
INTRODUCTION

Personality and Control

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OVERVIEW

Since 2006 the Biennial Symposia in Personality and Social Psychology have provided an international forum for researchers to come together in a congenial setting in Poland to discuss, in some depth and with wide-ranging implications, specific topics of scientific importance to personality and social psychology. The intellectual stimulation and collegial enthusiasm engendered by these scientific meetings have resulted in the Warsaw Lectures in Personality and Social Psychology, a series of volumes (Cervone, Fajkowska, Eysenck, & Maruszewski, 2013; Eysenck, Fajkowska, & Maruszewski, 2012; Maruszewski, Fajkowska, & Eysenck, 2010) of which this book is the latest. In 2012 a group of researchers met in Kazimierz Dolny to discuss the specific issue of personality and control. The chapters in this volume showcase the scope of the work presented.

This volume is directed at an audience of academic and research psychologists, and their graduate students, with interests in control mechanisms in personality processes. At the outset we need to acknowledge that the challenge we face is not small. This is, indeed, a large topic and touches on so many fields—including clinical psychology, artistic performance, the influence of incentives on self-regulation,

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and even the further reaches of the psychological hinterlands of consciousness. As the vast literature on this topic attests, the issue of control is central to any consideration of self-regulative processes (itself a large field of scientific enquiry), and thus its relevance extends far beyond the confines of personality psychology to general psychology and the distant shores of the human sciences more broadly.

The Biennial Symposia in Personality and Social Psychology are not dissimilar to the better-known Nebraska Symposia on Motivation and have attracted a similarly high-quality international cast of speakers who were invited to contribute to the accompanying publications. Experience over the past ten years provides ample testimony to the value of focused attention on a single aspect of personality and social psychology; this approach especially has merit, since it has the potential to yield fresh insights that may be less forthcoming when researchers are either working alone or with groups who have a mixed range of interests.

Inviting researchers with different theoretical perspectives and research interests to focus on a highly specific topic in an informal setting has much to commend it. Science is very much a team sport and the Warsaw Lectures in Personality and Social Psychology have proved fecund in encouraging and enabling open-mindedness and stimulating scientific cross-fertilization and creativity.

LEVELS OF CONTROL

Numerous aspects of control are examined in this volume, but running through them is the issue of the *level* of control. This is more than a mere delineation of systems; it also entails consideration of conscious awareness and processing, and how these still-mysterious forms of control ever manage to orchestrate behavior. The importance of the issue of different levels of control is attested to by the variety and number of applications and theoretical perspectives (for a review see Carver, 2005). The apparent necessity of assuming different levels of control itself suggests that evolution had to face conflicting demands—namely, how to achieve adaptive “quick and dirty” behavioral responses, especially in reflex-like reactions, as well as “slow and clean” behavioral responses that require deliberate and controlled cognitive processes appropriate to immediate environmental contingencies. Somewhere along this evolutionary path, control processes became instantiated in brain-behavioral systems, individual differences in which give rise to heterogeneity in personality states and traits.

This point is highlighted by Carver, Johnson, and Joormann (2008), who note that in studies from cognitive, personality, social, and developmental psychology, there is a convergence to the conclusion that there exist (at least) two modes of information processing and action regulation, which operate simultaneously and often—and not always in coordination. For depending on concurrent demands,. For example, in the field of economics, the rejection of the neoclassical view of the

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rational economic agent—the elusive and, if such an agent exists, seclusive *homo economicus*—has largely given way, especially in behavioral economics, to the view that different systems of control regulate judgement, decision making, and action (Kahneman, 2012): levels of control *writ large!*

But, as noted by Corr (2010), there remain a number of unresolved theoretical issues that impede the construction of a coherent and viable model of control in personality psychology, as well as the wider psychological sciences. He contends that in order to advance this debate—especially concerning the integration of motivation, emotion, cognition, and conscious experience—several major, and thorny, problems need first to be acknowledged.

As is well known, dual process models of control contain the following features:

- *System 1*. Reflexive: fast, coarse-grained, automatic, ballistic, and preconscious/nonconscious.
- *System 2*. Reflective: slow, fine-grained, deliberative, controlled (explicit/declarative learning), and (as far as we can tell) open to conscious awareness.

The importance of these two systems was highlighted in the introduction to *The Cambridge Handbook of Personality Psychology*, where editors Philip Corr and Gerald Matthews (2009) observed:

A persistent theme has been the multi-layered nature of personality, expressed in individual differences in neural functioning, in cognition and information-processing, and in social relationships. Abnormal personality too is expressed at multiple levels. Despite the inevitable difficulties, a major task for future research is to develop models of personality that integrate these different processes. (pp. xxxviii–xxxix)

Dual process models are found across the spectrum of psychology and include implicit and explicit memory, procedural and declarative learning, top-down (concept) processing versus bottom-up (data) processing, visual processing “action system” (dorsal stream) and “perception system” (ventral stream), clinical neuropsychology (e.g., “blindsight” and “touchsight”), emotions (e.g., the very well-known Zajonc–Lazarus debate), and personality (impulsivity vs. constraint). Specific theories include Epstein’s (1973, 1994) rational-experiential model, Hirsh’s (1974) S–R and cognitive systems, Toates’s (1998) “on-line” and “off-line,” and Carver’s (2005) impulsivity versus constraint (see also Evans, 2003). Ortony, Norman, and Revelle’s (2005) three-system model does an excellent job of summarizing these systems and their implications specifically for personality psychology.

In support of the relevance of these theories, Velmans (1991) reviewed a large experimental literature from which he concluded that all the following processes

are capable of being, and normally are, completed preconsciously: (a) analysis of sensory input; (b) analysis of emotion content and input; (c) phonological and semantic analysis of heard speech; (d) phonological and semantic analysis of one's own spoken words and sentences; (e) learning; (f) formation of memories; and (g) choice and preparation of voluntary acts. Standing somewhat aside from this specific issue is the *lateness* of conscious awareness (Libet, 1985, 2004), which seems to rob it of any causal influence on the immediate processes it represents. This matter is discussed in detail by Corr (2010).

SELF AND SELF-REGULATION

There is also a large literature on the psychology of the self (Robinson & Sedikides, 2009) and conscious awareness of the self, and here too issues of control loom large. Assuming that the self is not merely the hot air of the epiphenomenalist's kettle, self-regulation (e.g., willpower) needs to be taken into theoretical account. Human beings certainly believe and act as if the self is important and has agency, although not always in the precise way it may seem. For example, in relation to the functions of emotion, Baumeister, Vohs, DeWall, and Zhang (2007) contend that the view that emotion has a direct causation on behavior is increasingly untenable. Instead they argue that emotion is part of a feedback system whose influence on behavior is typically indirect. It provides feedback and affords retrospective appraisal of actions such that conscious emotional states facilitate learning and change future behavior. These authors review a large body of empirical evidence to justify their conclusions.

What the arguments of Baumeister et al. (2007) contribute to this literature is to highlight the lateness of higher-order cognitive and emotional processes. As they state:

The assumption that the purpose of full-blown, conscious emotion is to cause behavior directly appears to be widespread and indeed deeply embedded in psychological theorizing. Yet it appears to be far less true than many researchers (ourselves included) have assumed. (p. 194)

However, this issue often seems abstract and, at times, even a distraction from the real business of psychological science—namely, to get on with identifying and describing mechanisms. There is also the long history of philosophy (often imbued with quasi-religious undertones) with which to contend. Nevertheless, all of the above matters are of fundamental importance when considering the true nature of control processes in personality and beyond.

Along with other issues, these are some of the difficult theoretical questions that attend any serious consideration of the psychological nature of control

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processes in personality psychology. As readers will see, all these issues rear their heads in the collection of stimulating and thought-provoking essays that comprise this volume.

WHAT'S AHEAD IN THIS BOOK

The chapters in this volume are presented from the general to the specific and are contained in two sections, “Basic Models of Control” and “Complex Models of Control.” The chapters illustrate how the issue of control in personality psychology can be examined from a variety of theoretical perspectives and practical applications. This range of uses also documents the scientific potential of tackling this central topic from a number of different angles. Regarding these challenges, the authors rose admirably to the task set for them and they did so with aplomb.

Part I: Basic Models of Control

Starting at the highest level of cognitive control—namely, deliberative control and conscious awareness—Philip Corr and Ezequiel Morsella acknowledge the seminal role that the behavioral inhibition system (BIS; Gray, 1982) has played in personality and examine the implications of this theory for the still-mysterious nature of consciousness. Few people doubt its centrality in behavioral control yet there is little knowledge about *why* or *how* it achieves its ends and, as discussed above, there are difficult theoretical issues surrounding its scientific status.

After summarizing Gray's (1995) comparator model of consciousness, which specifies why only certain stimuli attract conscious processing, Corr and Morsella combine this model with ideomotor theory, which complements it (e.g., it explains how the comparator model helps explain the mechanisms underlying the deliberative control of behavior). Of significance, this chapter tries to explain why both the comparator model and ideomotor theory contend that consciousness is perceptual-like: this is because it renders the contents of consciousness communicable and most capable of being detected and processed by multiple brain systems. Specifically, according to Gray's (2004) formulation, conscious contents are broadcast to various systems via a single perception-like code. Representations need to be in a format that is understood by multiple systems, especially systems involved in behavioral control and perceptual-like representations—which may be the appropriate format because most brain systems evolved to be sensitive to such representations.

This chapter concludes with the observation that although intrapsychic conflict would not be considered by the engineer of a von Neumann computer, this solution may have evolved by natural selection as a clever way for the nervous system to resolve the conflict between competing goals that are inevitable in any com-

plex environment. This view goes a long way to explaining where aberration of consciousness attends many clinical conditions (e.g., depression and schizophrenia).

Continuing the theme of high-level cognition, in a theoretical discussion supported by a new interference task and experimental data, Parezad Zarolia, Jessica Tomory, Howard Rosen, and Ezequiel Morsella argue that basic mechanisms of control are related to both conscious processings and the skeletal muscle effector system, and that consideration of the dual role of these different processes may provide an important clue as to why only some contents enter conscious awareness and attract detailed cognitive processing. In particular, they call attention to the need to include “hot” components of everyday significance (e.g., incentives) in standard “cold” interference tasks (e.g., the flanker task). They advance their empirical case in this important literature by the adaptation of existing paradigms to produce a new subtle one, which includes the kinds of incentive-related and emotion-related phenomena that we may expect to influence control processes across a wide span of everyday life applications.

As Zarolia et al. discuss, this new experimental paradigm might be useful for the examination of stronger manipulations (e.g., involving physiological incentives), as well as in clinical patients who are suffering from a variety of addiction and impulse control disorders. They rightly highlight the need for further studies of the nature of the pushes and pulls of incentive interference that affect control and consciousness; these may be especially instructive in relation to the contents that enter conscious awareness and recruit precious cognitive resources.

Returning to the more specific functions of the BIS, Agata Wytykowska, Philip Corr, and Małgorzata Fajkowska discuss the role played by a BIS-related comparator in many areas of psychology as a central process in the self-regulation of behavior. As these authors note, the notion of a comparator has its origins in a cybernetic view of the mind, which serves the vital function of comparing input states with desired reference states. When a mismatch is detected, control processes are initiated to reduce this disparity; this is accompanied by a range of motoric, memoric, emotional, and behavioral outputs.

Wytykowska et al. make the case that, at the cognitive level, the comparator function of the BIS is concerned with the dissimilarity-oriented attentional mode. This elaboration of the usual functions assigned to the BIS contends that conflict resolution processes aimed at reduction of mismatch entail selective attention to error-generating signals and, by this route, the BIS exercises control over information processing sufficient to resolve the mismatch. More specifically, this proposal extends the notion of the BIS as one that biases processing exclusively toward threatening stimuli; it achieves this by proposing that selective attention is directed (more generally) also toward dissimilarity. The authors present a series of experiments to support their elaborated cognitive model of the BIS.

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Part II: Complex Models of Control

Opening this section with a general discussion of the widespread importance of control issues in the human sciences, Shulamith Kreitler highlights the central role that they play in the initiation of an output and its discontinuation, in the rhythm or tempo of execution, and also in processes of inhibition and excitation that accompany the performance of behavior. She notes too that control has a long history in personality psychology and related areas such as mental illness—for example, seen in psychoanalysis in terms of regulating the competing demands of the id, superego, and reality in order to satisfy one's desires with minimal pain and punishment. She also raises the issue that in some respects control may be a limited resource, as suggested by the findings of studies on willpower. Whether there is a limited resource more generally on control is an unanswered question.

Kreitler makes an important observation in relation to rationality of judgment and decision making. The banal fact that *homo sapiens* do not conform to the rational tenets of *homo economicus* is evident to all (see above), at least those not blindly inculcated by neoclassical economics, and it would be a capital mistake to assume—as many models of rationality do—that behavior is regulated fully by deliberate decision making of System 2. Even assuming that people can in principle make deliberate decisions, it does not follow that they always or typically do. Reflecting the importance of dual process models (discussed above), control does not always function on the level of awareness and not necessarily through reasoned decision-making acts. It is quite possible that it often functions outside awareness through automatic-procedural routines or various learned behaviors and strategies.

To further our understanding of control, Kreitler advances a cognitive orientation theory that is a motivational theory of behavior designed to enable understanding, predicting, and changing behavior in different domains. It contains many of the features of standard cognitive models (e.g., the roles played by attitudes and beliefs), eschews allegiance to the notion of rational decision making, and seeks a more psychologically realistic model of control. The features of this cognitive model, and its implications, are laid out in this highly stimulating and informative chapter.

As a specific example of control in the context of a domain of complex performance, Joanna Kantor-Martynuska discusses the literature and its implications as it relates to music making. As this author notes, musical expertise develops with the ability to exercise control over the many processes and functions entailed by the planning, preparation, and execution of practice, as well as monitoring and valuating practice and performance. In particular, control is vital in the ability to resist distraction and inhibit impulsive action, and to undertake and carry out self-initiated activity.

With an adept blending of theory, method, and practice, Kantor-Martynuska illustrates the many control processes inherent in musicianship—which consists of practicing an instrument, mastering a piece of music, and delivering a performance. These are highly demanding of cognitive, emotional, and motivational

resources, not to mention physical endurance. There needs to be fine control of basic motor and cognitive levels of auditory processing and music making, higher levels of control comprising emotional and motivational self-regulation, and meta-cognitive control.

Not only does this chapter provide a performance context to illustrate the integration of many forms and levels of control, its theoretical analysis yields insights that have practical applications. As with music making itself, this chapter offers a powerful blend of theory and practice, presented in a coherent and coordinated fashion.

As one of the leading writers on cognitive psychology and its applications, Michael Eysenck moves the discussion on to the clinical domain, focusing on the cognitive control of anxiety and depression—where problems of control are evident in presenting symptoms. He presents the well-formulated and well-tested model of processing efficiency, which states that anxiety impairs the functioning of the working memory system (which contains three components: an attention-like central executive, a phonological loop, and a visuo-spatial sketchpad for visuo-spatial processing and brief storage). Processing efficiency theory states that anxiety specifically impairs the central executive. In more detail Eysenck outlines the main functions of the central executive: an inhibitory function, which controls the processing of irrelevant stimuli and responses; a shifting function, which controls the switching of attention within and between sets; and an updating function, which is used to update and monitor information currently accessible to working memory.

Once more reflecting the different levels of processing discussed above, Eysenck's attentional theory argues for two attentional systems: one related to goal-directed, top-down processing; and the other to a stimulus-driven system that exerts bottom-up control. In this discussion an important distinction is made in relation to self-regulation. That is, although anxiety impairs processing efficiency, this does not automatically lead to impaired performance effectiveness. Individuals high in anxiety may use additional processing resources to compensate for these deleterious effects on processing efficiency.

Although much less is known about the cognitive processes of depression, Eysenck applies an equally rigorous theoretical perspective to understanding the control problem in this major clinical disorder. But unlike the attentional and future-oriented cognitive failures in anxiety, depression seems more related to problems of interpretation (e.g., attribution) and is past oriented. The importance of cognitive control theory for these clinical conditions is explicated in a way that points to new areas of enquiry and, possibly, application.

Finally, Charles Carver closes the circle of our presentation of control processes in personality psychology by discussing a major issue that underlies all issues of control, starting with a regulatory puzzle in personality psychology—which concerns all aspects of the dimension of reflexive reactivity versus constraint, or impulsive versus deliberative control of action (once more the dual process nature of control rears its head). This chapter begins with a discussion of two accounts of a basis for this dimension of variability in personality psychology.

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Critically, this dimension is related to the neurobiological function of serotonin; more specifically, brain regions that are serotonergically innervated may help moderate the expression in behavior of the outputs of more basic systems for approach and avoidance. Elaborating on the clinical theme of Michael Eysenck, Carver argues that deficits in serotonergic function may be related to a range of social and emotional problems, ranging from antisocial behavior to depression.

Many forms of control reflect the distinction between impulsivity and restraint, and for this reason Carver's chapter is important especially in light of its widespread applications. And this is a well-honed distinction, seen at least since the time of Freud. Various, the debate has centered around delay of gratification, planfulness, socialization, and id versus ego. Once more there might be an evolutionary balance to be had, and talk of "adaptive" and "maladaptive" may be missing more than one important point. As Carver observes, when manifested as spontaneity, impulsiveness brings a sense of vigor and freedom to the human experience—but when misapplied it can bring misery. Impulsivity is not always a bad thing, and when environmental challenges demand a rapid reaction without the leisurely deliberation of high-level thought (e.g., in a defensive situation), it can be highly adaptive and sometimes even life saving.

The linking of dual process models and the neurobiology of impulsivity and restraint with a wide range of social and clinical behaviors highlights the importance that must be attached to the neuropsychology of control—and in all of this personality processes are central.

SUMMARY

The chapters that comprise this volume represent only a small fraction of all possible chapters, yet they serve the useful function of highlighting the importance of control processes in personality psychology and showing how they relate to a wide variety of psychological outcomes. Dual process models in one form or another dominate this debate, and it is important to remember here that discussion of the formal (descriptive) bases of these systems should not exclude consideration of the experiential aspects that dominate human life. Of overriding significance is the existence of consciousness, aberrations in which are seen in clinical disorder (Gray, 2003).

The psychology of control is distinctive in a number of respects: it demands an integrated view of cognition and behavior, as does personality psychology itself; it shows the complex orchestration of the processes that regulate the competing demands with which people must negotiate; and it highlights the role of personality differences in these control processes that lead to the production of the variety of normal and abnormal behaviors that dominate the study of psychology.

The psychology of control processes raises some daunting challenges, as does the whole field of personality psychology, but it also points in the direction of fer-

tile scientific ground where the further fruits of knowledge may be harvested by the judicious application of theory, method, and scientific passion of the type promoted by the Warsaw Lectures in Personality and Social Psychology.

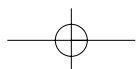
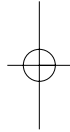
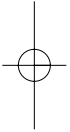
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PART I

BASIC MODELS OF CONTROL

