Why People Do the Things They Do

Nicola Baumann
Miguel Kazén
Markus Quirin
Sander L. Koole
(Editors)

Building on Julius Kuhl's Contributions to the Psychology of Motivation and Volition

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Markus Quirin, PhD, currently holds a fellowship at Stanford University (2016). He received his PhD in psychology from the Osnabrück University, Germany. Quirin's research focuses on self-regulation, affect, and personality as well as neural mechanisms of these phenomena and their effects on health, and he has (co-) authored more than 40 peer-reviewed research articles that have been published in high-ranking journals. Quirin and collegues have published the first standardized measure for the assessment of implicit affect, the so-called Implicit Positive and Negative Affect Test (IPANAT), which has been well-received internationally and has been translated into more than 10 languages. He has also pioneered a number of fields of research such as the neuroscience of emotion regulation abilities, attachment, and social motives as well as co-founded the new scientific subdiscipline of existential neuroscience.

Sander L. Koole, PhD, is director of the Amsterdam Emotion Regulation Lab at the VU University Amsterdam. He has held research fellowships at the University of British Columbia (2003) and Stanford University (2009–2010). Koole's research addresses the question how people manage their feelings and emotions. His work is anchored in experimental psychology, while being informed by psychophysiology and neuroscience. His work has received numerous academic prizes and awards, including a Consolidator Grant from the European Research Council that was awarded to Koole in 2011, as one of the leading scholars of his generation. Koole has (co-) authored more than 100 international scientific journal articles and book chapters, and edited three scholarly books. Together with Klaus Rothermund, he is currently serving as Editor-in-Chief at *Cognition and Emotion,* a scientific journal devoted to the study of emotion, especially those aspects of emotion related to cognitive processes.

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Preface

The How and Why of Human Action

Why do people do the things they do? Sooner or later, everyone interested in human nature is bound to pose this question. Yet, in contemporary psychology, the question has almost become a provocation. As psychologists become more and more refined in unraveling *how* human behavior unfolds, broader questions about the *why* of human behavior have a tendency of receding into the background. As a result, an integrated understanding of human nature seems farther away than ever, though, paradoxically, human behavior is being more subjected to scrutiny and analysis than ever before in recorded history.

Going against the general Zeitgeist of specialization and fragmentation, this book unabashedly raises and addresses the question of why people do the things they do. The general message of this book, if there is one, is that the why question about human behavior is nothing to be ashamed about. Indeed, pitting the why against the how creates a false contradiction: Studying why people do the things they do in no way precludes researchers from rigorously studying how people are doing them. Indeed, the chapters in this book show again and again how the psychological principles whereby people can self-direct their own behavior (the whys) are highly revealing about the underlying mechanisms of human behavior (the hows).

Historically, there have been two major traditions within psychology that focus on the purposive aspects of human behavior. The first tradition is the *psychology of motivation,* where researchers have studied how needs, goals, and motives lead people to choose a course of action that promises to deliver them the greatest expected value (Elliot, 2008; Heckhausen & Heckhausen, 2010; Ryan, 2012; Schultheiss & Brunstein, 2010; Shah & Gardner, 2007). The second tradition is the *psychology of volition*, where researchers have studied how people, once they committed to a course of action, may convert their goals and intentions into action (Carver & Scheier, 1998; Forgas & Harmon-Jones, 2014; Haggard & Eitam, 2015; Heckhausen & Heckhausen, 2010; Vohs & Baumeister, 2016). Together, motivation and volition determine why people do the things they do. Motivation and volition are therefore the main characters that figure in this book, most of the time explicitly, but sometimes more implicitly, under the veil of different labels and nomenclature.

Aside from the dynamic duo of motivation and volition, three overarching themes guided the making of this book. The first overarching theme is that human behavior is complex, indeed, too great to be contained by the conscious mind. People's minds are often preoccupied with the goals that they have set for themselves. However, people's behavior is also guided by more implicit wishes and desires, which operate in the background. Many chapters in this book address how these implicit motives influence people's actions and wellbeing (see Chapters 3, 4, and 5). People tend to work under the tacit assumption that achieving their goals will make them happy, but this is far from always the case. In fact, disengaging from one's goals may often be a healthier strategy than doggedly holding on to these goals (see Chapters 6, 7, 8, and 9). In a similar vein, people often

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assume that, when they relax the tight grip of self-control and follow their desires, they will fall prey to forbidden urges and give in to unhealthy impulses. However, people's first impulse may be to remain passive (Chapter 10). In this case, self-control is needed to initiate rather than restrain action. People's actions are not driven by a single motive or need, like the need to reduce cognitive dissonance (see Chapters 11 and 12). Indeed, it may well be the other way around, in that reducing cognitive dissonance serves to facilitate people's actions. If we as scientists truly want to understand human behavior, we need to embrace these kinds of complexities.

The second overarching theme of this book is that, although the basic elements of human nature are universal, people differ in how these elements play themselves out. Therefore, personality matters. Some people are characterized by strong achievement motives, whereas others are driven by power or affiliation motives. Some people easily disengage from their goals, other get stuck for years while they are trying to do so. As long as psychologists ignore the fundamental nature of these and other personality differences, a complete understanding of human nature seems out of reach. The study of human motivation and volition is therefore closely intertwined with personality science (see Chapters 13, 14, 15, 16, and 17).

The third and last overarching theme of this book is the old Lewinian adage that "There is nothing as practical as a good theory." Motivation and volition relate to issues that real people grapple with in facing the challenges of their daily lives: How can I motivate students, patients, employees, and athletes? What helps people to achieve their goals, improve their well-being, and grow as a person? Integrative theorizing about motivation and volition therefore forms a rich soil for practical insights that are used in coaching, training, psychotherapy, and education (see Chapters 18, 19, 20, 21, 22, 23, and 24). This book thus testifies to the synergy that is realized through the scientific and applied value of integrative approaches to motivation and volition.

The book is organized into five parts. Part I deals with historical perspectives on the study of motivation and volition. The heart of this book, Parts II, III, and IV, deal with basic theoretical issues involving motivation, volition, and personality. Finally, Part V is about applications of motivation and volition psychology.

Part I. Historical Perspectives

This book is dedicated to the scholarly work of Julius Kuhl. In Chapter 1, Sander L. Koole and Nicola Baumann begin with a brief account of the academic career of Julius Kuhl, while tracing important historical developments in psychology: the focus on motivation in the 1970s, the shift towards volitional processes initiated by Kuhl in the 1980s, and the integration of motivation and volition in Kuhl's personality systems interactions (PSI) theory in the late 1990s. In Chapter 2, Miguel Kazén and Markus Quirin show how motivation and volition are integrated in PSI theory. The theory distinguishes between seven levels of personality (each of which has been the focus of influential theories of personality), four mental systems, and the modulation of their interaction through affect. Finally, Kazén and Quirin illustrate the potential of PSI theory to conceptualize and integrate different theoretical accounts and to guide applications of psychology in such domains as counseling and education.

Part II. Motivation: What Moves People to Action?

The forces that move people towards action are often – though by no means always or inevitably – awarded the status of personal goals. In Chapter 3, Eric Klinger gives an overview over his goal

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theory of current concerns and its applications over the last 45 years. Current concerns are about personal goals that shape individuals' sense of meaning in life. Klinger and colleagues have developed treatment methods for substance abuse and other clinical and correctional problems that focus on the individuals' configuration of current concerns. In Chapter 4, Jutta Heckhausen addresses the question why people choose certain life goals over others from a developmental lifespan perspective and integrates it with the motivational perspective adopted by her father, Heinz Heckhausen. Jutta Heckhausen further addresses the role of individual differences in implicit and explicit motives and their interface in developmental regulation.

In Chapter 5, Athanasios Chasiotis and Jan Hofer take a closer look at the implicit prosocial power motive that they systematically assessed across cultures with the Operant Motive Test (Kuhl & Scheffer, 2001). Chasiotis and Hofer call for more cross-cultural and evolutionary developmental studies on implicit motives to understand universal and culture-specific variations in individuals' mental processes and behavior. Most of the research on motivation to date has focused on goal engagement. However, sometimes goals turn out to be infeasible and people have to let go of them. In Chapter 6, Veronika Brandstätter and Marcel Herrmann review the literature on goal disengagement by Eric Klinger, Jutta Heckhausen, and others. Standing on the shoulders of these intellectual forebears, Brandstätter and Herrmann introduce their own process-oriented account of goal disengagement processes. This account centers around the concept of action crisis, the mental state of being caught in the decision between goal disengagement and further goal pursuit.

Part III. Volition: How Do People Regulate Their Action?

Whereas motivation is about the contents of people's goals and motives and *what* moves people to action, volition focuses on their underlying mechanisms and processes, that is, *how* people regulate their action. Explicit intentions, for example, have specific properties that support their maintenance in memory but may also have paradoxical effects that prevent people from enacting the very plans they set out to perform. In Chapter 7, Thomas Goschke and Annette Bolte relate Kuhl's contributions to a dynamic theory of intentions, volition, and action control to recent research on cognitive control in experimental psychology and cognitive neuroscience. Goschke and Bolte review work from their own lab on the adaptive regulation and emotional modulation of cognitive control dilemmas. One of their key themes includes the dynamic properties of uncompleted intentions. In Chapter 8, Reiner Kaschel and Miguel Kazén take a closer look at the question whether memory for uncompleted intentions (prospective memory) declines with age – an unsolved riddle after 25 years of research. The authors solve this riddle by overcoming methodological shortcomings and by extending their theoretical analysis to include individual differences in action versus state orientation and affective factors (e.g., listlessness).

In Chapter 9, Hester A. H. Ruigendijk, Nils B. Jostmann, and Sander L. Koole elaborate a pernicious reason why people may fail to achieve their intentions. Whereas common sense holds that goal achievement falters when people do not adequately keep their intended actions in mind (the goal neglect hypothesis), Ruigendijk, Jostmann, and Koole demonstrate that state-oriented individuals fail to achieve their intentions because they have an overly strong and narrow focus on their intended actions (the over-maintenance hypothesis). State-oriented individuals thus fail to act upon their intentions because their intentions are continually on their mind. In Chapter 10, Chuck Carver differentiates the concept of impulsivity with respect to approach and avoidance. His sophisticated analysis shows that self-control of impulses does not only lead to behavioral restraint but may also move people toward action. Carver further analyzes the interplay between control and impulse in adaptive and problem behaviors and reviews their neurobiological underpinnings.

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Whereas explicit intentions and self-control typically precede action, conscious deliberation may sometimes follow and explain action post-hoc. In Chapter 11, Eddie and Cindy Harmon-Jones discuss their action-based model of cognitive dissonance theory that was partially inspired by, and is consistent with, Kuhl's action control theory. They propose that discrepancy reduction functions to keep the individual action-oriented and primarily functions to facilitate effective action. In Chapter 12, Ana P. Gantman, Peter M. Gollwitzer, and Gabriele Oettingen examine how unconsciously activated behavior can arouse dissonance if it violates personal norms. In this case, people face an explanatory vacuum. The authors investigate the role of perceived agency and control in this explanatory vacuum and relate their findings to the framework of Kuhl's PSI theory.

Part IV. Self and Personality: Are People's Actions Integrated Into the Self?

While theories of motivation and volition often touch upon individual differences, it is clear that personality functioning entails many other aspects, such as drives, habits, affect, coping, and so on. Theories of personality have typically focused on one or two of these aspects, which are joined by Kuhl's PSI theory into a coherent framework. The chapters in this part relate other integrative approaches in personality science to PSI theory and discuss the assessment of various aspects of personality.

In Chapter 13, Daniel Cervone and Markus Quirin relate different theories on personality and its coherence. Cervone has worked within the social-cognitive tradition and Quirin within the framework of PSI theory. Cervone and Quirin's joint work brings unique insights into the nature and value of functional theories of personality and advances our understanding of traits and dispositions, motives, and cross-situational consistency. In Chapter 14, Rich Ryan reflects on the commonalities between Kuhl's theory of personality systems interactions and the self-determination theory that Ryan developed with Ed Deci. Among other things, both theories endorse an organismic perspective, focus on the self-as-process, distinguish between self-regulation and self-control, and integrate multiple levels of scientific analysis.

In Chapter 15, Kennon M. Sheldon draws on his self-concordance theory (derived from SDT) and PSI theory to determine how we can tell when a radical life change is really warranted. In a chapter that is laced with excerpts from a long-running email exchange with Julius Kuhl, Sheldon derives inner markers for "true" self-congruence and discusses theoretical and methodological commonalities and differences between perspectives. In Chapter 16, Nicola Baumann, Miguel Kazén, and Markus Quirin provide an overview over six non-reactive measures of self-access derived from PSI theory: three are based on consistency (motive congruence, self-discrimination, preference stability) and three on latency (self-activation, autonoetic access, preference sensitivity). Their review of conditions, personality correlates, and outcomes indicates that self-access constitutes a vital resource in personality functioning. In Chapter 17, David Scheffer and Björn Manke take the non-reactive measurement one step further. Their Visual Questionnaire (ViQ) adopts a purely visual approach to measure six implicit personality systems derived from PSI theory. It is a quick (5 min., see https://www.key4talent.com/PSI), entertaining, almost non-verbal, and cross-culturally valid instrument that advances scientific understanding of the workings of implicit personality systems in a wide range of contexts.

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Part V. Applications

The chapters in this last part of this book apply theory and findings on motivation and volition in the contexts of work, sports, education, and therapy. In Chapter 18, James M. Diefendorff, Erin M. Richard, Peter V. Dinh, and Chelsea LeNoble focus on theory and research pertaining to action and state orientation in the domain of work. In contrast to traditional trait approaches, Diefendorff and colleagues adopt a process-based, within-person perspective that considers the work-related antecedents, mechanisms, and outcomes of action-control at the event-level of analysis. In Chapter 19, Peter Gröpel and Jürgen Beckmann apply PSI theory in sports psychology to situations of excelling versus choking under pressure. Their review shows how skilled motor performance is supported by unconscious behavior control. The disruptive effects of explicit monitoring and pressure can be counteracted with self-relaxation competencies (action orientation) and targeted techniques to activate the right hemisphere (such as squeezing a ball in the left hand).

In Chapter 20, Claudia Solzbacher and Christina Schwer apply personality systems interactions (PSI) theory to educational sciences. These authors suggest that educators need to strengthen their own self-competencies in order to develop an authentic professional stance, which in turn enables them to promote children's self-competencies in nurseries, kindergartens, and schools. According to PSI theory, self-competencies develop in good relationships. In Chapter 21, Ann-Kathrin Hirschauer, Frank Aufhammer, Regina Bode, Anita Chasiotis, and Thomas Künne offer a social understanding of scholastic performances. In their study, parental empathy had a positive impact on children's self-regulation, learning behavior, and achievement motivation, which in turn led to higher performance at school. This indicates how parents (and teachers) may support children who struggle with academic achievement. In Chapter 22, Kerstin Liesenfeld sheds more light on the supportive role of fathers in the development of emotion-regulatory abilities. Her findings show that the experience of childhood stress (retrospectively rated) is not as relevant for the development of an authentic self in adults as the compensation of childhood stress through adequate support by care givers (here: recollection of father's availability) during stressful times.

In Chapter 23, Gudula Ritz discusses personality-oriented counseling and psychotherapy (POCPT) as a way to improve psychotherapy. POCPT is more of a meta-therapeutic concept than a new form of psychotherapy that pays much attention to the client`s personality. Based on PSI theory and tools, Ritz elaborates on interventions that may be the pivotal points for sustainable change in clients and patients. In Chapter 24, Philipp Alsleben introduces the freedom motive (i.e., the need for self-integration) as a fourth basic motive besides affiliation, achievement, and power. From his rich experience as a therapist, Alsleben explains how one can work with the freedom motive to better understand and support people in therapeutic and counseling contexts and establishes cross-connections to existing approaches and research.

Why do people do the things they do? This book demonstrates that raising and addressing this question is not just worthwhile, but necessary to advance psychology today, both as a science and a practiced discipline. In the spirit of Julius Kuhl, we invite our readers to pursue the how and why of human behavior vigorously and wholeheartedly, while paying tribute to its complexities and its individuality, and embracing the practical insights that this pursuit affords.

Nicola Baumann
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Part I

Historical Perspectives

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Chapter 1
The Romantic Science of Julius Kuhl

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Abstract: This chapter reviews the scholarly career of Julius Kuhl and the academic context in which he developed his work. Kuhl began his doctoral training in the late 1970s under supervision of motivation psychologists Heinz Heckhausen and Herbert Götzl at the University of Bochum, Germany. Subsequently, as a postdoc working with John Atkinson at the University of Michigan, Kuhl conducted computer simulations on the dynamics of motivated action. Returning to Germany in the early 1980s, Kuhl developed a new theory of volitional action control that kick-started the revival of German will psychology. In this context, Kuhl also developed a measure of individual differences in volitional efficiency, or action versus state orientation. In the second half of the 1980s, Kuhl became professor at Osnabrück University, Osnabrück, Germany, where he and his team developed several new experimental paradigms for studying volition. The theoretical integration of this work came about in the late 1990s, when Kuhl articulated personality systems interactions (PSI) theory, a comprehensive theory of human motivation and personality. Throughout his career, Kuhl's work has been characterized by a rigorous search for lawful processes and mechanisms, while maintaining a caring, involved attitude that respects the individuality of the person. This unique profile marks the romantic science of Julius Kuhl.

"Life becomes simple when we accept its complexities" was the motto that Julius Kuhl emblazoned on his magnum opus, the 1,221-page volume *Motivation und Persönlichkeit: Interaktionen psychischer Systeme* [Motivation and personality: Interactions between psychological systems] (2001). Anyone who has had the fortune of meeting and interacting with him will confirm that this is the perfect way to characterize Julius Kuhl and his work. But, of course, there is much more to say about this remarkable scholar than any aphorism, no matter how fitting, can convey. This chapter is written for everyone who is interested in learning more about the background of Kuhl's academic work and the professional context in which he developed his ideas.

To structure our biographical narrative, we have divided Kuhl's career into three periods: The early years, middle years, and later years. We realize that this division is bound to be somewhat arbitrary. Nevertheless, we chose the three periods to roughly correspond with important developments in Kuhl's working life and his thinking. Indeed, during each of these periods, Kuhl moved to a different place and began working with a different research group. In addition, it so happens that each of the three periods is associated with one of Kuhl's most important academic books. So, as a starting point, the three periods seem a useful way of learning about Kuhl's academic life and work.

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The Early Years (1967–1985): Mastering the Traditions

Julius Kuhl was born on July 27, 1947 in Duisburg, a town with around half a million inhabitants in the Ruhr area, a western region of Germany that is home to major chemical, steel and iron industries. His father, Matthias, was a coal miner and his mother, Katharina, was a children's nurse. In 1948, the family moved to Oberhausen, a neighboring city of Duisburg. Julius grew up together with his younger brother Alwis and his younger sister Marlies. During his childhood years, much of the Ruhr area was still in ruins, as one of the most heavily bombed regions during World War II (by some counts, even *the* most bombed urban area). The city was plagued by many problems, including poor sanitary conditions that lead to the spread of infectious diseases. When Julius was 6 years old, he and Alwis were both infected with diphtheria. Julius survived, but the life of his younger brother was taken.

Because both his parents were working full-time, Julius was raised to be independent from an early age. At the age of 4, Julius had to be able to tell the time, so that each day at 8 in the morning, he could walk by himself to Kindergarten, which took about 20 minutes. His mother Katharina had lost her two brothers, Julius and Alwis, during the war. Both brothers had shown signs of extraordinary intellectual giftedness, by attaining perfect scores on their Gymnasium exam, a highly unusual event at the time. Throughout his childhood, Julius had the feeling that his life was somehow meant to make up for or even replace the lost life of his uncle Julius. His mother did not wittingly share this feeling with Julius, but was nevertheless convinced of her son's great academic potential and made an effort to ensure that Julius was able to get a higher education. Julius was therefore sent to a Catholic boarding school for three years (7th–9th grade) where he learned English, Greek, and Latin. Kuhl often felt homesick and was not particularly fond of the boarding school, which was run by monks from the fraternity of Pallotines. Nevertheless, the place made a lasting impression on him, and Julius would keep returning to monastic environments for inspiration, writing, and meetings throughout his life.

In 1967, Kuhl enlisted as a student in psychology at the Ruhr-University of Bochum, one of the five largest German universities. The Ruhr-University had been established only 20 years earlier, some years after the Second World War. This meant that it was very new compared to other German universities, many of which had been established centuries ago. During his studies at Bochum, Kuhl became interested in human motivation. This topic was taught by Professor Heinz Heckhausen (1926–1988) and his team. Heckhausen was an internationally renowned scholar, who trained several successful doctoral students and helped to shape the psychology curriculum in Germany. Heckhausen's (1980) *Motivation und Handeln* [Motivation and action] provided a comprehensive overview of motivation psychology and was a standard textbook at German universities for decades (for English translation, see Heckhausen, 1991; see also Heckhausen & Heckhausen, 2010).

Kuhl started in Heckhausen's lab as a research assistant for Herbert Götzl – a mentor of many renowned psychologists, even though Götzl himself shied away from scientific publishing. The guidance of Götzl was a major source of inspiration for Kuhl. It was Götzl who introduced Kuhl to the Lewinian tradition of theorizing and experimentation, a broad and systematic school of thought. Götzl would lecture for hours about complex theoretical problems, of which Kuhl could only understand bits and pieces. These experiences instilled the young Kuhl the intellectual enjoyment of thinking about seemingly hopeless theoretical problems, which could take many years to be resolved. Götzl's first task for Kuhl (in his first undergraduate year) was for him to study the formal logic of argumentation by the philosopher Carnap. Next, Kuhl was to learn computer programming and to study the work by Newell and Simon (1956), pioneers in computer simulations of human action – the latter received the Nobel Prize in economics in 1978. Götzl prompted Kuhl to use the logic of argumentation in order to test Atkinson and Feather's (1966) assumptions on achievement

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motivation in a computer simulation, as Götzl had said that he felt strongly that there was "something wrong in this theory." Although the final step of this task proved unsolvable for Kuhl as an undergraduate, it paved the way for his subsequent work.

In 1972, Kuhl completed his Master's thesis on the Thematic Apperception Test (TAT), which was published in condensed form in 1978 in the *Archiv für Psychologie,* one of the world's oldest psychology journals (Kuhl, 1978). Although the TAT was the most widely used test for measuring the strength of implicit motives, its measurement properties were highly contested, due to the low reliabilities that the TAT attained on classic psychometric indexes. Using a sophisticated psychometric model that was based on item-response theory, Kuhl showed that the low reliabilities of the TAT were due to limitations of classic psychometric models, which made assumptions about the distributions of test scores that are inapplicable to the TAT. The validity of this theoretical approach was confirmed more than four decades later (Lang, 2014).

After his Master studies, Kuhl took up his dissertation research under the supervision of Heckhausen and Götzl. During this work, Kuhl conducted computer simulations (the first generation of powerful computers had just become available to behavioral scientists) and experimental investigations of achievement motivation. In 1976, Kuhl received his PhD for a dissertation on "Personal and situational determinants of achievement motivation" at Bochum. Kuhl then spent two years as a postdoc (1976–1978) with Professor John Atkinson at the University of Michigan in Ann Arbor, USA. There he continued his work on computer simulations of motivational processes and conducted experimental tests of selected aspects of the dynamics of action (Atkinson & Birch, 1970) that set up his dynamic perspective on motivation and volition.

In 1982, Kuhl received his *venia legendi* – a German academic degree that was required at the time for attaining tenured positions – at the Ruhr University Bochum. This was followed by a year at the renowned Center for Advanced Study in the Behavioral Sciences at Stanford University, USA, where he was one of the youngest researchers and among the first European psychologists to publish in American journals. Back in Germany, Kuhl held a tenured position at the Max Planck Institute for Psychological Research in Munich (1982–1986). It was during this period that Kuhl developed a new theoretical paradigm that would become known as action control theory.

In the early years, Kuhl published a number of theoretical and empirical papers in leading international journals, such as *Psychological Review* and the *Journal of Personality and Social Psychology*. However, Kuhl's most important publication during this period was undoubtedly his 1983 book *Motivation, Konflikt und Handlungskontrolle* [Motivation, conflict, and action control] (see Figure 1.2). An early issue that would become a recurring theme in Kuhl's work was his critique of the

Figure 1.1 Julius Kuhl (center) with John Atkinson (left) and Heinz Heckhausen (right).

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Figure 1.2 Cover of *Motivation, Konflikt, und Handlungskontrolle* (Kuhl, 1983), which instigated the revival of German volition psychology.

widespread constructivist tendency in social and personality psychology. According to Kuhl, this theoretical tradition prematurely "explains" behavior on the basis of people's subjective beliefs and concepts. Kuhl acknowledged that subjective constructs can be useful for making predictions and for finding an interpersonal level of mutual understanding (e.g., in counseling and therapy). However, Kuhl was convinced that constructivism has to be supplemented by a new form of scientific realism that is based on a functional analysis of relevant competences and processes (Alsleben & Kuhl, 2010; Kuhl, 1981; Kuhl & Helle, 1986; Kuhl, 2000a). For instance, when a student notices that she fails to enact an important intention (e.g., to prepare for an exam) despite having positive beliefs and intentions, reinforcing positive beliefs and intentions may not be very helpful. Instead developing her actual self-regulatory competences might be a more useful strategy.

In his groundbreaking 1983 volume, Kuhl built a theoretical bridge between modern motivation science and classic German volition psychology. Specifically, Kuhl revisited the old controversy between Narziss Ach, a volition researcher in the early 20th century, and Kurt Lewin, a pioneer of motivation research. Ach (1905, 1910, 1935) had conducted ingenious experiments showing that volition allows people to enact difficult actions, and that forming specific action plans facilitates volitional action control. However, Lewin (1926) believed that Ach's conception of purposive behavior was too narrow, and proposed that people flexibly choose options that bring them the highest expected value. The Lewinian approach had prevailed after World War II, leading to a complete neglect of volition in motivation psychology up to that time.

Kuhl suggested that the seemingly opposing theories of Ach and Lewin could be reconciled by assuming that each refers to a different problem in action control. Lewin's expectancy-value approach (and its successors) related to the problem of *choosing* the right kind of action, which Kuhl referred to as "choice motivation." By contrast, Ach's determining tendencies related to the problem of implementing a chosen course of action, which Kuhl referred to as "realization motivation." By thus settling the Ach-Lewin controversy, Kuhl brought volition back into the focus of motivation researchers. Kuhl's conception of the relation between motivation and volition was embraced by Heckhausen (Heckhausen & Kuhl, 1985) and thus contributed to a broader revival of German volition psychology (Heckhausen & Gollwitzer, 1987; Gollwitzer, 1993, 1999).

A central interest of Kuhl was in individual differences in volitional functioning. Kuhl developed a self-report scale that captures such individual differences: the Action Control Scale (Kuhl, 1984, 1994). People scoring high on the scale, or "action-oriented" individuals, report that they are capable of initiating new courses of action under demanding conditions and of disengaging their mind from negative thoughts and feelings. By contrast, people scoring low on the scale, or "state-oriented"

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individuals, report that they are more prone to lack initiative and to become preoccupied with negative thoughts and feelings.

Together with his first doctoral student, Jürgen Beckmann (born 1955), Kuhl showed that individual differences in action versus state orientation moderate a number of well-known phenomena in mainstream psychology, including learned helplessness (Kuhl, 1981), cognitive dissonance reduction (Beckmann & Kuhl, 1984; see also Chapter 11 in this volume), and the intention-behavior gap (Kuhl, 1982). These findings were integrated in a comprehensive theory of volitional action control (Kuhl, 1984), which outlined six subtypes of volitional processes, including: 1) selective attention, 2) selective encoding, 3) emotion control, 4) motivation control, 5) environment control, and 6) parsimonious information processing. This groundbreaking process-analytic approach was to guide subsequent research on motivation and volition. The fact that similar mechanisms are now widely used to explain emotion regulation (e.g., Gross, 2001) and self-control (e.g., Kotabe & Hofmann, 2015) attests to the visionary nature of these early ideas.

The Middle Years (1986–2000): Creating New Paradigms

In 1986, Kuhl accepted a full professor position as chair of the Differential Psychology and Personality Research lab at Osnabrück University, Germany. In this medieval German city known as the *Friedensstadt* ["City of Peace"], Kuhl settled down and formed his own research team. He would continue to work at Osnabrück until his retirement in 2015. Kuhl's first aim was to develop new experimental paradigms for studying volition. The starting point for his team was the general notion that volitional deficits may arise from incompletely developed mental representations of intentions (Kuhl & Helle, 1986).

A classic phenomenon in motivation psychology is the so-called Zeigarnik (1926) effect, which states that people recall uncompleted intentions better than completed intentions. However, the Zeigarnik paradigm was not rigorously controlled and its central findings had proven difficult to replicate. Kuhl and his PhD student Thomas Goschke (born 1958) developed a new experimental paradigm with better controls and more sophisticated memory tests (i.e., response times, signal detection measures). This line of experiments confirmed people's superior memory for intention-related information (Goschke & Kuhl, 1993; see also Chapter 7 in this volume). Unexpectedly, the intention-superiority effect turned out to be greater for state- (than for action-) oriented people. Kuhl (2000a) suggested that state-oriented people may be more rigid in maintaining intentions in working memory, and that this cognitive tendency paradoxically renders them less capable of enacting their intentions. This over-maintenance hypothesis has been confirmed in subsequent research (Kaschel, Kazén & Kuhl, 2017; Ruigendijk & Koole, 2014; see also Chapter 9 in this volume).

Another important aspect of intentions is whether or not they were chosen by the self. If people decide to commit to an intention themselves, the intention is likely to be better integrated with people's emotional preferences than if this commitment is forced on them (see Deci & Ryan, 2000; see also Chapter 14 in this volume). People therefore should be capable of distinguishing whether their intentions are self-chosen or imposed on them by an external agent (see Chapter 15 in this volume).

Together with Miguel Kazén (born 1952), Kuhl developed an ingenious paradigm to examine this volitional capacity. In the so-called "self-discrimination task" (Kuhl & Kazén, 1994), participants have to choose some activities themselves, whereas other activities are assigned to participants by the experimenter. After a filler task, participants have to remember which activities were assigned and which were self-chosen. If people are good at self-discrimination, they do not confuse assigned

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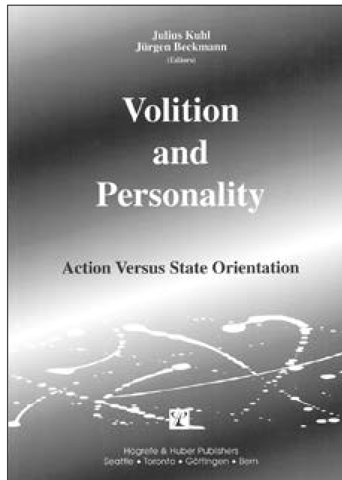

Figure 1.3. Cover of *Volition and Personality* (Kuhl & Beckmann, 1994), a book bristling with new ideas, paradigms, and applications.

tasks for self-chosen tasks, which means they show self-congruence (or "integrity") rather than follow others' expectations. Notably, Kuhl and colleagues consistently found that state-oriented individuals, particularly under conditions of negative affect or stress, tend to lose this form of integrity. The self-discrimination task and relevant findings are discussed in more detail by Baumann, Kazén, and Quirin (see Chapter 16 in this volume).

Besides developing the aforementioned basic research paradigms, Kuhl took an active interest in practical applications of motivation and volition. This combination of a deep theoretical focus and a strong applied interest is reflected in the 1994 volume *Volition and Personality: Action Versus State Orientation* that Kuhl co-edited with Jürgen Beckmann (see Figure 1.3). Although the book is an edited volume, most of the chapters of this book were authored or co-authored by Kuhl himself. The book is further remarkable for its unusual mix of highly theoretical chapters, more empirically oriented basic research chapters, and more applied chapters in domains such as education, sports psychology, and clinical psychology. Furthermore, the book had chapters with Professor Renate Haschke, with whom Kuhl conducted pioneering EEG studies on the neural activations of action- versus state-oriented people in response to emotional stimuli. This marked a transition in Kuhl's thinking from theorizing about cognitive mechanisms to theorizing about the neurobiological processes that are underlying these cognitive mechanisms.

Perhaps more than anything, *Volition and Personality* speaks to the herculean efforts that Kuhl was making to push the scientific understanding of motivation and volition ever further and deeper. In trying to understand the phenomena, Kuhl was using everything he could find from diverse disciplines – cognitive, personality, social, motivation psychology, neuroscience. All the while, Kuhl kept returning towards the big picture, trying to create a comprehensive framework that could integrate all empirical observations and theoretical insights. Indeed, some of the chapters in *Volition and Personality* already referred to a new comprehensive theory of motivation and volition that Kuhl was working on during the 1990s. This theory was to become the focus of the later years of Kuhl's scientific career.

The Later Years (2000–Present): PSI Theory

In the summer of 1994, Kuhl withdrew to the Italian island of Giglio to pull all the strings together of his ideas and findings. The basic outlines of the theory were completed within two months. How-

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Figure 1.4. Cover of *Motivation und Persönlichkeit*, Kuhl's (2001) magnum opus.

ever, it would take an additional 6 years to spell out the implications of this theory. The final result was personality systems interactions (PSI) theory. PSI theory and its applications have been covered by many English-language publications (e.g., Kuhl, 2000a, 2000b, 2000c; Kuhl & Baumann, 2000; Kuhl & Koole, 2004, 2008; Kuhl, Quirin, & Koole, 2015). However, the most important publication on PSI theory is once again a book: *Motivation und Persönlichkeit: Interaktionen psychischer Systeme* [Motivation and personality: Interactions between psychological systems] that was published by Kuhl in 2001 (see Figure 1.4).

A towering volume of 1,221 pages, *Motivation und Persönlichkeit* arguably represents Kuhl's greatest scholarly achievement. The fact that Kuhl chose to write this work in German rather than English is a bit puzzling. It may be related to the lukewarm reception that Kuhl's theoretical work sometimes received among English-speaking colleagues. Indeed, in the second chapter, Kuhl quotes a telling comment of the influential American psychologist Martin Seligman, who apparently told him, "I don't trust any theory that has more than three boxes" (2001, p. 61). Fortunately, other American colleagues showed themselves more tolerant of theoretical complexity (see Chapter 10, 13, 14, and 15 in this volume). Nevertheless, the open aversion to complex theories that Kuhl encountered in the English-speaking world was likely a factor when he decided to write his greatest scholarly work in German.

In the space of 20 chapters, *Motivation und Persönlichkeit* takes Kuhl's theory of action control as a starting point and develops it into PSI theory, a theoretical framework that embraces all personality functioning. In the theory, volition is merely the "tip of the iceberg," placed at the top of a hierarchy of seven levels of personality functioning, consisting of (1) habits, (2) temperament, (3) affect and incentive motivation, (4) coping with stress, (5) implicit motives, (6) cognitive processing styles, and (7) self-regulation. Each of these seven levels constitutes a different way of explaining human behavior, and has been the focus of a separate research tradition within psychology. Consequently, the perspective of PSI theory is considerably more general and abstract than modern psychologists are used to. PSI theory could be called a macro-theory in that it consists of general principles that cut across many different phenomena and that are usually treated by separate theories. However, the theory could equally be called a micro-theory, because of the fine-grained analyses of personality processes that it affords. Perhaps the safest conclusion is that PSI theory simply defies any attempts to fit it within pre-existing categories and pretty much forms a category on its own.

For more in-depth reviews of PSI theory, we refer to other chapters in this book (e.g., Chapter 2 in this volume) and earlier publications (e.g., Kuhl, 2000a, for the theoretical core of PSI theory; Kuhl, 2000b, for an application of PSI to the motivational dynamics within educational settings; Kuhl, 2000c, for a functional analysis of personality disorders; Kuhl & Koole, 2008, for a closer

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look at the seven levels of personality functioning). Here, we limit ourselves to some of the key developments that were stimulated by the theory.

A first development was a shift from “hard” (compulsive and conflict-driven) forms of willpower to “soft” (self-accepting and intuitive) forms of willpower. This theoretical shift paved the way for a new generation of research on soft willpower. For instance, Kuhl and Kazén (1999) demonstrated that volitional action can be facilitated by briefly exposing people to positive affective stimuli. In their experiments, volitional facilitation by positive affect completely eliminated the Stroop interference, one of the most robust phenomena in experimental psychology (MacLeod, 1991). Together with Nicola Baumann (born 1966), Kuhl further explored the relations between volition and intuition (Baumann & Kuhl, 2002) and implicit motives (Baumann, Kaschel, & Kuhl, 2005). Kuhl’s ideas about soft willpower further stimulated research on implicit processes in emotion regulation, which he investigated with Sander L. Koole (born 1971) at the Amsterdam Emotion Regulation Lab (Koole, 2009; Koole & Jostmann, 2004; Koole & Kuhl, 2007; Koole & Rothermund, 2011)

A second development stimulated by PSI theory was a renewed interest in the neurobiological foundations of motivation and volition. This interest was already apparent in Kuhl’s earlier work with Haschke and colleagues (Rosahl, Tennigkeit, Kuhl, & Haschke, 1993). But PSI theory brought the theoretical significance of neurobiological processes in full view. One set of studies related self-discrimination processes to different hemispheric activations (Baumann, Kuhl, & Kazén, 2005). The neurobiological orientation was further implemented in research with Markus Quirin (born 1974), who related motivational and volitional processes to neuroendocrine functions (Quirin, Kuhl, & Düsing, 2011) and analyzed them with sophisticated neuro-imaging paradigms like EEG (Düsing, Tops, Radtke, Kuhl, & Quirin, 2016) and fMRI (Quirin, Loktyushin et al., 2011).

Finally, a third development stimulated by PSI theory was the practical application of research on motivation and volition. Throughout his career, Kuhl developed a wealth of experimental methods and diagnostic instruments. Many of his questionnaires (e.g., on action and state orientation, Kuhl, 1994; personality styles and disorders, Kuhl & Kazén, 2009; self-regulation, Kuhl & Fuhrmann, 1998), are translated and validated in many languages and rank as standard instruments in research and applied contexts. PSI theory led to the development of new non-reactive, computer-based, and process-oriented diagnostic instruments, including tests for implicit affect (Quirin, Kazén, & Kuhl, 2009), volitional facilitation (Kuhl & Kazén, 1999), and implicit motives (Baumann, Kazén & Kuhl, 2010; Kuhl & Scheffer, 1999; Kuhl, 2013). Moreover, Kuhl developed a

Figure 1.5. Julius Kuhl, who continues to share the fruits of his long scientific career.

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systematic methodology for using his test battery in clinical and counseling settings (Kuhl, Kazén, & Koole, 2006; see also applied in Chapters 17, 18, 19, 20, 21, 22, 23, and 24 in this volume).

A consistent theme in Kuhl's work has been the measurement and advancement of individual potentials within children and adolescents. Indeed, Kuhl has conducted pioneering work in the development of diagnostic tools for young children at the age of Kindergarten and elementary school (e.g., the self-regulation test for children; Kuhl & Kraska, 1992). Between 2008 and 2015, this work led him to become leader, together with Professor Claudia Solzbacher, of the Lower Saxony Institute for Education and Development in Early Childhood (NIFBE)'s Research Centre for the Promotion of Abilities (2008–2015). NIFBE has trained a new generation of scholars in the applied science of assessing and nurturing young talents (see also Chapter 20 in this volume). The same interests guided Kuhl toward establishing the Andrea Kuhl foundation (http://www.andreakuhl-stiftung.de/home/). In honor of his late wife, Andrea Kuhl, the foundation seeks to support educators in stimulating optimal self-development of children and youngsters.

Outside the German-speaking world, it is little known that Kuhl has been committed to communicating his theory far across the traditional boundaries of psychological science. His interpretations of fairy tales in lectures and books (Kuhl, 2001, Chapter 20; Kuhl, 2010, at each chapter end), for example, are designed to make complex theoretical ideas intuitively accessible. Furthermore, Kuhl has written books on the discourse between psychology and philosophy (e.g., Kuhl & Luckner, 2006) and psychology and religion (e.g., Kuhl, 2005). Kuhl further co-authored a popular psychology book with Maja Storch that made it to the bestseller lists in Germany (Storch & Kuhl, 2012).

Epilogue

In 2012, Julius Kuhl received a lifetime achievement award from the German Society for Psychology (DGPs). This chapter has showcased some of Kuhl's contributions that make him particularly deserving of this distinction. Kuhl himself, on the last pages of *Motivation und Persönlichkeit* (Kuhl, 2001, p. 1103) explained how he identified with the plea for a romantic science by the Russian neuropsychologist Alexander Lurija (1993). Lurija's notion of romantic science entails the combination of a rigorous search for lawful processes and mechanisms, while the researcher maintains a holistic, systems-oriented sensitivity for the complexity of those processes and a caring, involved attitude that respects the individuality of the person. We hope that the romantic science of Julius Kuhl will continue to inspire many generations of researchers, practitioners, and general audiences.

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