

***Pleasure (Cognition and Emotion Special Edition)***

Edited by JA Russell (2003). Published by Psychology Press Ltd, 27 Church Road, Hove, East Sussex BN3 2FA, UK; <http://www.psypress.com>. 360 pp. Hardback (ISBN 1 84169 936 5). Price £49.95.

Cognition and Emotion is a valuable journal for anyone interested in the processes of emotion, which, although predominantly concerned with human research, frequently contains articles relevant to our understanding of the mechanisms of affect in humans and animals alike. It was therefore particularly interesting to find an issue devoted exclusively to research and theory in the domain of 'pleasure'. Despite being presumed by many to have considerable functional importance (eg as a motivator of behaviour, factor in decision making, etc), pleasure in its many guises has been neglected almost as much in human psychology as it has in animal welfare research. The principal aim of this issue appears to have been to tie together current psychological thinking on the concept of pleasure, perhaps to construct some kind of framework around which its structures and processes might be explored. But, as Russell himself admits, the assortment of papers presented in fact contributes more to illustrating just how complex and multifaceted a phenomenon pleasure is, and how many different theoretical and experimental approaches can be applied to it.

The issue of the diverse and differentiated nature of pleasurable affective states is taken up by Dubé and LeBel in their paper on the structure of lay people's views of pleasure and pleasurable events. They argue that while people view the many pleasures they experience as different both in their antecedents and their felt characteristics, all pleasures can nevertheless be regarded as comprising a common state of positive affective experience. Pleasure, from whatever source (eg listening to music, eating good food, relaxing in front of a warm fire), they propose, is a hierarchical construct, rooted in the simple, biological, physical pleasures common to both human and non-human animals.

Thoughts on the possible evolutionary history of pleasure arose in a number of the contributions, particularly those by Johnson, in his chapter on the origins and function of pleasure, and by Carver, with his proposal that pleasure acts as 'a sign that one can attend to something else'. Numerous lines of evidence point to the existence of two core affective or emotive systems: one that determines approach behaviours, and one that determines withdrawal or avoidance behaviours. Carver's argument is that feedback systems monitor the effectiveness of approach/avoidance actions over time: while negative feelings indicate that this is not going well, feelings with a positive valence (pleasure) mean that you are doing better than you need to. Pleasurable emotions may therefore be a sign that you can coast a little, opening yourself up to new experiences to attend to, making yourself available for new opportunities. Negative emotions, on the other hand, close attentional space down, focusing all the organism's resources on rectifying the problem at hand. Carver freely admits that these are unlikely to be the only

functions of positive and negative affects. For example, they may be more relevant to free-floating mood states than to stimuli-specific emotions. But the ideas do, nevertheless, have some appeal.

Johnson's functional approach is a broader one, concentrating particularly on conscious emotion. He points out that while the private, conscious perceptual experiences one has may be ultimately arbitrary (eg my red might look like your green, but this doesn't matter so long as we both agree that blood is red and grass is green), conscious emotional experiences are not. Bad things feel bad; good things feel good. He therefore argues for an 'evolutionary functionalism' view of consciousness, in which felt experiences, felt affective experiences in this case, exist because they are adaptive in their own right. Different species may have different affective reactions to the same stimulus (eg we may feel differently about dung than does a dung beetle), but the reinforcement function (positive or negative) of felt affect is critical for both.

From the point of view of animal welfare, the issue of whether or not consciously felt emotional states can be reliably measured is a critical one. Two of the papers in this special issue are pertinent to this. Ruiz-Belda followed up on some well-known studies that have investigated the relationship between the occurrence of happy events and people's facial expressions of happiness in the form of smiles. Groups of people watching a football match on the TV, and other people playing a game of ten pin bowling, were asked to note down on a score sheet whenever they felt a particular emotion such as happiness or sadness. Not surprisingly, bowlers often reported happiness when they successfully knocked down pins, and football spectators reported happiness when their team scored a goal. But video footage of subjects' reactions to these occurrences demonstrated that they rarely expressed smiles at the moment the happy event occurred; instead, they 'saved' their smiles until they had turned to face their fellow players or spectators. In human research, genuine smiles are often taken as honest, reliable signals of the occurrence of a happy emotion. But these and other studies show that this is not entirely true. Although 'real' smiles require the presence of a positive affective state to be effected (fake or social smiles are unable to activate all the appropriate facial musculature), their expression does not appear to have a one to one correspondence with felt happiness. Outwith a social context, the communication function of smiling is removed, and as a consequence a smile is considerably less likely to occur. This seems to offer an important lesson for all emotion measurement techniques. Many of the facets of emotion may have their own discrete functions. We cannot assume that the presence or absence of one facet is necessarily indicative of the presence or absence of the emotion as a whole.

This line of thinking has been taken a step further by Berridge and Winkielman, who propose that consciously felt affect itself is a facet of emotion that does not necessarily occur when other facets (behavioural, expressive, physiological) do. This is particularly relevant to the study of animal

emotion because their thesis opens up the possibility that many non-human animals may never consciously experience emotional states, despite behaving in emotionally appropriate ways. Their experimental work, however, was on humans. By showing very brief, subliminal presentations of smiling or angry faces, they found that they could affect 'liking' (as measured, for example, by the amount of a novel fruit drink that was consumed), without changing reported, consciously felt emotional states. This is a striking finding, and one that requires replication and further investigation before any firm conclusions can be drawn. But Berridge and Winkelman's paper was certainly intriguing, and one that stood out from all the others in this issue in its adventurousness and theoretical depth. In conclusion, there are some gems in 'Pleasure', but this is also quite an assortment of papers, many of which have little or no relevance to a broader readership, particularly those interested in animal emotion.

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### **Precision Livestock Farming**

Edited by S Cox (2003). Published by Wageningen Academic Publishers, PO Box 220, NL-6700 AE, Wageningen, The Netherlands; <http://www.WageningenAcademic.com>. 184 pp. Paperback (ISBN 9076998221). Price €40.00; US\$53.00.

This book is the proceedings of a small International Conference on Precision Livestock Farming and contains 26 short papers. Precision livestock farming — otherwise known as integrated management systems for livestock — is a new technology that has yet to deliver on its promise, which is both simple and appealing. Its proponents argue that livestock production is a process (just like any other 'industrial' process and really a set of main processes and sub-processes) that can be treated using the principles of process engineering. Thus, inputs, such as feed and the environment, are 'processed' by the farm animal into outputs. These include valuable outputs such as milk, eggs, meat and fibre, and unwanted, valueless outputs, eg excreta and gaseous pollutants. The relationships between inputs and outputs can be explained in terms of mechanistic and empirical models: the derivation of the models via experiments also produces useful scientific understanding. If the outputs are monitored in real-time and targets are set, then the inputs can be adjusted — also in real time — to ensure that the process is on track. Controlled growth of broiler chickens along a prescribed trajectory via daily automatic monitoring of bird weight and manipulation of the quantity and protein content of the ration is the best example of precision livestock farming and is used commercially.

Now bioengineers and other technologically minded folk will clearly relish this topic but is this book of any interest to mainstream readers of *Animal Welfare*? Put another way, can precision livestock farming offer any realistic prospect of improving the welfare of livestock, or laboratory animals for

that matter since the same principles apply? No to the first question and yes to the second; but this book does not provide convincing evidence that will sway the technophobe. Only two of the papers actually address precision livestock farming in a principled way, and these are by the most active European researchers (Daniel Berckmans from Leuven and Andy Frost from Silsoe). Most of the others deal with sensing systems, which are an essential component of the technology, but in limited detail. The major criticism of this book is that the quality of the research is patchy. Furthermore, it is primarily concerned with issues of livestock production not welfare. Even those papers that do include welfare in their research aim only provide cursory justification for the physiological and behavioural responses that were monitored. If only the bioengineers would join forces with competent animal scientists, then useful research could be done. This would then avoid the over-simplistic criticism that here is a tool looking for some work whereas the converse is true. Welfare scientists, just like other animal scientists, need monitoring systems, models of causal relationships and means to effect improvements, and the bioengineers could undoubtedly help with their new technology.

Dear reader, if you believe that precision livestock farming can help improve animal welfare, then you'll be disappointed by this book. The technology is in its embryonic stage. Much needs to be done if its promise is to be realised — and the bioengineers need your involvement.

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### **From Guinea Pig to Computer Mouse: Alternative Methods for a Progressive, Humane Education, 2nd Edition**

N Jukes and M Chiuia (2003). Published by the International Network for Humane Education (InterNICHE), 19 Brookhouse Avenue, Leicester LE2 0JE, UK; <http://www.interniche.org>. 520 pp. Paperback (ISBN 1 904422 00 4). Price £8.00.

This revised and greatly expanded edition, in 520 pages of well-organised and interesting text on teaching alternatives for education, provides a single printed resource from which teachers can now identify and acquire alternatives for teaching the biological sciences without the harmful use of animals. The authors' central goal is to replace the harmful use of animals in education. The book presents arguments and resources for ending the consumptive use of animals in teaching. Written by Nick Jukes and Mihnea Chiuia, the book is produced by the International Network for Humane Education (InterNICHE), an organisation founded in the United Kingdom in the late 1980s, originally as EuroNICHE. The organisation's policy on the use of animals and alternatives in education sets the framework for the book and is presented as an appendix in the book. Lists pertaining to a series of recommended policies specify the conditions for ethical sources of animal cadavers and