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COUNTING ZEBRAS

Sleep is essential to all animals with a nervous system, and yet some politicians have considered it a badge of honour that they did not need to indulge in such a trivial activity. The core cellular function of sleep is unknown. Researchers looked at zebra fish across time taking images of chromosomal markers in single cells (Figure). Sleep increased chromosome dynamics in individual neurones that are necessary to reduce the amount of DNA double-strand breaks. During wakefulness, chromosome dynamics are low and the number of these double-strand breaks accumulates. These results establish chromosome dynamics as a potential marker to define single sleeping cells and propose that the restorative function of sleep is nuclear maintenance.

MEG-CELLENT

Electroencephalogram (EEG) is older than your grandad and yet the gold standard for seizure localisation before epilepsy surgery. Step forward magnetoencephalography (MEG)! Using simultaneous intracerebral and MEG recordings in patients with focal epilepsy, researchers showed a direct contribution of amygdala and hippocampal activity to surface MEG recordings; 14 patients undergoing stereotaxic EEG were studied. Specifically, they used independent component analysis to disentangle activity arising from large neocortical networks from that of deeper structures, whose amplitude at the surface was small but significant. This could open the door for less invasive monitoring techniques.

Nat Commun 2019;10(1):971.

PUBLISH AND PERISH

Self-help books promise ‘The top secrets of highly successful people’—so here is one from the world of

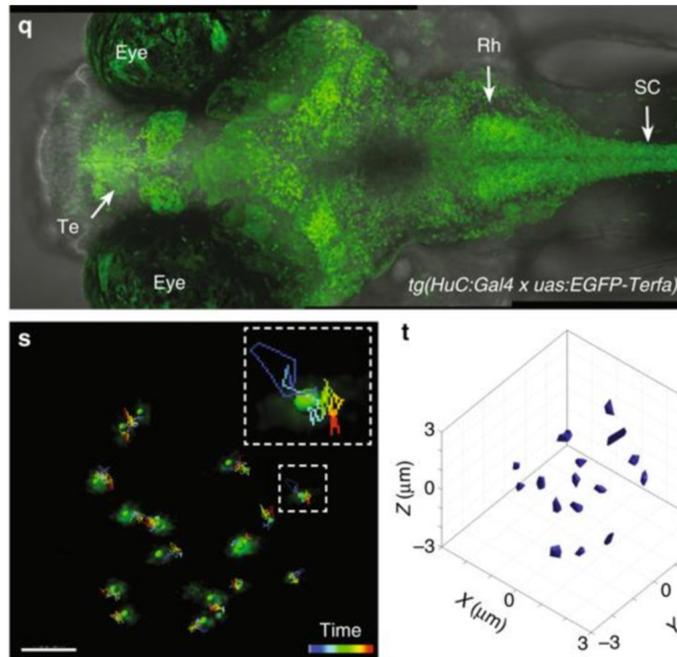


Figure 1 Imaging single chromosome dynamics in live larvae: (q) Dorsal views of larvae (Te, telencephalon; Rh, rhombencephalon; SC, spinal cord); (s) live time-lapse imaging of a single neurone nucleus shows the movement of chromosomes measured over 9.5 min. *Nat Commun* 2019;10(1):895.

academic publishing. *Most UK scientists who publish extremely highly-cited papers do not secure funding from major public and charity funders.* Of the 223 UK-based individuals who had papers cited more than 1000 times, only 59 (36%) currently hold an active grant from one of the National Institute for Health Research, the Medical Research Council or the Wellcome Trust. This is in contrast to board members of these three funders—where 457 of 664 (69%) held an active grant from these charities over this time (despite only 1.1% of these board members being first or last authors on extremely highly cited papers).

PLoS One 2019;14(2):e0211460.

AND NOW WE ARE DSM-6

Literature can provide novel ways of communicating familiar problems

and so it is to AA Milne’s ‘Winnie-the-Pooh’ that Canadian researchers turned to when considering the multi-axial diagnoses within DSM-IV. Consider someone with Axis 1: Dysthymic disorder, Axis III: traumatic amputation of the tail and Axis IV: housing problems—and yes, that is Eeyore. The interpretations of Milne’s stories do vary (such as a 6-year-old boy with a gun hangs out with a bear who wears no trousers) but the authors conclude that these are in fact tales of ‘seriously troubled individuals’. Neurodevelopmental and psychosocial problems go unrecognised and untreated everywhere, including in children’s literature.

CMAJ 2000;163(12):1557–1559.

Provenance and peer

review Commissioned; internally peer reviewed.