You're driving me mad

Anger on the road is different from other forms. **ANDREW J. EDMONDS**

WHILE 'road rage' attracts sensational media interest, its actual nature and prevalence remains unclear. There is one view that holds that the anger expressed during these road incidents is different from that experienced in other everyday situations. Brian Parkinson from Oxford University has explored this view by examining the effect of factors such as the possibility for effective communication, the physical context of the situation and individual differences on responses to anger-provoking incidents.

A sample of 113 undergraduates and older non-students completed various personality and behaviour measures, and noted how angry different road situations made them feel. They also assessed how well a series of statements described their driving (e.g. 'driving a car gives me a sense of power'). Analyses were based on two incidents in which respondents had become angry: one, the most recent they had experienced while driving; the other, where they became angry but were not driving.

Parkinson found that anger while driving was more frequent than anger in non-driving situations. People who were ambivalent about expressing their emotions were more likely to report aggressive tendencies while driving, perhaps because the costs of doing so would be less than doing so face-to-face. Those who expressed 'empathetic concern' (i.e. concern for others) also reported this increase in aggression, feeling that a bad driver put others at risk.

Contrary to that found in non-driving situations, the object of participants' anger on the road was always a stranger and was held responsible for the incident more often than the object of anger in non-driving situations. Participants also reported a greater degree of communication difficulty, probably attributable to the distance between road users.

Parkinson, B. (2001). Anger on and off the road. *British Journal of Psychology, 92*, 507–526.

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A seasoned performance

How education affects pay, and how perception of pay fairness affects job satisfaction. **FIONA LYDDY**

FOR most employees, take-home pay is the key outcome of going to work and an important contributor to job satisfaction. Patterns in actual pay suggest that earning potential is related to education, but the factors influencing the extent to which education pays off are complex. A recent study by Erik Plug of the University of Amsterdam takes an econometric approach to estimating the financial returns of education and suggests that schooling and earnings are affected by season of birth.

The operation of cut-off dates for school entry gives some children a relative age advantage within their peer group, enhancing their learning ability and school performance. Data were taken from a Dutch labour-market survey on school duration, labour-market status and earnings, with a sample of 1818 observations selected for analysis. Season of birth was argued to influence schooling, owing to maturity differences hinging on the cut-off date of 1 October. In this context, children born in autumn months were more likely to attain higher levels of education and a university degree. There was a corresponding effect for earnings: higher earners were born in the later months of the year. Social background variables such as father's job and education also had significant effects on schooling attainment.

Actual pay aside, the perceived fairness of one's pay influences job satisfaction. But pay elicits different psychological, physical and behavioural reactions depending on an individual's financial need, according to a recent study. Jason Shaw of the University of Kentucky and Nina Gupta of the University of Arkansas selected data from a larger-scale study on working conditions across several American organisations. Interviews were conducted with 375 employees, with 272 revisited two years later.

Supervisory evaluations and personnel records were also collected. The predictor variables were perceived pay fairness and financial need. Physical and psychological well-being was measured using ratings of life satisfaction, depression and somatic complaints. The work-related behaviours of interest were job search intent, job performance, absenteeism and turnover. Age, gender, education, actual pay and tenure were controlled, as were global job satisfaction and the perception of availability of other jobs.

Those born in autumn are more likely to succeed in life

The results showed that the relationship between pay perception and well-being is exacerbated by financial need. Employees with high financial need who feel their pay is unfair were more likely to experience life dissatisfaction, depression, and somatic complaints. They also had poorer job performance than those with lower financial need and showed less intent to look for a job elsewhere. However, strong longitudinal effects were not found, suggesting that pay attitudes are rather fluid in nature.

Plug, E.J.S. (2001). Season of birth, schooling and earnings. *Journal of Economic Psychology, 22*, 641–660.

Shaw, J.D. & Gupta, N. (2001). Pay fairness and employee outcomes: Exacerbation and attenuation effects of financial need. *Journal of Occupational and Organizational Psychology, 74*, 299–320.

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It's about time

Your internal clock functions differently according to age and circadian rhythms. **ANDREW J. EDMONDS**

IN recent years, time estimation judgements have become an increasingly popular method of assessing age-related differences in cognition. A common task in this area is the temporal bisection task, where participants learn that one duration (e.g. three seconds) of a particular stimulus (such as a light or a tone) is 'short', while a duration of six seconds is 'long'. At test, participants are presented with a series of stimuli, varying in length from three through to six seconds and are asked to indicate whether each stimulus is closer to being 'short' or 'long'. Cindy Lustig and Warren Meck from Duke University, North Carolina, used this task to investigate age-related changes in attention and time perception as a function of circadian arousal.

Seventy participants (34 with a mean age of 20 years; 36 with a mean age of 69 years) were tested either before 9am or after 4pm. Each age group was tested at both of these times. Each stimulus was either in a single modality (for participants in the visual stimulus condition, a black square was shown; for those in the auditory stimulus condition, a tone was heard), or a compound of both (varying in durations and onset latencies). Participants then completed Horne and Ostberg's (1976) Morningness-Eveningness Questionnaire (MEQ) as a measure of circadian arousal. Older adults' mean MEQ score gave a classification of 'moderately morning', while that of young adults gave one of 'moderately evening'.

The results showed that sounds were judged to be longer than visual stimuli of the same duration, suggesting that the modality in which an event is perceived affects the functioning of the internal clock. This difference was also affected by circadian cycle, with smaller differences (and greater sensitivity to time overall) observed in the afternoon for both age groups. Older adults were also less sensitive to time in divided attention tasks (when compound stimuli were shown). Taken together, these findings suggest that 'age differences in controlled attention can (also) affect the functioning of the internal clock'.

Finally, older participants tested in the morning concentrated their attention on single visual trials, while largely ignoring the others. These findings suggest that time perception is affected by attentional resources – age-related differences in physical and cognitive functioning, independent of circadian cycle, may force older adults to selectively determine the allocation of those available.

Lustig, C. & Meck, W.H. (2001). Paying attention to time as one gets older. *Psychological Science, 12*, 478–484.

Reference

Horne, J. & Ostberg, O. (1976). A questionnaire to determine morningness and eveningness in human circadian rhythms. *International Journal of Chronobiology, 4,* 97–110.

Rank, shame and anger in psychopaths

Primary and secondary psychopaths differ in how they respond to threats to their social rank. **JANE L. IRELAND**

TWO distinct types of psychopaths have been described – 'primary' and 'secondary'. Although both are characterised by hostile and impulsive aggressive tendencies, there are differences between them. Two British psychologists, David Morrison and Paul Gilbert focus on these differences in a study exploring the role of social rank, shame and anger in psychopathy.

Drawing on social rank theory, they suggest that there are a number of processes involved in psychopathic aggression: both types of psychopath are sensitive to threats to their social standing, have weak inhibitions towards aggression and present as impulsive and hostile. Both appear to have difficulty in coping with feelings of shame.

Morrison and Gilbert hypothesise that primary psychopaths assume that they are dominant and perceive themselves to have a higher social rank than their peers. Secondary psychopaths, however, are uncertain of their social rank and feel subordinate to others. Neither type responds well to conflict – both are likely to perceive this as a threat to their rank. In a study of 50 male mentally disordered offenders with the legal classification of 'psychopathic disorder', Morrison and Gilbert found support for their hypotheses, with primary psychopaths perceiving themselves to have significantly higher social rank in comparison to secondary psychopaths. Primary psychopaths also reported lower levels of anger and shame than secondary psychopaths.

The authors conclude that the primary psychopath is adept at controlling what others see of them, creating an image of dominance with an undercurrent of hostility. In this way, subordinate reactions from peers are the norm, and attacks are limited. Once threatened, however, they respond angrily and counterattack. Secondary psychopaths are less adept at projecting such an image – they struggle against feelings of low rank and are prone to feelings of shame, resentment and anger.

The main drawback with the study is that 'psychopaths' were classified using a legal definition and a questionnaire designed to measure antisocial personality, as opposed to more accepted measures of psychopathic traits such as the Psychopathy Checklist Revised (PCL-R). This is a limitation recognised by the researchers. Their results, however, remain of interest, primarily because they are discussed in the context of evolutionary theory, a perspective often neglected yet one that seems to add to a further understanding of psychopathy.

Morrison, D. & Gilbert, P. (2001). Social rank, shame and anger in primary and secondary psychopaths. *Journal of Forensic Psychiatry, 12*, 330–356.

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On the 'ring' road

It may be 'good to talk', but will you be able to concentrate? **ANDREW J. EDMONDS**

A NUMBER of studies have shown that the manipulation of mobile phones (e.g. dialling a number, answering a call) has negative effects on driving. In a series of recent experiments David Stayer and William Johnston from the University of Utah also investigated the effects of the conversation itself on driving performance.

In their study 68 participants performed a pursuit tracking task, during which they were required to keep a computer screen cursor as close as possible to a moving target. At intervals of 10 to 20 seconds the target flashed either red or green; if it flashed red, they were required to press a 'brake' button as quickly as possible. Participants were familiarised with the task and performed the task by itself, each for seven minutes. Then, either holding a phone conversation with a confederate (using a hand-held or a hands-free phone) or listening to the radio or to a passage of a book on tape (in the knowledge that they would be questioned about the content of the book), they performed the task for 15 minutes.

The probability of missing simulated traffic signals when engaged in a phone conversation was more than double that observed in either control group, while these participants also took significantly longer to respond than when they completed the task by itself. Control participants showed no decrement in the dual-task condition on either measure of performance. Finally, there were no significant differences between the two types of mobile phone used (hand-held and hands-free), suggesting that the deficits in tracking performance are not simply due to holding the phone while conversing.

In a second experiment a further 24 participants performed a similar tracking task. Participants performed the task by itself and in two different dual-task conditions; they either repeated words that the experimenter read to them, or they generated a new word from the last letter of each word read by the experimenter.

Only the word-generation dual-task condition produced significant increases in tracking error from the single-task control condition, suggesting that mobile phone use primarily affects driving performance by diverting attention to the conversation itself, not because the phone requires holding or because speaking and listening is required. These findings question legislation that distinguishes between hand-held and hands-free devices, as the latter 'are not likely to reduce interference from the phone conversation'.

Stayer, D.L. & Johnston, W.A. (2001). Driven to distraction: Dual-task studies of simulated driving and conversing on a cellular telephone. *Psychological Science, 12*, 462–466.

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