and hence in developing policy and interventions on their basis. We will show that there is no cohesive body of definitive evidence and measurement for ACEs, and that they have the effect of diverting legitimate attention from adverse environments. We will present some exemplars from the primary research on ACEs to demonstrate the instability of the knowledge base. In our final section we explore the impacts of socio-economic privations which are currently hiding in plain sight but are strangely absent from policy. We conclude by pointing to some undesirable consequences emerging from well-intentioned 'ACE aware' initiatives.

THE CHAOS OF ACES

ACEs are an attempt to identify a set of traumatic conditions experienced before the age of 18, and to trace the 'score' of events in a simple causal manner through to alleged long-term biological damage to physical and mental health that these early experiences are purported to create. Findings from studies using ACEs are regarded as 'hard' data for policy and decision making. However, while statistical

methods and evidence have an important role to play in policy-making they have certain important limitations. Jerrim and de Vries (2017) discuss a wide array of uncertainties that should be made transparent, including weak measures, measurement error, missing data, and statistical significance. These are all evident in ACEs studies as we shall show below (see Hartas, this themed section). In contrast to an acknowledgement of its provisional nature, the evidence as deployed by the 'ACE movement' advocates and by policy-makers is promoted as scientifically definitive, e.g. http://www.barnardos.org.uk/news/press_releases.htm?ref=129366.

For rigorous tracing of causal inputs through to effects, ACEs need to be a clearly defined set of experiences. Yet, they are chaotic in encompassing a shifting range of possible abuses and dysfunctions, and show inconsistencies in claims about severity, timing and duration. For example, in standard ACEs inventories (e.g. Felitti et al. 1998; Bellis et al. 2014) the boundaries between common family circumstances and abnormal experiences become blurred. A 'yes' answer to 'were your parents ever separated or divorced' constitutes an ACE whether it was amicable or adversarial, or occurred before the respondent was born, when a toddler, or a teenager. Similarly, the ACE criterion 'living with anyone who was depressed, mentally ill or suicidal?' takes no account of who this is, severity or duration. ACE advocates are casting the net ever more widely to include more situations, including parental disability, mothers' health, lack of routine, inter-parental conflict, moving home, and violence involving a sibling or peer (e.g. Harold and Sellers 2018). The implication is that all these different experiences and the variety of combinations of them are comparable, underpinned by a common mechanism.

There is further chaos in the methodologies adopted by ACEs studies. There are retrospective studies based on people's recollections, and prospective longitudinal designs subject to the specificities of the temporal period from which they start (Reuben et al. 2016), as well as different sources of information and assessment. Whatever their methodology, most of the putative ACEs have in common their narrow remit of consideration, that is the 'household', and in particular, parent/s and child. There is no attention to the influence of subsequent experiences in ameliorating or exacerbating their effects (see Coyne's (2017) discussion of Horwitz et al. 2001). The concept and measurement of ACEs does not capture confounding contextual issues that are beyond parental control and that can harm people emotionally and physically, such as being subject to racism/Islamophobia in a context where recorded 'hate crimes' are rising in the UK (O'Neill 2017). They do not extend to contextual factors, including wider family and friendship networks, school experiences, neighbourhood circumstances, the provision of informal and informal support services, and the broader socio-political regime (Petrie et al. 2018).

ACEs then are an example of the methodological notion of a 'chaotic concept' (Sayer 2010) – an abstraction that both conflates issues and divides indivisible processes with the consequence of hiding or ignoring the essential features shaping an outcome, a point to which we return later. ACE studies can provide no indication of how best to intervene, cannot point to whether or not an intervention, of what type and when, works. Indeed as Kelly-Irving and Delpierre point out in their contribution to this themed section, they cannot and should not be used to predict individuals at risk. So, let us briefly examine the evidence from within the paradigm.

SOUND AND FURY? HOW DO THE ACES MEASURE UP?

Despite the conceptual chaos, we have noted the bold and portentous claims made by policy makers, clinicians and practitioners in relation to ACEs. Intergenerational disadvantage and reducing the demands on health care systems caused by 'multimorbidities' are currently policy priorities. ACEs form part of a biological mode of explanation which has become common-place over the last decade.

The explanatory story is simplified into persuasive tropes through a variety of intermediaries with various mechanisms at work. For example, civil servants are often faced with an over-saturation of evidence. Their sense of personal efficacy, and hope of career advancement, is afforded when the government of the day accepts their proposals as policy. Thus, a good deal of a civil servant's day is spent in discussion and argument with others within the state machine and crafting persuasive stories is central (Stevens, 2011). Broer and Pickersgill describe how opinion formers in Scotland use neuroscience to give 'epistemic authority' to policies which they felt were politically and morally right, engaging self-consciously in 'pragmatic reductionism' (2015: 59) to render the science into simplified form, "packaged" to persuade. There is a strong lineage in the vocabularies associated with ACEs, which can be traced to the Harvard Center on the Developing Child and its long-standing collaboration with the FrameWorks Institute, a communications company. This was focused on the production of

of a core story of development, using simplifying models (i.e., metaphors) such as "brain architecture," "toxic stress," and "serve and return" to explain complex scientific concepts to non-scientists (Shonkoff and Bales, 2011: 17).

The production of a 'core story' required the development of a new vocabulary to develop 'powerful frame cues'(Shonkoff and Bales, 2011: 20) in the form of metaphors and values. Expert knowledge was thus recast through folk understandings, to show people what they think they already know. The act of translation by the FrameWorks collaboration, in the US context, involved challenging a dominant cultural notion that childhood adversity was something to be overcome by rugged individualism and self-reliance (Bales, 2004). This, by necessity, had to involve emphasising the 'damage' and 'toxicity' of suboptimal childhoods. ACEs are currently described on the Harvard site as follows:

When a child experiences multiple ACEs over time...the experiences will trigger an excessive and long-lasting stress response, which can have a wear-and-tear effect on the body, like revving a car engine for days or weeks at a time (<https://developingchild.harvard.edu/resources/aces-and-toxic-stress-frequently-asked-questions/> last accessed 5/11/18).

We note that the site shows a welcome shift in tone and now explicitly refers to environmental factors and social deprivation as part of the ACE story, but the narratives of biological damage, dose and toxicity remain, albeit modified by caveats.

In the UK context, these stories enter an increasingly interventionist child protection system (*inter alia*, Featherstone et al. 2018) which has shown itself to be enthusiastic about transferring the notion of future harm into the more coercive of the State's activities – the compulsory removal of children from their families. Over the decades,

precarious and fragile child development has featured in the legitimating narratives of the system. We have arguably reached a high-water mark of precautionary removals. In the first English study focused on newborn infants (under one week of age) in the family justice system, Broadhurst et al. (2018) note that care proceedings were issued on 1,039 newborn babies in 2007/8. By 2016/17, the number was more than double at 2,447. Whilst the report does not explore reasons for the increases, it seems highly likely that the need to nip biological damage before it buds is a significant part of the story.

We have noted that the ACE concept as invoked in policy and practice is chaotic. At one level, it seems benign enough – the imperative to pay attention to people’s social histories when they misbehave in school or present with mental health difficulties or end up in trouble with the police makes a lot of sense. In this iteration, no measurement or scoring is necessary, we simply need sensitive professional practice. But, the ACE agenda borrows an actuarial vocabulary. Researchers make strong claims about dose and invite targeting by ACE score. Even if the response to screening is simply more questioning, this has the potential to drag more families and children into state surveillance we have noted above. With such consequential possible sequelae, it is vital that the evidence is carefully appraised and frequently it is not. In the remainder of this section, we will interrogate two examples of the primary research, in order to examine effect sizes, and *inter alia* to bring out some of the contradictions and confusions that arise within the paradigm itself; we seek also to show something of the ideological direction of travel. One paper is from the US, published in the *American Journal of Preventive Medicine* (Wade et al., 2017); the other derives from the UK, published in the *Journal of Public Health* (Bellis et al., 2014).

Prompted by the high level of intercorrelation of amongst ACEs (i.e. that individuals with one adversity tend to have others), the aim of the former study was to boil down the standard 11-item (5 categories of abuse, 6 of household stress) Behaviour Risk Factor Surveillance System (BRFSS) ACE measure to shorter instrument. Results are based on a retrospective survey of over 70k adults, and in common with the norm, exposure to 4 or more ACEs was adopted as the criterion for elevated risk of “chronic health problems” (Wade et al., 2017: 2). The study identified “emotional abuse” (being sworn at, insulted or put down by parents) as the “adversity” most commonly “endorsed” (a suggestive term) in the “abuse” category for individuals with 4 or more ACEs, and equivalently “household alcoholism” (living with a problem-drinker or alcoholic) in the “household stressor” category. Interestingly, parental divorce/separation was not considered for inclusion “as these experiences are protective for some children” (p. 4).

The main finding of the study was that the two-item questionnaire correlated very highly with the 11 item measure, and was just as predictive of poor health outcomes, leading the authors to advocate the two item instrument as “ideal for the rapid identification of individuals with significant childhood adversity”. In terms of effect sizes, the results are also of interest. These are expressed as odds ratios. To pick one example, the odds of heavy drinking (defined as more than 15 alcoholic beverages per week for men, and 8 for women) is approximately 50% greater for individuals reporting 4 or more ACEs. At one level, this sounds quite a salient result, but how large an effect is this? Using the most widely used method to quantify the

magnitude of an effect (Cohen's d), this just squeaks in as a small effect ($d = .2$). A more intuitive concept in a clinical context is that of the Number Needed to Treat (NNT), which indicates the number of individuals who would have to receive some form of intervention to "cure" one additional case; here NNT is eight. In general, the effect sizes (odds ratios) across a broad range of health outcomes range are less than 2 (small effect) for most outcomes (13 out of 16).

Turning to the UK study (Bellis et al., 2014), this is also a retrospective survey (approximately 1500 adults) of health and other outcomes, using the 11 item BRFSS scale (although with some differences in definitions). The study begins by again drawing attention to the high levels of intercorrelation between the experience of different types of adversity. Regarding outcomes, it is notable that those in the categories of sexual behaviour, mental health, substance use and violence/criminal justice are by far the most seriously affected. Of the 26 specific outcomes assessed, 9 of the "top ten" are in these four domains, with use of cannabis the most commonly associated with 4+ ACEs, followed by regular smoking. For comparison with the US study, "heavy" consumption of alcohol (consuming more than 6 drinks, once or more per week) comes out 4th; the risk of this increases from 7.5% in the sample for respondents reporting 0 ACEs to 30% for those with 4 or more. Bellis et al. do not give odds ratios in their analysis of outcomes, although they are liberally used elsewhere in their report. A rough translation of the increases in risk they report into odds ratio is possible though. For alcohol consumption, the odds ratio comes out at around 5, a much higher figure than that reported by Wade et al., yielding a Cohen's d of approximately 0.9 (large effect). In general, the effect sizes are much higher than those of the US study, with the majority falling into the intermediate or large effect categories. Neither of the two papers discusses effect sizes, and we are not able to comment other than to draw attention to such disparities.

In the detail of Bellis et al., some intriguing anomalies appear. For example, whereas there is a greater propensity for obesity in the 4+ group, it appears that this group also exercise more and have roughly half the risk of type II diabetes. No effects of ACEs are found for educational outcomes, although respondents are more likely to describe themselves as unemployed (or long-term sick). Bellis et al. also report that "having 4+ ACEs was strongly associated with higher deprivation". Nonetheless, they go to considerable lengths to discount the importance of this link. Their concluding discussion opens as follows "Independent of relationships with deprivation, increasing ACE counts are strongly related to adverse outcomes through the life course" (p. 88), reiterating this point on the following page "Although ACEs are more likely to occur in poorer communities, independent of deprivation, ACE counts correlate with worse ... outcomes over the life course". Such statements can be misleading; they imply deprivation to be unimportant. Far from it: they only mean that making a statistical correction for deprivation (based on an assumed, and implausible, linear model) does not cancel out the effect of early adversity.

The validity of the ACE framework is assumed to lie in its specification of risk to children, but as Finkelhor (2017) notes, the indicators were contingent to the original study. There has been no rigorous scientific review to establish ACEs as the strongest predictors of poor life outcomes and little acknowledgement that mediating factors are crucial in explaining the established correlational associations. We know that there is a strong correlation between events labelled ACEs and the experience of family poverty. For example, roughly half of all children in lone parent households

in the UK live in poverty, around twice as many as in couple families (DWP 2017). Relationship breakdown is both a cause and effect of disadvantage and hardship, with mothers and children at most risk of falling into persistent poverty (Stock et al., 2014). A similar association is evident with regard to mental illness, in that low-income groups and their families are considerably more likely to suffer poor mental health, while parents suffering mental health difficulties are at much greater risk of experiencing economic hardship (Boardman et al 2015). Likewise, the link between deprivation and child abuse / neglect is major and corroborated right across the developed world (Bywaters 2015) as is the association between domestic violence and poverty (Fahmy 2016)

We conclude this technical interlude with two final points on commonalities between the two exhibits above. First, there is the rhetorical effect of quantitative evidence that we noted earlier; the tables of statistics provide the lustre of science, but even the statistically informed reader must work hard to make an informed judgment and is left with unanswered technical questions. Second, neither paper seriously takes account of the limitations of retrospective studies compared with prospective ones; in particular, the operation of attributional biases, working either to mitigate or to exculpate failings and adversities in people's lives, by blaming others or circumstances. Such biases are well established features of human behaviour, attested by a plethora of research in social psychology; failing to take such biases into account is a serious weakness of the ACE research paradigm. With such a degree of contestability in the ACE framework, why is it so popular and why is policy so silent on addressing self-evident environmental adversities?

BODIES, BRAINS AND THE OUTSIDE WORKS: INCONVENIENT MATERIALITIES

We have noted that it is reasonable to propose that children experiencing high numbers of ACEs are those most likely to be managing the effects of hardship. This is an assumption made by most ACE advocates. Yet, the irrefutable and long recognised relationship between child poverty poor health, lower educational attainment and reduced life expectancy is concealed by alleged ACE pathways. More significantly, as we have noted, ACE driven concerns to protect children largely promote behaviour change solutions. 'ACE awareness' relies on early identification, family intervention, resilience building and other therapeutic style approaches, despite their often weak and contradictory evidence base (Wastell and White, 2017)). In contrast, the benefits of providing material support to poor families are clear and well established, underlining the primary influence of poverty on later life chances. The positive effects of providing cash handouts to struggling families across the developing world is among the best evidenced of all anti-poverty strategies, with studies (many of them RCTs) demonstrating transformative effects on health, nutrition, school attendance and cognitive development (Hagen-Zanker et al 2016).

The absence of poverty in the ACE framework does not stem from a neutral scientific calculation, nor accidental omission. Rather it is decentred by design. Poverty is separated out from other childhood adversities and reframed as a symptom of a damaged brain and body. For example, Public Health Wales claim that children experiencing ACEs are 'ultimately less likely to be a productive member of society' (Public Health Wales 2015), while Public Health Scotland conclude that ACEs have

a clear role in explaining inequality (Couper and Mackie 2016). From this perspective, poverty is viewed merely as a symptom of dysfunctional development. Thus, the solution is perceived to lie not in raising household incomes but in breaking intergenerational 'cycles of deprivation'. According to the ACE model problems reside in the quality of the individual rather than the lack of resources available to them. Regardless of all the authoritative-sounding references to neuro-biological pathways this remains a value-laden position.

This strand of reasoning has a long and dubious pedigree, stretching back at least as far as the 19th century (Gillies et al., 2017; Wastell and White, 2017). The strategic detachment of deprivation from socio-economic and structural conditions and the emphasis on 'intergenerational transmission' of inferior culture and/or biology has featured in various guises over the years. But as Gordon (2011) pointed out in evidence to the Social Mobility & Child Poverty Policy Review:

Despite almost 150 years of scientific investigation, often by extremely partisan investigators, not a single study has ever found any large group of people/households with any behaviours that could be ascribed to a culture or genetics of poverty.

The ACE agenda provides yet another persuasive-sounding explanation. It promises finally and authoritatively to locate the seeds of dysfunction in the brains and bodies of poor children. Far from pioneering new ground, contemporary efforts to optimise biological development in children tread familiar ground. In the early 20th century the Eugenics Society were similarly concerned to reposition disadvantage as a public health issue and were likewise fixated on 'problem families' and their biological consequences (Lambert 2016). While attention may have shifted from genetic to social inheritance, a eugenic logic of predicting and preventing abnormality and weakness remains. And just as in the past, the desired ends are presented as benevolent and self-evidently progressive, justifying increasingly authoritarian means. Some ACE proponents are already calling for legally enforceable 'parental competence evaluations' (Willems 2012). We ask, where might this logically end?

Driving the ACE movement fervour is the spectre of long lasting physical and mental damage inflicted in childhood by careless or already damaged parents. 'The first years last forever', state the ACE advocates but this is by no means an established fact (inter alia, Bruer. 1999; Wastell and White, 2017). The adversities listed in the ACE framework are remarkably commonly experienced in the general population. In the original US ACE study two-thirds of the (relatively privileged) participants experienced at least one ACE, while in the UK the figure is estimated at 50% (Bellis 2017). Yet the vast majority appear to have overcome their adversities to live fulfilling lives (ONS 2018). As Rutter et al.'s (2010) research on resilience ascertained, human development is naturally adaptive to stress given the right conditions. Masten (2015) has described this as 'ordinary magic'; the everyday processing that equips children to manage the setbacks and challenges that are integral to human life. If we were as fragile as the ACE proponents claim it is hard to imagine how humanity could ever have survived its own traumatic history.

CONCLUSION

There are undoubtedly some hopeful and helpful aspects to the ACE narratives. They may, for example, invoke 'buffers' to toxicity in the form of relationships with adults, they invite an appropriate interest in social history and experience in clinical work. However, in their popularised form which differs markedly from primary epidemiological work, they have pathologizing potential as well. They may be used to bolster arguments for family support, but they also have net-widening potential, where up to half the population may be pulled into the 'suboptimal', toxic childhood category. People are encouraged to work out their ACE scores to inform themselves of the risks of developing a range of nasty sequelae from diabetes to criminality. We have argued here that marking out a population of predominantly poor families as biologically damaged and damaging is inherently stigmatising. We do not yet know what impact it will have for adults to identify themselves by their ACE score or for children to be categorised in this way. There is little reason to think that seeing oneself as determined by past experiences is at all helpful in finding a way out of current difficulties. The trajectory of misery, dysfunction, illness and death predicted for ACE afflicted children (see Blackburn and Darwin Council <https://www.blackburn.gov.uk/Pages/aces.aspx>) is potentially alarming and demoralising for families. It may also compound any low expectations that might already exist among health and education professionals.

Given the chronic lack of services and family support in the UK it is unclear what purpose ACE awareness serves. While concerns are often voiced using the gender-neutral terminology of 'parenting', interventions are predominantly directed at mothers as primary attachment figures for the child. ACE advocates stress the importance of stable, nurturing relationships, claiming that through these 'ACEs can be prevented, even in difficult circumstances' (Blackburn with Darwen Council, *op cit.*). In effect, this positions mothers as buffers, absorbing and neutralising adversities, regardless of the environmental conditions they are forced to endure.

Despite the professed concern for children their voices are noticeably absent from the ACE agenda. Children experiencing difficulties are rarely asked what would help them and neither are their parents. Instead they are monitored for 'markers of risk', measured, diagnosed and subjected to interventions. There is a clear danger of further demoralising already struggling sections of the population. Such a view of people as bodies and brains to be managed and treated rather than citizens who should be represented and engaged, further excludes often marginalised people from democratic decision-making. There are some transparently 'dark logics' (Bonnell et al., 2014: 98) emerging from the ACE agenda to which the academic, policy and practice communities need to attend.

What to conclude about ACEs? We must agree with the following adjudication, quoted in the opening paragraph of Wade et al. (2017: 1) "the (US) Institute of Medicine did not recognize ACEs for inclusion in electronic health records, citing the lack of a brief, reliable, and valid measure to assess childhood adversity".

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