

Doing homework

The beneficial effect of homework on pupils' subsequent academic grades has been shown before. It's somewhat surprising, therefore, how little research has looked at how teenagers feel about homework, where they do it and who they do it with. Hayal Zackar and her team have made a start.

The researchers asked 331 school pupils (aged 11 to 18) in the USA to wear for one week a special watch that beeped eight times a day at random intervals. When the watch went off, the teenagers had to fill out a brief form indicating what they were doing, who they were with and how they felt. This process, known as the experience sampling method, captured a total of 1315 homework episodes in various places.

The results suggested a developmental trend in the way teens view their homework. Middle school pupils (average age 13 years) reported similar levels of concentration regardless of where they did their homework – be that at home, in class, at school (not in class) – whilst overall they enjoyed doing homework more away from home. High school pupils (average age 16) showed a different pattern, experiencing more interest and enjoyment of homework when at home.

Another distinction arose for company. Middle schoolers preferred doing their homework with their peers whereas high schoolers experienced higher concentration and enjoyment when doing homework alone. One caveat to this finding related to parents – older pupils were happier with their parents being involved than were the younger pupils.

There were also some gender differences. Generally, girls found homework at home, alone, more stressful than boys, but found homework less stressful than boys when with their friends. There was

also one specific 'age by gender' interaction, with high school girls not liking doing homework alone (whereas the general trend with age was for high-schoolers to prefer working alone).

The study has several limitations and should be seen as a preliminary effort. For example, the sample were mainly middle and upper-middle class. Also, although this is a newly published study, the data were actually collected 10 years ago. The explosion in internet tools and distractions could well have changed how teens do their homework, although the researchers say there's no evidence that pupils are doing less homework today than they were before.

'It is important for educators, parents, and others who work with adolescents to know about probable variations in adolescents' experience of homework so that they can better plan for and help adolescents to structure their homework,' the researchers concluded. 'Given the importance of fostering a homework habit for academic success in high school and beyond, it is necessary to understand adolescents' perspectives about this important activity.'



How anger can make us more rational

In the January issue of *Cognition and Emotion*

Imagine you're in a room with four people, one is lip-snartling angry, the others are calm. Could the angry individual actually be the more rational decision maker? A new study suggests so, because they'll be less prone to the confirmation bias – our tendency to seek out information that supports our existing views.

Maia Young and her colleagues had 97 undergrads take part in what they thought were two separate experiments. The first involved them either recalling and writing about a time they'd been exceptionally angry (this was designed to make them angry), or a time they'd been sad, or about mundane events.

Next, all the participants read an introduction to the debate about whether hands-free kits make speaking on a mobile phone while driving any safer. All participants had been chosen because pre-study they believed that they do. They were then presented with one-sentence summaries of eight articles, either for or against the hands-free idea. The participants had to choose five of these articles to read in full.

Which participants tended to choose to read more articles critical of hands-free kits and therefore contrary to their own position? It was those who'd earlier been made to feel angry. What's more, when the participants' attitudes were re-tested at the study end, it was the angry participants who'd shifted more from their original position on the debate.

These findings were supported in a follow-up during the 2008 presidential election. Once again, participants provoked into feeling angry tended to choose to read articles that ran counter to their original position (be that favouring Obama or McCain). Another detail was that this effect of anger was entirely explained by what the researchers called a 'moving against' tendency, measured by participants' agreement, after the anger induction, with statements like 'I wanted to assault something or someone'.

Young and her team said their results are an example of anger leading to a cognitive pattern characterised by less bias. 'Although the hypothesis disconfirming behaviour that anger produces may well be an aggressive act, meant to move or fight against the opposition's opinion,' they said, 'its result is to provide those who feel angry with better information.'

The researchers conceded that it's unrealistic to make people angry as a way to improve their decision making. However, they said that in a work meeting, if someone is angry, they might be the one best placed to play the role of devil's advocate. 'By encouraging angry group members to select information necessary for group discussion,' the researchers explained, 'the group as a whole may get the benefit of being exposed to diverse views and, as a result, achieve a more balanced perspective.'



In the March issue of the *Journal of Applied Developmental Psychology*



That which does not kill us...

In the March issue of *Psychology and Health*

Psychologists investigating the well-being of patients with an acquired brain injury (ABI) have documented a curious phenomenon, whereby the more serious a person's brain injury, the higher their self-reported life-satisfaction.

With the help of the charity Headway UK, Janelle Jones and her colleagues recruited 630 people (aged 9 to 81) with an acquired brain injury. Most had sustained their injuries from road accidents, with other causes including stroke and falls. Based on the time they'd spent in a coma, the majority of the participants' injuries were judged to be moderate to severe.

Participants answered a brief, 20-item questionnaire about their sense of identity, their social support, relationship changes since their injury, and their life-satisfaction. Having a strong sense of identity, seeing oneself as a survivor, having plenty of social support and improved relationships were all independently related to higher life satisfaction. These different factors also influenced each other. 'It is likely that personal identity and social network support factors operate in a cyclical way,' the researchers said, 'whereby becoming personally stronger from effectively relying on social support also makes individuals more likely to continue to seek out social support and, in that way, to develop social capital.'

Perhaps the most curious finding was that participants who'd sustained more serious injuries tended to report being

more satisfied with their lives. This association was mediated by the social and identity factors – that is, participants who'd sustained a more serious injury also tended to identify more strongly as a survivor, and to have more social support and improved relationships.

Perhaps the more seriously injured participants might not have complete insight into their lives? The authors doubt this is the case, in part because of the logic of the results, with identity and social support mediating the higher life-satisfaction among these participants.

'Sustaining a head injury does not always lead to a deterioration in one's quality of life,' the researchers concluded. 'Data from this study serves to tell a coherent story about the way in which the quality of life of those who experience ABIs can be enhanced by the personal and social "identity work" that these injuries require them to perform. ...Nietzsche, then, was correct to observe that that which does not kill us can make us stronger.'



Body clock

In the March issue of *Biological Psychology*

No one really knows how or where in the brain our sense of time is enacted. One suggestion is that the pulses of an 'internal pacemaker' are based on bodily feedback, and in particular the heart-beat. Consistent with this is a recent brain-imaging study that showed activity in the insular (a brain region associated with representing internal bodily states) rose linearly as people paid attention to time intervals. Now a behavioural study by Karin Meissner and Marc Wittmann has built on these findings by showing that people who are more sensitive to their own heart-beat are also better at judging time intervals.

Participants listened to auditory tones of either 8, 14, or 20 seconds duration. After each one, they heard a second tone and had to press a button when they thought its duration matched the first. Counting was forbidden during the task and a secondary, number-based memory task helped enforce this rule. Heart-beat perception accuracy was measured

separately and simply involved participants counting their own heart-beats over periods of 25, 35, 45 and 60 seconds.

Participants who were more in tune with their heart-beats also tended to perform better at the time estimation task. A further detail is that physiological measures taken during the encoding part of the task showed that as time went on, the participants' heart-rate slowed progressively, and their skin conductance (i.e. amount of sweat on the skin) reduced. Moreover, the rate of change in a participant's heart-rate (but not skin conductance) was linked with the accuracy of their subsequent time estimates.

'Processing of interoceptive signals [i.e. of internal bodily states] in the brain might contribute to our sense of time,' Meissner and Wittmann concluded. The new findings build on past research showing that drug-induced speeding or slowing of the autonomic nervous system (including heart-rate) affects people's estimation of time intervals.



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