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Kaleidoscope

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Mindfulness. We've debated how much is hype on a recent Kaleidoscope Live webinar,[1] so our eyes naturally turned to a very large trial[2] of school-based mindfulness training (SBMT) to prevent adolescent mental ill health. Eighty-four UK secondary schools ($N = 8376$ students aged 11–13 years) that provided standard social–emotional learning were recruited and randomised in a clustered 1:1 fashion to continue 'treatment as usual' (TAU) or implement SBMT. Schools were stratified by size, quality, type, socioeconomic deprivation levels and geographical region. Depression risk, social/emotional functioning and student well-being were assessed at baseline, pre- and post-intervention, and at a 1 year follow-up point. The authors explored hypothesised moderators of implementation and impact, with SBMT comprising ten lessons of psychoeducation and mindfulness practices. The SBMT group had worse outcomes than the TAU group, both post-intervention and at the 1 year follow-up point, and the greater the SBMT 'dose' and greater underlying risk of mental illness, the worse this was. The authors correctly point out that not only does the model seem not to work, it risks causing harm. This work is part of a series of recent publications as part of the My Resilience in Adolescence (MYRIAD) trial, and some of the data do support positive aspects of mindfulness in reducing teacher burnout in the short-term. Naturally, one must be circumspect in generalising this to other populations and contexts, but it adds to the growing body of literature demonstrating that mindfulness must not be seen as a panacea for all mental suffering, and in some circumstances may actually prove harmful. The focus on interventions in adolescence, and on depression, which has the largest health impact across the lifespan, is appropriate; the challenge undoubtedly remains how we tailor interventions to the people most likely to benefit. Unfortunately, for those of us working in healthcare, societal aspects of deprivation and inequality are still some of the biggest determinants of mental health.

-Oming. Ever since the word 'genome' came on the scene, it has become fashionable to add '-ome' to any large-scale cataloguing process. Some have been accepted with little fanfare, like proteome and connectome, but an ambitious large-scale interdisciplinary project presents the intriguing human 'affectome' for consideration. Although affective neuroscience has made great strides in linking brain processes with emotional experiences, the study of our private subjective feelings has been plagued with inconsistency in terminology, measurement approaches and our own understanding of affective occurrences. In 2015, Neuroqualia, a non-profit organisation, launched the Human Affectome Project with the goal of generating an integrated and complete model encompassing an agreed taxonomy of constructs tied to the neurobiological underpinnings and processes supporting our reported emotional experiences. The first order of business was to generate consensus in the language and meaning used when discussing affect. A search of more than 4.5 million English books resulted in over 11 000 'sense' words, which collapsed into 3664 when valence and overlap were taken into account. A task force of 107 scientists worked toward agreed assignment of each word to categories pulled from the literature. The final categories that emerged reliably were: physiological; self; social; actions/prospects; attention; hedonics; attraction/repulsion; anger; and general well-being. Next, an international team of 173 researchers encompassing basic and clinical scientists was broken into 12 groups and tasked with creating a comprehensive review of the literature across the nine identified categories. Each group described and synthesised their topic across neuroscience and affective research fields via wide ranging methodologies. In addition, they discussed the 'feeling words' assigned to the categories, in the hope that this would further inform understanding, and highlighted known interactions or relationships between their area and any other within the project. Each of these papers has been published in *Neuroscience & Biobehavioral Reviews* over the past 3 years and set the stage for a special edition issue focused on the affectome.[3]

Recently, the final culmination of this work has been released as a preprint[4] and aims to be no less than a common ground from which all areas of affective inquiry can launch. This capstone synthesis sets out updated definitions of key terms, with an emphasis on the features of valence, motivation and arousal, creating a widened scope of understanding that crosses disciplines. An integrated theoretical model of affective phenomena is proposed that emphasises the role of allostasis. Within this model, valence, motivation and arousal are found with each affective state and inform us about any allostatic concerns. Ranging from the immediate and concrete to the distal and abstract, these allostatic concerns range from our physiological needs all the way to global concepts such as well-being and differ wildly in the amount of effort required to regain balance. By centring the needs of an organism, affective states can be conceptualised by these three key features and how such states create an implied action to alleviate a need. These concerns can be dissected across levels and characteristics in a way that makes room for theoretical arguments from many perspectives. Only time will tell whether the model can serve as a bridge and main language across the many different camps of affective research as hoped, but the comprehensive, interdisciplinary and collaborative approach certainly make it one to watch.

Early life adversity and psychosis are strongly correlated, but there are fewer data on subclinical psychoses. Toutountzidis et al[5] report on a systematic review and meta-analysis of associations with psychometrically defined schizotypal traits in non-clinical samples (25 studies, 15 252 participants). Schizotypy can be seen along a psychosis spectrum, with stable trait characteristics that may fall within healthy and pathological ranges; those in the former potentially confer some advantages to the individual. As is the case with psychosis more generally, a range of interplaying gene and environmental factors are considered to be important in the development of schizotypy. In this work, the first to estimate the pooled effect size for various traumas, all forms of early life abuse (emotional, physical and sexual) and neglect had significant associations with schizotypal traits; that of childhood emotional abuse was considerably greater than all others. Regression analyses showed that physical abuse had a stronger association in samples with women, and that sexual abuse had more impact in younger groups. Overall, a dose–response relationship was seen, with the caveat that this was greatest for emotional abuse, with an odds ratio of about 3.5.

When is sharing not sharing? Charles Babbage said that 'Errors using inadequate data are much less than those using no data at all'. He also knew about data reuse: in the 1820s, Babbage, the putative inventor of the digital computer, purchased tables of actuarial data from George Barrett and used them to publish *Comparative View of the Various Institutions for the Assurance of Lives*. He also recognised that calculations leading to – and the transcribing of – tabulated data were prone to error. Around 150 years later, we're starting to see value in making our data available for others to inspect and reuse. Journals and funders have tried to provide a

mechanism for data sharing by insisting on data availability statements (DASs), where the authors of a paper include a statement declaring how interested parties can obtain the data from which the reported results are derived. Gabelica et al[6] attempted to test the robustness of this by extracting 3416 articles (all with DASs) from 282 journals for 1 month in 2019. They identified 1792 papers whose DASs indicated that data were available on request from the paper's authors and emailed the authors, with a prepared non-disclosure agreement in advance, should this be required. Each paper's corresponding author was emailed once and then followed up with a further email if there was no response, and any additional regulatory procedures required were completed. When they could obtain data, they also checked the returned data to see whether it was reusable – that is, whether it had appropriate metadata and data dictionaries that made it 'self-contained' for analyses.

Gabelica et al received no response from the authors of 1461 articles (81%), 77 emails bounced (4%) and only 14% (254) of authors responded in any form. From this undesirable state of affairs, they managed to obtain 122 data-sets (with 132 declining the request to share data), though positively, they concluded that 120 were actually usable (two being unusable because they were sent as PDFs instead of machine-readable tabulated data). For the 132 authors who declined to share (remember, they had a DAS saying they would in principle share data on request), the most common reason was that the authors required more information on why data sharing was being requested, but they then failed to respond to the team when this was followed up. The second most common reason was that informed patient consent did not include sharing of data or that an ethics committee prevented sharing. These results should astound any researcher and remind us of William Denning's oft-cited quote: 'In God we trust, all others must bring data'. For 85% of the literature in this study, as Hozier might have said, take me to church.

Finally, shades of darkness; when dubious data are identified, papers are retracted and that's that. Right? This is clearly important, as otherwise retracted trials risk remaining influential, being included in guidelines or meta-analyses, and generally skewing the evidence base even after their failings have been called out. Avenell et al[7] caution that it might not be that simple. First, there can be significant delays from initial expressions of concern to actually getting a paper pulled; second, during this time, such work may still be cited. They explored the influence of 27 retracted trials that remained cited by 88 guidelines or systematic reviews, finding that over half of the 88 pieces were liable to have their findings changed (substantially altered in 87% of these cases) by removal of the retracted work. Those citing the articles were then randomised so that they received up to three emails alerting about the retractions, had just the corresponding author or up to two co-authors included, and did or did not have the journal editor copied into correspondence. One year later, Avenell et al assessed for any relevant corrective action. Only about half of those contacted had replied to their contact; including co-authors increased this likelihood, but copying in the journal editor did not. Interestingly, the proposed likelihood of the removal of the retraction altering the authors' original findings had no impact on whether or not they answered the correspondence. Perhaps most tellingly, a year after contact, only nine publications had published any notification regarding a work originally containing a retracted piece. Avenell et al warn that simply alerting people to the inclusion of retracted pieces (something that of itself is unlikely to occur without enthusiastic folk like them in the first place) is not going to produce needed change, and that there needs to be a more fundamental shift in terms of integrated bibliographic and referencing systems to automate this, alerting authors that a potential work has current expressions of concern surrounding it.

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