Chater and Oaksford developed both computational- and algorithmic-level analyses of syllogistic reasoning, based on a probabilistic approach. The resulting model was called the probability heuristics model (PHM). This chapter first outlines PHM, then shows how it can account for the existing data, and compares it with alternative theories. Finally, it looks at the empirical results that have emerged since the model’s appearance and addresses some of the arguments that have been levelled against it. An important feature of PHM is that it extends directly to syllogisms involving generalized quantifiers such as most and few. The crucial feature of these syllogisms is that they cannot be explained logically, and hence they fall outside the scope of theories like mental logic and mental models that assume standard logic as their computational-level theory.

Motivation and Judicial Behavior: Expanding the Scope of Inquiry
Lawrence Baum

This chapter analyzes judicial decision making from the perspective of motivation. Students of judicial behavior have focused on judges’ motivations, but their inquiries into motivation could be broader and deeper. The chapter presents four issues on which scholarship in psychology can enhance our understanding of judges’ motivations: the linkage between proximate goals (such as achieving good public
policy) and more fundamental motivations, the energizing dimension of motivation (the level of effort devoted to a task), variation in motivation across judges and situations, and the relationship between motivation and cognition. The chapter concludes by considering the implications of its inquiry into motivation for the key questions in the study of judicial behavior, including the relative importance of legal and policy considerations in judges’ decision making and the extent to which judges behave strategically.

Sewall Wright’s Adaptive Landscape: Philosophical Reflections on Heuristic Value

Robert A. Skipper and Michael R. Dietrich

in The Adaptive Landscape in Evolutionary Biology

Sewall Wright's 1932 adaptive landscape diagram is the most influential visual heuristic in evolutionary biology. Yet, the diagram has met with criticism from biologists and philosophers since its origination. This chapter states that the diagram is a valuable evaluation heuristic for assessing the dynamical behaviour of population genetics models. Although Wright's particular use of it is of dubious value, other biologists have established the diagram's positive heuristic value for evaluating dynamical behaviour. This chapter surveys some of the most influential biological and philosophical work considering the role of the adaptive landscape in evolutionary biology. The chapter builds on a distinction between models, metaphors, and diagrams to make a case for why adaptive landscapes as diagrams have heuristic value for evolutionary biologists.

Introduction and Preview

K. Warner Schaie

in Developmental Influences on Adult Intelligence: The Seattle longitudinal study

This chapter presents an overview of the phenomena of adult cognitive development. It lays out the reasons why intelligence in adulthood should
be studied by giving a brief history of the study of adult intelligence. It points out that intellectual competence attains increasing importance from middle adulthood onwards, when level of intellectual competence may determine job retention. It discusses whether independent living within the community remains possible in later life, and considers maintenance of control over financial decision making. A conceptual model is then given to tackle the developmental influences that have an impact on the life course of cognition. The model provides the rationale for the various influences related to cognitive development. An account is then given of the history and objectives of the Seattle Longitudinal Study.

A model for policy choices
Malcolm W. Klein and Cheryl L. Maxson

in Street Gang Patterns and Policies

This chapter presents a heuristic model, which combines elements of the Spergel Model with the data summaries from Chapters 1, 2, 4, 5, and 6. The model is then expanded to cover both individual and group levels of change. The results are presented two tables with twelve cells each, and the discussion uses these models to elaborate on available and conceivable program approaches. Specific program examples are offered. At the same time, the complexity of a multilevel approach becomes obvious. The chapter, then, is a combination of specific approaches and guidelines to choosing among programs. Gang control is necessarily very complex, so the greater clarity provided in the chapter should be helpful to policy makers anxious to leap into programming.

A neural systems model of decision making in adolescents
Monique Ernst

in Decision Making, Affect, and Learning: Attention and Performance XXIII

This chapter focuses on a heuristic neural systems model of motivated behaviour. This model provides hypotheses for mechanisms underlying changes in behaviour across development and psychopathology. The
fractal triadic model (FTM) posits that goal-directed behaviour results from the interaction among three nodes of behavioural control. These three functional nodes are centred on the amygdala, striatum, and medial prefrontal cortex, which contribute to avoidance, approach, and modulation, respectively. They feed two distinct neural circuits: one that is modulated primarily by appetitive stimuli and serves approach behaviour, and one that is modulated primarily by aversive stimuli and serves avoidance behaviour. The behavioural output results from the integration of the information that is processed by these two neural circuits and is submitted to the control of the supervisory node. Such organization of three functional nodes subserving two neural circuits relies on the well-described structural and functional heterogeneity of these nodes. In addition, asynchrony in the maturation trajectories not only among the nodes, but also among the subunits of these nodes, is the central principle that underlies the typical behavioural changes seen in adolescence. Functional neuroimaging research is beginning to examine ontogenic changes in neural responses to reward-related processes that can further inform this heuristic model. The chapter addresses the major points mentioned above and ends with selected questions proposed as priority for future research.

Discussion and integration of key findings

Lucy Gell, Gerhard Bühringer, Robin Room, Allaman Allamani, Francisco Jose Eiroa-Orosa, Sarah Forberger, John Holmes, Anne Lingford-Hughes, Jane McLeod, Petra Meier, and Martine Stead

in What Determines Harm from Addictive Substances and Behaviours?

Published in print: 2016 Published Online: March 2016
Publisher: Oxford University Press
Item type: chapter

The factors influencing transitions between stages in the development of problem substance use and gambling are diverse and operate across three levels of analysis: the social, economic, and political environment, the individual, and the cellular and molecular. This chapter summarizes and interprets key findings for single determinants and presents a range of multifactorial models that seek to develop a more complex understanding of the relationship between those determinants. The working version of an integrative heuristic model is presented arising from the work of ALICE RAP. The methodological strengths and challenges encountered in this project are also discussed. Finally, the work is situated with the context of the broader ALICE RAP project.
Multiple-Offense Sentencing
Andreas von Hirsch

in Sentencing for Multiple Crimes

This chapter offers some additional thoughts on the subject of multiple-offense sentencing. It discusses John Taurek’s indeterminacy thesis and its plausibility with regards to multiple-count cases. It then considers two desert-based limiting principles applicable to multiple-offense situations: normative breaks and overall proportionality. It also examines the possibility of utilizing a heuristic model, an example of which is Martin Borgeke’s scheme for scaling multiple offenses. Finally, it highlights the limitations of desert theory and argues that it may not be able to assist us all the way in developing a sentencing doctrine for multiple offenders.

Globalization and Path-Dependent Institutional Change
Scott Wilson

in Remade in China: Foreign Investors and Institutional Change in China

This chapter reexamines previous works on institutional change and globalization. It also formulates a heuristic model to clarify the roles of states and multinational corporations (MNCs) in the process of path dependent institutional change. It begins with a brief discussion of the definition of institutions and the domestic and international factors that limit and compel institutional change. Then, it analyzes institutional dynamics at three tiers—macro, meso, and micro levels—with the state mediating the interplay of actors at the three levels. It concludes with a discussion of some of China’s particular features that affect how international and domestic agents influence institutional change. Moreover, it incorporates dynamics at the three levels by examining the state’s role in mediating the interplay of domestic dominant regimes with emerging sub-regimes that are shaped by various international institutions carried and diffused by MNCs, business organizations, and legal and management consultants.
Theoretical preliminaries
Tim Markham

in The Politics of War Reporting: Authority, Authenticity and Morality
Published in print: 2011 Published Online: July 2012
Publisher: Manchester University Press
DOI: 10.7228/
Item type: chapter

This chapter pins down what can defensibly be described as a Bourdieusian heuristic model. It presents the working definitions for some of the core concepts in Bourdieusian theory. This is followed by locating Pierre Bourdieu in the context of a tradition in philosophy and political theory which aims to reconcile structuralism and phenomenology. Bourdieu draws on the phenomenological principles of Alfred Schutz. For Bourdieu, Martin Heidegger's rise to prominence does not amount to a philosophical revolution, but the overthrow of specific philosophical tenets, necessary to effect a generational shift of authority, and masking the enduring supremacy of a particular reading of neo-Kantian philosophy. John Simpson is very much an individual, but one whose individuation proceeded from a generative set of principles held in common by those collectively oriented by class habitus. The sociological construction of habitus is the reconstruction of the logic.

Methodological issues
Tim Markham

in The Politics of War Reporting: Authority, Authenticity and Morality
Published in print: 2011 Published Online: July 2012
Publisher: Manchester University Press
DOI: 10.7228/
Item type: chapter

This chapter discusses the sometimes knotty methodological issues that the Bourdieusian heuristic model throws up. The parameters of Bourdieusian social scientific methodology are also explored. Pierre Bourdieu's interpretation of relationalism and rationalism is not without its critics. Bourdieusian generative structuralism concerns itself with every level of the operation of power. Bourdieu's genetic, microscopic conception of power is significantly insightful in uncovering the operation of coercive power relations in the seemingly quotidian and mundane. Codes and branches of codes could be easily moved around the overall tree, cutting where necessary for clarity, allowing for the development of a framework that is simultaneously systematic and intuitive to use. A similar line of reasoning applied to codings for speech style. Two extracts that show the coding and inference processes are reported.