

CONFERENCE

"Law, Behavior and the Brain"

Squaw Valley, CA
May 20-25, 2004.

Report by Elizabeth Chorvat

Part I

What can lawyers learn from science and what can science tell us with certainty?

This year's conference was opened by **Owen Jones** with *Law and Behavioral Biology: From Brain to Behavior and Back*, coauthored with **Tim Goldsmith**. Prof. Jones focused on the deep structure of legal systems in the context of behavioral ecology, a branch of behavioral biology which focuses on species-typical human behaviors in different environments. Prof. Jones offered the idea of time-shifted rationality, which describes any trait resulting from adaptive behaviors which is maladaptive for the time. According to Prof. Jones, the issue for the law is how to modify these adaptive behaviors.

Lawrence Parsons presented *What Scientists Can Answer*. Dr. Parsons discussed results from his research in cognitive psychology. Dr. Parsons pointed to structural brain studies which indicate that maturation involves *pruning* synapses, from which one might infer a model of efficiency for brain matter. Dr. Parsons discussed our ability to enhance brain function with drugs and neural prostheses and made the point that all of these relate to policy issues, distributional issues, and issues of personhood.

Part I concluded with the *Law/Scientist Panel: Questions We Can Answer*. The panel included **Hugh Gibbons, Howard Fields, Sara Beale, Owen Jones, Bobbi Low** and **Pablo Salvador**.

Part II

"Law and . . ." Reports on Current Research

Benito Arruñada discussed three papers, one related to the utility function in Catholic confession, one related to markets and cognitive biases, and the third related to corporate managers and their educational preparation for dealing with opportunism by subordinates.

Claire Hill presented *Beyond Mistakes: The Next Wave of Behavioral Law and Economics*, in which Prof. Hill questions the characterization of behavioral heuristics as mistakes rather than operative metaphors.

Peter Huang discussed his paper, *Effective Regulations of Affective Investing: Regulating Emotional Investing in Bipolar Securities Markets*. Prof. Huang distinguished

emotional states along the investment timeline, our emotional response to learning, whether institutions foster unemotional investing, and the implications for law if there is emotional investing.

Zack Lynch presented *Neurotechnology and Society: Emerging Neuropolicy Issues*. According to Lynch, current bottlenecks to effective neurotechnology should decrease over time as the cost of analysis lessens and the benefits increase.

With *Why Was the Common Law Efficient*, **Paul Rubin** discussed the scholarship of Hayek and the idea of the common law as more efficient than code law.

J.B. Ruhl presented a summary of his last ten years of research on *Complex Adaptive Systems*. Prof. Ruhl models individual behavior, group behavior, and social system behavior in order to build a prescriptive model for the law and, in turn, the effect of the law on these models.

Part III Fairness and Exchange

Kevin McCabe discussed fairness as a balance of expectations. Shared attention allows for the creation of mutual expectations about a proposition and the formation of a common set of perceptions about one another's intentions. Triadic expectations – an individual's conception of another's idea of the first individual - allow parties to share expectations, allowing moves to become informative. See McCabe, Houser, Ryan, Smith and Trouard, *A Functional Imaging Study of Cooperation in Two-Person Reciprocal Games* (2001) (knowledge of opportunity costs facilitates reciprocation).

Carl Simon discussed complex systems models with the hallmarks of (i) diversity (heterogeneity); (ii) nonlinear dynamics (as contrasted with the strong assumption of linear models); (iii) nonrandom mixing (networks and coalitions); (iv) feedback, learning, and evolution (as contrasted with simple models which do not incorporate learning); and (v) emergence (properties found in systems which would have been difficult if not impossible given current technology to predict ahead of time but which nonetheless emerge empirically).

Part IV Behavioral Biology

Presenting *Demographic Transitions and Women's Lives*, **Bobbi Low** described recent changes in women's fertility, increasing in later years (40-49) and decreasing in younger years.

Angelika-Stellzig Eienhauer discussed the nature of beauty and judgments as to mate choice which persist cross-culturally in *Perceptions and Cues of Attractiveness*.

Dr. Lionel Tiger presented *The Globalization of Success and Failure* in which he sought to discuss the ramifications of religious belief and cognitive function and contrasted his views with those of Richard Dawkins, author of *The Selfish Gene*.

Sara Beale presented her paper on *Primate Economics*, describing her studies of kin-based cooperation in biological markets. Results from Dr. Beale's observational and experimental work imply economic systems among primates in which they assign value to objects, show basic barter skills, and show strong reactions to inequity.

Part V
Law, Behavior, and Evolution

Barnaby Marsh presented *Hope, Fear, Consistency, and Projection*. Because there are potentially many associations for any stimulus, the mind automatically tends to group according to biases, examples of which include anchoring, confirmation bias, framing effects, illusory correlation, sunk-cost effects, and belief polarization.

Morris Hoffman and **Paul Rubin** presented the empirical findings from their paper, *An Econometric Evaluation of Attorney Effectiveness: Public Defenders versus Private Attorneys*. Hoffman and Rubin found that private attorneys were successful more often than public defenders.

Part VI
Neuroscience

Mark Turner presented *Cognitive Neuroscience and Choice*. Human beings are good at developing stories, parsing sensory perception into objects and events. The neurocognitive study of story or blending is called "backward invention of story," which means beginning at the point where you want to arrive.

Howard Fields presented *How Drugs and Sensory Cues Interact to Influence Decisions*. Dr. Fields discussed the legal ramifications of choice behavior related to alcoholism and causality of action. His is a biological view, as contrasted with a moral or ethical view which assumes volition and choice. From a biological viewpoint, anti-social choice behavior related to alcoholism and drug addiction begs treatment for the underlying cause rather than punishment.

Elizabeth Phelps presented *The Human Amygdala and Awareness – The Interaction of Emotion and Cognition*. According to Dr. Phelps, the amygdala modulates perceptual encoding – Dr. Phelps specifically addressed the fear response – and emotional cues enhance perceptual processes, such as our perception of the environment.

Part VII
Developments in Neuroscience

Dr. Lawrence Parsons discussed *New Findings on the Brain Evolution, Nature, and Learning in Music*. Humans have used music to create adaptive advantage. Dr. Parsons conducted PET studies of human singing, studies which revealed distinct areas of neural system activation for dissonant as well as harmonious music.

Michael McGuire discussed *Brain Quirks and Courtroom Testimony* and specifically how event interpretation impacts witness testimony.

Dr. Karen Parker discussed *The Effects of Moderate Early Life Stress on Primate Socioemotional Behavior, Cognition, and the HPA Axis*. Most studies of anxiety disorders have historically assumed that stressful triggers precipitate later stress-induced psychological disorders, such that stress has been assumed to be pathological. Dr. Parker believes that the effects of stress may be dose-dependent, and that low levels of stress may actually be beneficial.

Dr. Kristin Prehn discussed *The Effects of Emotion on the Execution of Normative Judgement Tasks*. Dr. Prehn conducted studies to distinguish cognitive processes with respect to normative judgments, evaluating subject responses by way of skin conductance data, and found that different cognitive resources were involved in judging grammatical transgressions and non-transgressions.

Robert Frank presented *Conflict of Interest as an Objection to Consequentialist Moral Reasoning* and described experiments by Jason Dana et al., the results of which appear to suggest a large framing effect with respect to the choice of a consequentialist (the justification for an action depends only on the actions' consequences) versus a deontological (consequences matter but insists that basic moral principles must govern our evaluations) framework.

Dr. Lawrence Frolik presented *Law and Biology: The Triumph of Reality Over (Economic) Theory*. Dr. Frolick discussed the role of biases involving group dynamics and the *Mers v. Marriott* case concerning employment death benefits in which the 7th Circuit refused to acknowledge the impact of a monetary conflict of interest on the decision-making of a plan administrator.

Michael Heller of the Columbia School of Law presented his latest paper, *Conflicts of Interest in Property Law*. According to Prof. Heller, property law provides a fertile ground for understanding conflicts of interest which, in turn, provides a methodology for understanding property as an institution. Prof. Heller has identified certain patterns which emerge among property institutions that are helpful to explain the evolution of various property rules, ranging along a continuum between purely economic and social interests.

In *A Property Interest*, **Jeffrey Stake** suggested that the distinctions that we find in property law have antecedents in cognitive distinctions with respect to property.

Susan Crawford of the Cardozo School of Law presented the outline of a project she calls *People, Bits, and Atoms* which addresses metainformational depth.

The program ended with a panel discussion on **Law/Science Questions**.