

The authors are planning to extend their work on increasing the human life span, using animal models.

Kang, H. T., Park, J. T., Choi, K., et al (2017) Chemical screening identifies ATM as a target for alleviating senescence. *Nature Chemical Biology*. <https://doi.org/10.1038/nchembio.2342>.

Sour grapes?

Choosing is easy when we clearly prefer one option over another, but what if both options appeal? The latter creates cognitive dissonance, psychological tension and a mental discomfort, which drives people to readjust their preferences or values in order to restore 'mental balance'. A study investigated this process by means of electro-encephalography, using a rest and free-choice paradigm. They found that choices which evoke stronger cognitive dissonance triggered a larger negative fronto-central evoked response, similar to error-related negativity. The amplitude of the evoked response was correlated with the re-evaluation of the alternatives. They also found a link between individual neural dynamics (long-range temporal correlations – LRTC) of the fronto-central cortices during rest and the follow-up neural and behavioural effects of cognitive dissonance. Those with stronger resting state LRTC showed larger evoked brain responses, associated with stronger cognitive dissonance and greater post-decisional re-evaluation of the alternatives.

The authors conclude, 'Contrary to traditional decision theory, our preferences are modulated by the mere act of choosing. Difficult choices generate psychological (cognitive) dissonance, which is reduced by the post-decisional de-valuation of the unchosen options'. Not quite the same, but some similarity with Aesop's myth of 'sour grapes'?

Colosio, M., Shestakova, A., Nikulin, V. V., et al (2017) Neural mechanisms of cognitive dissonance (revised): an EEG study. *Journal of Neuroscience*. <https://doi.org/10.1523/JNEUROSCI.3209-16.2017>.

Breaking down the barrier between body and mind

A recently published paper claims to have got us closer to solving the mysteries regarding the tight connection between physical and mental health. The authors identify a neural system which represents sensations from within the body, called interoception, analogous to the large-scale intrinsic brain systems for exteroceptive senses (sight, hearing, touch, etc.) and they claim to have demonstrated its relation to regulating peripheral body systems.

They analysed anatomical data that trace the connections between brain regions to verify the existence of the circuitry and evaluated nearly 700 human brain scans to assess how the regions regulating the body relate to each other. They identified two networks, which loop through various brain regions and overlap with each other and are responsible for regulating the body and generating feelings.

They validated their results by measuring skin conductance and asking about the level of arousal in people when shown evocative pictures. Those with stronger connections between the two networks experienced more subjective arousal when their physiological arousal was higher.

The researchers claim that these findings provide important insights into the brain's functional architecture and unify mental and physical states, removing the artificial boundary between body and mind.

Kleckner, I. R., Zhang, J., Touroutoglou, A., et al (2017) Evidence for a large-scale brain system supporting allostasis and interoception in humans. *Nature Human Behavior*. <https://doi.org/10.1038/s41562-017-0069>.

Expressive writing healing body and mind

Psychologists are familiar with the healing effects of expressive writing on mental wounds but did you know it has therapeutic value in physical wounds too?

Researchers in Auckland report that people who wrote emotionally about previous stressful events prior to having a skin biopsy healed faster than those who wrote about factual events. They recruited 122 participants aged 18–55 years and randomly allocated them to one of four groups: expressive writing pre-biopsy; expressive writing post-biopsy; control writing pre-biopsy; and control writing post-biopsy. The expressive writing groups were asked to write about their 'deepest thoughts and feelings about a traumatic, upsetting experience of your entire life'. The control groups were asked to write factually about their daily activities. A 4mm punch biopsy was performed by a dermatologist in the participants' inner upper arm. After 10 days, 52% of those who had written expressively before the biopsy were healed compared with 27% of those who wrote expressively after the biopsy. Only 15% of the controls who wrote factually before the biopsy and 23% of those who wrote factually after it were healed.

The authors are planning to examine the effects of expressive writing on chronic wound healing.

Robinson, H., Jarrett, P., Vedhara, K., et al (2017) The effects of expressive writing before or after punch biopsy on wound healing. *Brain, Behaviour and Immunity*. <https://doi.org/10.1016/j.bbi.2016.11.025>.

Does inflammation have a role to play in schizophrenia?

Inflammatory processes have been targeted for some time as possible markers of some mental disorders. A meta-analysis of 18 studies found that patients with schizophrenia had moderately increased blood levels of C-reactive protein (CRP). They found a regional and age influence, with patients from Asia or Africa and those younger than 30 being more likely to have higher blood CRP levels.

Further studies are needed to examine the possible relevance of these findings.

Wang, Z., Li, P., Chi, D., et al (2017) Association between C-reactive protein and risk of schizophrenia: an updated meta-analysis. *Oncotarget*. <https://doi.org/10.18632/oncotarget.17995>.