Preface

I remember how difficult philosophy seemed when I was an undergraduate at Berkeley. I was taking epistemology with Barry Stroud at the time and, feeling a bit disheartened one day, went to his office and asked, “Does it ever get easier?” No, it doesn’t, he told me, since as you grow as a philosopher you work on increasingly difficult problems. Although this was not the response I wanted to hear, it made sense immediately, for I was entering college directly from a career as a professional ballet dancer. Ballet, I knew, never gets easier; if anything, it gets harder because as you grow as a dancer, you develop both higher standards for what counts as good dancing and your ability to evaluate your dancing, finding flaws that previously went unnoticed. Just as in Plato’s dialogue the Apology, where Socrates is wise because he knows that he is ignorant, it is, among other things, the ability to recognize where there is room for improvement that allows expert dancers to reach great heights.

The ability to see room for improvement, however, is not of much use unless one also has a strong and ongoing desire to improve. And it may be that, more so than talent, it is this desire to improve, an attitude the Japanese call “kaizen,” that turns a novice into an expert. I certainly had kaizen in abundance, as did most every professional dancer I knew. It was ingrained in my mind and body to the extent that every class, rehearsal and performance was in part aimed at self-improvement. And improving, especially after you have acquired a high level of skill, typically requires an enormous amount of effort. Sometimes this effort is physical—and it certainly involves more physical effort than philosophy—yet it also involves concentration, thought, deliberation and willpower.

The idea that performing a ballet typically involves tremendous effort, however, is contrary to the widely touted view that great performances, in ballet and elsewhere, are intuitive and effortless. Although practice may be hard work, it is thought that when performing, an expert just lets the movement happen. Indeed, thinking about what you are doing during a performance is, if anything, thought to interfere with expert skill. This book is about why that contention is wrong.

It was during the Spring of 2003 that I began ruminating over the standard view of the relationship between expert action and thought. I was being interviewed for an assistant professor position at City University of New York and had just given a talk about how proprioception, which is our nonvisual sense of the positions and movements of our bodies in space, provides insight into the beauty, grace, power and precision of one’s own bodily movements, and how dancers, by focusing on their proprioceptive experiences, can have such insight. The typical question and answer period ensued, during which the faculty unrelentingly tries to test your mettle, whereupon the philosopher Bob Child, who happens to also be an avid golfer, asked, “but doesn’t focusing on what you are doing interfere with performance?” Child, it struck me then, was right, for I had often heard the admonishment “you’re thinking too much,” coupled with the advice to just let it happen. So I ended up vacillating a bit, as philosophers do in the face of apparently devastating objections, before timidly suggesting that perhaps a dancer on stage would need to settle for enjoying whatever experiences of beauty just happens to bubble up to consciousness. Fortunately, Child seemed satisfied: I wiped the sweat off my brow, and I got the job. Yet I didn’t stop pondering his question. And the more I thought about it, the more I reflected on my own experiences both as a professional ballet dancer and as a philosophy professor, the more I talked to others about their experiences of performing at their best in their area of expertise and read up on the psychology and neuroscience of expert skill, the more I realized that the correct answer to Child’s question should have been “no.” These pages recount the journey I went through in arriving at this answer.

During the years of working on this book, it has often seemed to me that the gruelingly difficult process of writing it should be an emblem of my view that expert action often involves effort and thought. Although I have told myself time and time again to stop fretting and just get to work, this was more of a call to stop all the useless chatter in my head about how I will never be able to accomplish my goal, rather than a command to ease up and let it just happen; letting it happen, for me, would have led to nothing happening. Of course, part of the reason the process has been so difficult is that it has involved learning about new topics; although there are aspects of this work that I have been thinking about for over a decade, some of it represents more recent sallies unto the breach. Be that as it may, writing, whether it is about topics new or old, is never easy for me.

In explaining what it is like to write a song, Billy Joel said “I love having written; but I hate writing.” And for me as well, writing is more conducive to the type of happiness that results from looking back over your life and accomplishments with a sense of fulfillment, what the ancient Greeks referred to as “eudaemonia,” than to the type of happiness we associate with the moment by moment pleasure of, say, a good meal. Nonetheless, despite its grueling difficulty, it would be wrong to characterize the task of writing this book as all work and no play—all work and no pay, perhaps, but play has certainly been an element. Possibly, this is in part because philosophers and ballet dancers have something in common: they enjoy suffering. But more importantly, it is at least sometimes also true that writing, like dancing, can allow one to experience the exhilaration of learning,
improving and creating, and I hope that in the upcoming pages I have conveyed not only my view that expert action involves both thought and effort, but also some of this joy.
INTRODUCTION: Why a philosophy of expertise?

Science, Richard Feynman once said, is the belief in the ignorance of experts. If so—though I wouldn’t put it in quite those words—then perhaps my project should be dubbed scientific, for it is my belief that a wide range of experts who have written about expertise have been mistaken. In particular, I believe that various psychologists, philosophers, neuroscientists, and other experts on high-level performance have erroneously concluded that expert action proceeds best when the mind is relatively less active, when action occurs automatically, and when bodily movements are effortless. These expertise-experts, I believe, are wrong.

If science is not the belief in the ignorance of experts, or rather, if it is not only this but also involves creating theories that are both based on the results of observation and are capable of empirical refutation, then perhaps, here too, at least part of the task I am engaged in should be seen as scientific. For although I have not recorded and analyzed my observations in the sort of systematic, quantitative way characteristic of scientific investigation, my understanding of expertise is grounded in observations of hundreds of experts with whom I have spoken with or read about and have observed in action and, as such, is capable of being proven wrong by further observational data.

However, if science requires performing controlled experiments of the sort found in much of the psychology of expertise and drawing conclusions based on their results, then this work is hardly scientific, for I have conducted no such experiments. 1 Indeed, I have no lab; I have no research staff; I am, as the old joke goes, one of those great bargains for the university. But philosophical investigation is only a bargain if it provides something worthwhile, and you might be wondering, “What can a philosopher tell you about expertise?”

One answer to this question, of course, is to invite you to read the rest of the book and find out. However, for those who may need some reason to read on in the first place, let me try a different tack.

Obstacles to the science of expertise

When I told the mathematician Philip Welch that I was writing a book about what goes on in the mind of an expert in action, he looked at me a bit askance and asked, “wouldn’t an fMRI answer such questions about whether experts think?” This comment surprised me, not because of its content—it is a reasonable question to ask—but rather because of its timing: he was just sitting down to a dinner that my husband and I had cooked, and thus I would have expected him to merely nod his head in polite dinner-conversation manner and commence eating before the soup got cold. As he is usually is the picture of decorum, this issue must have really struck him. And since it has likely struck some of you as well, let me recount more or less what I said that night in response.

There is no doubt that we have learned a great deal about the mind of the expert in action from empirical research that has been carried out by neuroscientists and psychologists, as well as by psychiatrists, neurologists, and sports medicine physicians. Such researchers conduct experiments in controlled settings, and controlled settings are important since (at least ideally) they enable us to manipulate one variable of a situation, such as an expert’s self-monitoring of her actions, to see how it affects another variable, such as performance success. However, the nature of expertise makes it extremely challenging to study in controlled laboratory settings.

One reason for this is simply that experts are typically not willing to spend an afternoon as test subjects; they have better things to do and have become experts precisely because they make good use of their time. In this respect, the scientific study of conscious experience, which is sometimes thought of as an empirically recalcitrant phenomenon, has an advantage over the scientific study of expertise. Consciousness, it is said, confounds scientific investigation since science can reveal only the neural or behavior correlates of consciousness but never consciousness itself. Whether or not this is true, however, it is a trivial matter to find conscious college students—the blood-alcohol level of the typical student notwithstanding—who are willing to participate in psychology experiments in exchange for a measly $10 or course credit; however, finding experts who are willing to participate in experiments is near impossible. If the question of how to understand consciousness scientifically is, as it is often called, “the hard problem,” studying expertise is the really hard problem.

Getting experts into the lab, though near impossible, is not impossible if one has a large enough grant or, more likely, if one is in the right place at the right time. For example, the psychologist and master-level chess player, Adrian de Groot, who has been referred to as one of the founders of cognitive science, carried out much of his groundbreaking work on chess while he was ship-bound along with other members of the Netherlands’ National Chess team on their way the 1939 Chess Olympiad in Buenos Aires. Lashed to the deck (or nearly so), the chess players were willing to cooperate with de Groot; typically, though, psychologists do not have at their disposal such means to induce participation.

On those rare occasions when experts do make it into the lab (as well as when you bring the lab to them, as de Groot did) a distinct obstacle researchers face when trying to understand the expert mind in action via controlled experiments, is that such experiments cannot capture the urgency of a Trauma Center, the excitement of opening night at the Paris Opera House, or the overwhelming aspiration, hunger, and yearning to beat your opponent at chess. Being asked to repeatedly dribble soccer

1 Though in chapter 11 I do discuss the results of some informal experiments I conducted on chess players.
The psychologist Andres Ericsson suggests that since experts can perform in a wide range of conditions, they can perform their skills in the laboratory as well.\(^3\) And to a degree this is correct. Depending on their respective expertise, experts can, for example, putt a ball, play a sonata, or choose the next move in a chess game in a laboratory setting. But they will not be on their mettle; that is, they will not be roused to perform at their best. Of course, it might be possible for them to perform at their best in a laboratory setting—a million dollar reward might do the trick, for example—yet he typical incentives do not suffice to inspire excellence. For some investigations into expert performance, this might not matter. For example, if you are interested in where basketball players focus their eyes right before they shoot, perhaps whether they are highly motivated or not will not change this. However, if you are interested, as I am, in whether experts exert significant amounts of effort during a performance or a game, a lackadaisical approach to their tasks in the laboratory does matter.

Another problem with some experimental research into expertise is that such experiments often ask experts to engage in actions that are quite different from those that occur during an actual game or performance. Dribbling a soccer ball through a slalom course and then reporting, at the sound of randomly generated tones, which side of the foot had just touched the ball (Ford, Hodges and Williams 2005 and Beilock et al. 2002), or, as is asked of baseball players in another study, performing a batting task without a ball and to say at the sound of randomly generated tones whether at that instant the bat is moving up or down, are things experts would typically not do, even if they are thinking about their own performance in other ways. Research that fails to capture real-life settings is sometimes criticized by psychologists as not being “ecologically valid.” What exactly ecological validity amounts to is an open question; however, experiments looking at performance that differs to such a large degree from that of the target of investigation should make us question whether the results can be generalized to apply to expert performance outside the lab. As we will see, researchers can sometimes trade in some element of control that exists in a laboratory setting for more ecological validity. And I rely on some of these studies to support my position that experts think about, monitor, and exert effort in performing their actions. Yet finding the right balance between control and ecological validity is a challenge.

Moreover, in direct response to Philip—who was naturally ready to pitch into the dinner at this point—quite apart from the difficulty of performing a brain scan on a high-diver mid-air, brain imaging technology is not always useful in the study of expert action since, at least as things stand now, we do not adequately understand what areas of the brain underlie thought, effort, and attention. As Yarrow and colleagues (2009) concluded in a recent review article on neurological research investigating elite athletes, “clearly expert and novice athletes use their brains differently, but precisely interpreting these differences in terms of their functional roles seems some way off at present” (p. 589). And so, as I discuss in later chapters, although there are a number of neurological studies that are suggestive, there are none that are conclusive, and even what exactly they are suggestive of is frequently open to debate.

Finally (and I noticed Philip reach for the spoon upon hearing this word), when we add to these challenges the fact that there is very little agreement among the expertise scientists about who exactly counts as an expert and what exactly expert action is, we are left with an area that is, indeed, difficult to study scientifically, as well as one that has at least the potential to benefit from philosophical reflection. Philosophy, no doubt, faces obstacles as well, rather large ones. And I assume that the final answer—or, if there is no final answer, then something closer to the final answer—to the question of what goes on in the mind of an expert in action will be revealed in scientific inquiry, for I am very much of the opinion, as the philosopher of science Bas van Fraassen (1996) once put it, that “there are no science stoppers” (p. 80). Accordingly, I believe that if controlled experiments tend to destroy expertise, what we need to do is not give up, but find a way to change the controls. Nonetheless, I think that at this point in the study of expertise it might be worthwhile to take a brief pause in the scientific investigation into the question of what goes on in the mind of the expert in action—if only long enough to read this book—and ponder it from, if not a strictly philosophical, then at least a philosopher’s point of view.

**Methodology**

Philosophy, as is well known, encompasses a wide variety of approaches, and it is sometimes difficult to find even a family resemblance among them. One philosophical approach that I favor, however, is to see just about everything as open to question—not to question everything, of course, which would be impossible, but to hold very little as beyond reproach. In most other walks of life, if someone were to doubt whether the sun will rise tomorrow, we would be inclined to see this as lunacy; philosophers, however, write long treatises about it. Though I am happy to assume that the sun always rises, I do question a view that, although not nearly as tightly woven into our mental fabric as our expectations about sunrises, is nevertheless widely assumed, and this is the view that thinking about what you are doing as you are doing it impedes performance. Now, like anyone, philosophers are much better at questioning others’ assumptions than at questioning their own, and in order to talk about expertise, I shall, no doubt, leave innumerable views unquestioned: not only basic beliefs like the assumption that the sun will rise, but some views that are quite specific to the topic at hand, such as whether high anxiety can hinder performance, or whether being an expert is something valuable enough to justify research on expertise, or whether experts have minds, or whether experts exist at all. All that, I assume. What I question, however, and ultimately reject, is the maxim that expert action proceeds better with less thought and less effort.

Part of my task is purely critical, involving, for example, dispelling various mythical accounts of experts who act without any understanding of what guides their actions. That proverbial chicken sexer that philosophers are fond of citing who

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3 Andres Ericsson in the Cambridge Handbook on expertise.
can’t explain why he makes his judgments—he doesn’t exist (Nakayama, 1993). Coleridge’s “Kubla Khan,” which supposedly came to him fully formed in a dream, actually took nearly ten years to write (Schneider, 1945). My critical task also addresses theoretical approaches to studying expertise. For example, much of the research on expertise, in both philosophy and psychology, extrapolates conclusions based on empirical studies or phenomenological investigation into everyday skills and applies them to expert performance. I concede, as Bernard Williams (1985) points out, “that a practical skill can, in an individual case, be destroyed by reflection on how one practices it.” However, as Williams also indicates, in “favorable circumstances,” reflection may enhance a skill. Such circumstances, I argue, generally occur when an individual has engaged in ten or more years of close to daily, extended practice with the specific aim of improving, and, importantly, is still intent on improving. And one theme of my research is that this manner of training enables experts to perform while engaging their self-reflective capacities without any detrimental effects; it allows experts to think and do at the same time.

My critical task also involves presenting various error theories that explain why it is that so many have found the just-do-it view appealing, even though it is wrong. For example, some may accept the view that expert action is unreflective because, quite simply, expert actions often appear effortless. This is particularly true of ballet, where movements are often supposed to produce the illusion of effortlessness. Yet this illusion is difficult to create. The Renaissance writer, Baldassare Castiglione (1528/1975), was well aware of both the importance and difficulty of appearing spontaneous in one’s actions and in his Book of the Courtier explains how to achieve sprezzatura, which is a contrived effortlessness or as Wescott (2000) puts it, “the art of acting deviously”. Though no contrivance may be involved in exercising other expert skills—a professional soccer player cares not about how his actions appear—in these cases, too, the apparent effortlessness is often merely apparent.

The central positive arguments that support my view fall roughly into three categories. First, I analyze case studies, which are in-depth explorations of specific examples of expert action, such as a head-nurse’s experience of working in the emergency room, a tennis player’s experience of competing in a grand slam, or a chess player’s experience of playing speed chess. Second, I examine and draw inferences from empirical research that identifies psychological factors experts themselves see as conducive to improved performance in high-pressure situations; for example, a study by Adam Nicholls and colleagues (2006) suggests that professional rugby players regularly cope with pressure by increasing their concentration on the task. Third, I consider what we should expect would be true about expert action given what we know about experts and the way they train. What can we infer, for example, about expert performance given that experts practice in a thoughtful, analytic manner? How does the often-obsessive drive to improve affect the state of an expert’s mind when she is exercising her skills? And what follows from the need to occasionally take risks in performance? My hope is that, although no single line of argumentation is conclusive on its own, theses independent paths, when taken together, lend my theory of expert performance what William Wimsatt (2007) sees as a criterion for being the best explanation for the available data, namely robustness.

The starting assumption of many researchers in this area is that experts, in their best performances, do not think about what they are doing. Then, with this preconception, researchers go on to devise studies to test it. And because of the strength of this preconception, it seems that sometimes studies in this area are designed to better understand the phenomenon rather than to falsify it. If nothing else, I will consider my book a success if it creates a fissure in this approach.

A Methodological Principle

Although for some purists, philosophy is and ought to be an entirely a priori pursuit, it should be apparent that this work does not fall into this category, for my case studies are based on data from experts with whom I have spoken or read about (as well as reflections on my own experience currently as a philosopher and formerly as a professional ballet dancer.) Data is, of course, the stuff of science, yet I have not systematically recorded this data as would befit scientific inquiry. Nonetheless, I hope that the case studies are illustrative of the phenomenon I aim to describe. And, similar to the ways in which case studies are relevant to medical research, I aim for them to provide an in-depth look at a particular phenomenon. Of course, in medicine, the case study is presented out of necessity, for the condition is usually unique (or at least previously unseen), making a larger-scale study impossible. Expertise, however, is not unique; indeed, there are even interesting statistical analyses of expert performance under what is assumed to be various psychological conditions. But I think that individual cases, like in medicine, though incapable of grounding generalization, may also provide inspiration for further research.

Don’t I know, however, the questioners of assumptions may ask, that we are frequently mistaken about the contents of our own minds so that neither introspection nor first person reports can be trusted? I do know this. Or rather, I know that we are sometimes mistaken about what is going on in our own minds, especially with regards to the reasons we are acting in a certain way and that sometimes 4 But in general, I think, and shall assume throughout the book, that as long as there are no good reasons to question any particular report about what someone says they are experiencing, first person reports can be taken as evidence for what is actually going on in a person’s mind. In other words, I accept the following:

Methodological Principle. First person reports of what goes on in one’s own mind should be accepted as defeasible evidence for the truth of the report; that is, we should accept such reports unless we have good reason to question them.

For example, if you have good reason to believe that someone is lying or that someone is likely self-deceived (based on, say, personal interactions), or that someone is making claims about his or her own mental states because they are responding to leading questions, or they have been reading a theory that suggests the view, or that the results of a psychology experiment show

4 See, for example, Nisbett and Wilson 1977; Gobet 2009 and (“mind set”) effect (Bilalić et al. 2008b, c).
that such type of introspection is more likely wrong than right, then we should doubt the reports of such an individual. However, barring any reasons for doubt, I take first-person accounts of one’s own mental processes at face value.

What to expect when you’re reading

In Chapter 1, I bring to the fore the widespread acceptance of the idea that experts perform best without thinking about what they are doing—what I refer to as the “just-do-it principle,” or for short, “just-do-it.” People have held this view or something like this view in many different forms and, in this chapter, galloping across time periods and intellectual traditions, I take the reader through a tour of some of its various contemporary manifestations in popular culture, philosophy, psychology and neuroscience, as well as some of its historical antecedents in Romanticism, Zen Buddhism, and Taoism. The aim here is neither to bury nor even less to praise the maxim, but to show how ingrained it is in our psyche.

Though I often simplify the just-do-it idea as the view that “experts do not think,” in Chapter 2 my pace slows down to a crawl, as I present a formulation of the just-do-it principle, categorize the various positions encountered in the prior chapter, and pull apart the different kinds of mental processes that are proscribed by just-do-it advocates (which include conscious control, monitoring, analyzing, planning, deciding, and effort). I will also distinguish the descriptive aspect of the principle (the aspect that tells us what experts do) from both the proscriptive claim about what experts ought not to do, and explain what I refer to as “the principle of interference,” which asserts, in short, that thinking interferes with expert action. In this chapter, I also distinguish moderate forms of the just-do-it principle, which tell us that peak expert performance is free from certain sorts of mental processes, from extreme views which say that experts, when acting at their best, do not engage their minds at all (the brain is working, of course, but the mind is absent). And in this chapter, I also present what I refer to as the “master cogito,” which captures the view that, contrary to just-do-it, experts think in action.

After this, in Chapter 3, I tackle the question of what counts as an expert. This, as I shall explain, is debated in the psychology of expertise. However, I argue that ultimately for my purposes, an expert should be understood as someone who has spent around ten years or more engaged in deliberate practice of their skill, which is practice with the specific aim of improving. Such a definition might not match exactly what we call an “expert” in ordinary language, but it identifies the group of individuals to whom, I go on to argue, the just-do-it principle does not apply.

Housekeeping over, Chapter 4 begins the argument for the view that thought and effort do not interfere with but instead are important components of expert action, an argument that continues through to the end of the book. In this chapter and the next, I look at situations which would seem especially conducive to the just-do-it principle and argue that the master cogito principle applies in these situations at least as well. The particular circumstances under investigation in this chapter are high-pressure situations, for according to a number of psychologists, the type of anxiety that might be experienced by an athlete during an important game or event does not itself hinder athletic performance, but rather, performance may falter in high-pressure situations because anxiety causes individuals to think about (more specifically, to monitor and consciously control) what they are doing. In line with the principle of interference, it is the monitoring and conscious control, according to such researchers, that is harmful. In this chapter, I suggest instead that intense monitoring and control may help experts reduce anxiety, which is a view suggested in studies by the psychologist Adam Nicholls.

Another situation commonly thought to support just-do-it is when actions must occur at lightning-fast speeds, and Chapter 5 addresses the question of whether there are situations requiring such quick responses that thinking, especially conscious thinking, would be impossible. One line of reasoning that I address concerns situations where experts purportedly need to react to something before they have time to consciously see it, such as in tennis where, some claim, a player might need to strike back before consciously seeing the ball leave the server’s racket. The expert, it is sometimes argued, is not conscious of her movements because she has to move before consciousness can kick in. I argue that because it is an open question about when a person becomes conscious of an event, thinking is not ruled out, especially given that experts in a wide variety of arenas that require the utmost speed report that they do think in action.

Proponents of just-do-it typically believe that an enormous amount of effort and deliberate training goes into making an expert, yet they also think that all the training aims at the final result of performing without effort or thought. However, in Chapter 6, I argue that because experts train with focused thought, and that because the desire to improve and excel is so ingrained in experts, experts can think, without detriment, while performing (as long as they are thinking about the right things). This, as I shall argue, is supported by some research by Dave Collins and his colleagues which suggests that although focusing on their movements may change experts’ movement patterns, it may not always diminish their overall task performance. Improvement involves increased attention to performance, yet a bedrock principle in psychology is that attention is limited. However, I suggest at the conclusion of this chapter that expert action may give us reason to question this bedrock principle. When the pressure is on, or when the drive to win is present—situations that never truly occur in laboratory settings—experts, I argue, may be able to focus fully on numerous different targets.

The next two chapters are both focused on the role of effort in expert action. Beginning with a discussion of work by the philosophers Brian O’Shaughnessy, Jennifer Hornsby (1980), and Robert Hanna and Michelle Maiiese (2009), who hold that trying is essential to all our intentional actions, I go on, in Chapter 7, to distinguish the various ways that trying or the closely related phenomenon of effort occurs in actions, and then identify the forms of trying that would reasonably occur in expert action. As trying to do something, rather than just doing it is effortful, expert action is thus effortful. Moreover, though throughout most of the book I focus on professional level expert actions, this chapter also addresses an assumption about our social interactions, namely, that in one’s quest to find a mate, trying isn’t sexy.
Successful expert action, I argued in Chapter 7, involves effort. Nonetheless, such actions may appear effortless. Chapter 8, then, explains how this is so by examining what it means for an action to be effortless and what it is that we find valuable about aesthetically effortless actions, such as those performed by a ballet dancer. The effortlessness of expert action that we admire, I argue, is perfectly compatible with the expert exerting a great amount of effort, and the admiration itself, I suggest, is explained in part by the appearance of effortlessness as indicating a superfluity of fitness, for seeing someone perform actions as if they were effortless actions we are seeing someone perform difficult feats with what appears to be ease.

In expert bodily actions, especially those that appear effortless, it is sometimes claimed that the self is lost; that, for example, when running a marathon, self dissolves into movement. In Chapter 9, I argue that some awareness of the self is present in expert action. Providing a corrective to some of my own work with the physician Jonathan Cole, I argue that although certain types of thought, such as distress and worry, may be blissfully absent at times during expert action, thought about the movement itself and awareness of oneself thinking are nonetheless often present. I also argue that the idea that the self gets lost in expert cognitive endeavors is not correct. Rather than losing the self, I argue, one may simply experience the self as extremely focused on what matters; as such, part of the self is lost, but not, as I put it, “the better self.”

As I mentioned in the preface, my initial motivation for questioning the just-do-it principle was prompted, over ten years ago, by an objection the philosopher and avid golfer, Bob Childs, made after a talk I had given on the idea of proprioception aesthetic properties. I was arguing that proprioception—the sense by means of which we are aware of the positions and movements of our limbs—is an aesthetic sense; that is, a sense via which we come to experience aesthetic properties, such as beauty and grace. Childs wanted to know, how could a dancer on stage have the aesthetic experience of her own movement if experts do not focus on their own movements but act intuitively and automatically? If experts are to perform at their best, he commented, they cannot focus on what they are doing, and thus they cannot have the sorts of aesthetic experiences I attribute to them. Chapter 10 presents the idea that proprioception is an aesthetic sense and, at long last, explains why I reject Childs’s objection.

Because of its regimented ranking system, chess is a favorite topic of investigation for researchers interested in expert performance, and in Chapter 11, I address the role of deliberation, rationality and conceptualization in expert chess performance. Chess, an endeavor sometimes referred to as “the gymnasium of the mind,” might seem to be an obvious counterexample to the idea that expert action proceeds without thought. However, the philosopher Hubert Dreyfus has argued that because grandmaster chess players can play lightning chess (one minute per player) games so well without thinking, that the truly great moves of a chess player are neither rational nor conceptual but are, rather, directed by “forces on the board.” I argue, however, for the conceptual nature of chess perception as well as for the view that high level chess players deliberate even when actions are extremely fast, such as in playing lightning chess. This extends my work with the US National Master chess player Cory Alexander Evans, and addresses responses to this work by the cognitive scientist Fernand Gobet (2011).

Why do so many accept the just-do-it principle given that, if I am correct, it lacks support? In Chapter 12, I address and attempt to answer this question. Here, I also address the view, argued for by the philosophers Hubert Dreyfus and Sean Kelly, that the key to living a meaningful life is tied up with just-doing-it, or, as they put it, it is when we are “taken over by the situation,” that life “really shines and matters most.” As I argue, if living a meaningful life includes developing one’s potential, what Immanuel Kant spoke of in the *Groundwork for the Metaphysics of Morals* as our duty to cultivate our “predispositions to greater perfection,” a duty he saw as often involving a struggle, then the idea that the expert should stand back and effortlessly let it happen just isn’t going to do it. And in this chapter, I also briefly address the question of whether thinking interferes with optimal sexual performance.

Skipping right along

Finally, although I would recommend reading each chapter in order (as well as savoring every single word and leaving glowing comments at your favorite online bookstore site) each chapter can, more or less, stand on its own, so if you are in a bit of a rush—and frankly who isn’t these days—you should feel free to skip right to the chapters that are of the most interest to you. Of course, this point may be unnecessary since those who are in a rush have likely skipped over this introduction. Nevertheless, whichever way you read the book, you are bound to find parts with which you disagree, and I would be happy to hear your criticism—privately, of course. But enough preliminaries: on with the show.

1. “Don’t think, dear; just do” and other manifestations of the Just-do-it principle

A centipede was happy quite, until a toad in fun
Said, “Pray, which leg comes after which?”
This raised his doubts to such a pitch
He fell distracted in the ditch
Not knowing how to run.

—Mrs. Edmund Craster, “The Centipede's Dilemma” (1871)
“How can you hit and think at the same time?” is Yogi Berra’s well-known comment on baseball. Of course, since he also reportedly said, “I really didn’t say everything I said,” it is not clear that we should take his statements at face value. Nonetheless, both in academia and in the popular press, both in the psychology lab and on the baseball diamond, there is a widespread acceptance of the view that thinking about what you are doing, as you are doing it, interferes with performance. Once you have developed the ability to putt a golf ball, play an arpeggio on the piano, or parallel park, many believe that paying attention to what you are doing leads to inaccuracies, blunders, and sometimes even utter paralysis. As the great choreographer George Balanchine would say to his dancers, “Don’t think, dear, just do;” or in the words of thirteen-time PGA winner Dave Hill, “Golf is like sex. You can’t be thinking about the mechanics of the act while you are performing.” But why not? This book illustrates what is wrong with the view that thinking about what you are doing while you are doing it interferes with performance. Or in other words, it shows why, in fact, you can hit and think at the same time.

Let me refer to the idea that highly-developed skills proceed best without thinking about them, without focusing on them, and without making an effort—an idea that I hope to elucidate as the book progresses—as the “just-do-it principle.” Obviously, people use the phrase “just do it” to mean a variety of things, and some of them do not exemplify the view I aim to question. Putting aside any racier interpretations, there is “just do it already,” a venerable mandate against procrastination and making up excuses, “just do it anyway,” a useful mantra aimed at freeing one from various psychological inhibitions about what others might think, and even “just do it badly,” a guiding rule some writers follow when struggling to complete a draft, and nicely summed up by a screenwriter I know who has a sign written in large letters on his computer which reads: MAKE IT SUCK. I’d love to write a book someday about these ideas. However, this is not that book. Rather, the view I aim to question is the idea that experts perform at their best when their actions are effortless, intuitive and automatic, when they happen without deliberation, when they just flow without thought. The Olympic high diver, according this principle, pushes off from the ten-meter-high platform, rapidly torques and turns, then enters the water straight as a pin, all without thinking about what she is doing or what she is supposed to do; it is effortless, as she doesn’t even try, but rather lets her body take over. The physician, on this account, is thought to make her best diagnoses not by reasoning, but by going with her gut. More generally, experts are said to perform automatically or intuitively; their actions are simply done as opposed to being done as the result of thought and effort: they experts do not know how they do their remarkable feats, the psychologist Paul Lewicki and his research team tell us, “all they know is that they ‘just do it.’”

Indeed, for experts—whether on the green or on the stage, whether in front of the classroom or in front of the boardroom—thinking about their ongoing actions and making an effort to perform them is seen as detrimental to their execution. “It is a platitude,” the philosopher Bernard Williams (2011) tells us, “that a practical skill can, in an individual case, be destroyed by reflection on how one practices it” (p.186). This may be correct for everyday actions such as buttoning one’s shirt, however, the advocate of just-do-it, as I shall understand her, applies this idea to expert skill. For example, according to the Asian Studies scholar, Edward Singlerland (2014), “it is clear that conscious reflection has a negative effect on expert performance” (p. 226), and the psychologist Sian Bielock (2010) maintains that a body of empirical research on highly developed athletic skills supports the phenomenon of “paralysis by analysis,” telling us that “heightened attention to detail can actually mess you up” and that to prevent this, you need to “play outside your head” (p. 190). In a paper with Thomas Carr (2004), she puts it like this: “when experienced soccer players kick a ball, for example, they do not think consciously about every component involved in kicking, they ‘just do it’” (p. 310).

Of course, there is a cavernous gap between the view that experts don’t think consciously about every component of a movement and the view that experts just do it without thinking at all, and I certainly do not intend to argue against the former. No one thinks consciously about every component of his or her actions. However, I do reject the extreme view that experts, in their domain of expertise, “just do it” in the sense that during expert action the mind is a blank, that, as the philosopher Hubert Dreyfus puts it, expertise is “nonminded.” But I also reject a variety of less extreme positions that see some nonzero subset of mental processes as necessarily or even generally detrimental to expert action. For example, I reject Bielock’s view that an expert, in general, ought not to monitor their actions (in their domain of expertise) as they perform. However, I do not reject the idea that other mental processes tend to be detrimental to performance. An expert tennis player, for example, might be ill-advised to reflect on everything that has gone wrong so far during a match. But strategizing for the win might very well be useful.

Thinking, trying, and focusing on details are different types of mental processes. Moreover, public speaking, performing a high dive, and playing in a Jazz band are all very different kinds of activities, and although much of the research into expertise proceeds with at least an ultimate aim of identifying characteristics that hold true of experts across all domains, it is not clear that this ambition can succeed. Nevertheless, I shall proceed with the assumption—an assumption that is prevalent in the current scientific and philosophical literature on expertise—that there are significant commonalities across the various domains of expertise, and thus in formulating a theory of expertise, I’ll shoot for a theory of everything while being well aware that such a theory might not be possible. In this chapter, however, to give you a sense of what I am up against, let me simply bring to the fore the widespread acceptance of certain views—some contemporary, others historical; some from popular culture, others from the groves of academe—that exemplify or at least are close relatives of the idea, roughly put, that expert action proceeds better when the mind recedes, the idea I call the “just-do-it principle.”
If you walk through the aisles of your local bookstore, or browse through one of the increasingly favored online substitutes, you will come across numerous titles that, at least on first glance, advocate the view that to perform at one’s best, one must not try, but just do, and that one must proceed with a relatively blank, if not entirely empty mind. There are books on how to improve in golf, tennis, archery and parenting by taking the conscious mind out of the picture. There are books on how to achieve mastery in poker, how to cinch a business deal, or how to create high-impact web pages with nary a modicum of effort. There are books with titles such as *Unthink: Rediscover Your Creative Genius*, or *Trust your Gut: How to Overcome the Obstacles to Greater Success and Self-Fulfillment*, or *Effortless Mastery: Liberating the Master Musician Within*, as well as *Destined to Reign: The Secret to Effortless Success, Wholeness and Victorious Living*. Paeans to just-do-it are found on every shelf.

Of course, sometimes the titles, perhaps chosen by the publisher for their mass market appeal, do not fully capture the book’s content. A case in point is *Unconscious Putting: Dave Stockton’s Guide to Unlocking Your Signature Stroke*, wherein, despite Stockton’s promise to introduce “an easier, more instinctive way to putt,” readers come across suggestion after suggestion about what to think about and how to focus the mind on what matters; indeed, as one reviewer put it, “the very reading of Stockton’s book puts more stuff, not less, into the swollen, clogged chamber that is the golf brain.” And although jazz pianist Kenny Werner’s *Effortless Mastery*, emphasizes that the best playing is that which is “unobstructed by thought,” many of the thoughts that obstruct playing, he tells us, have to do with low confidence, and accordingly, he spends a great deal of time on explaining techniques that are aimed boosting confidence (would that such a book existed for philosophers!). Nevertheless, one finds a good number of volumes that come down hard on thought, books such as *The Power of Habit: Why We Do What we Do in Life and Business*, which showcases examples of actions that misfire because individuals “stop relying on their habits and start thinking too much” (p. 90), or *Incognito*, which tells of the pianist who “discovers that there is only one way she can [play]: by not thinking about it” (p. 8), or perhaps most explicitly, and here the title tells it all: *Hare Brain, Tortoise Mind: How Intelligence Increases When You Think Less.*

A significant inspiration behind a number of these books is Eugen Herrigel’s *Zen in the Art of Archery*, according to which an expert archer must become “completely empty and rid of the self” so that the release of the arrow occurs “automatically…[without] further need of the controlling or reflecting intelligence” (p. 61). It is not the archer, Herrigel tells us, who shoots the arrow, but rather, when the master archer stands before the target, “it shoots.” And riding on the coattails of the success of this book, you can find everything from *Zen and the Art of Information Security to Zen and the Art of Anything.* Regardless of whether such books have captured something correct about expertise, it seems clear that they, or at least their titles, have hit upon something that the public likes to hear.

Timothy Gallway, who wrote the bestseller *The Inner Game of Tennis*, was also influenced by Herrigel’s work, and he favorably quotes D. T. Suzuki’s introduction to *Zen in the Art of Archery*: “as soon as we reflect, deliberate, and conceptualize,” Gallway tells us, “the original unconscionability is lost and thought interferes” (p. 15). In the best expert performances, in Gallway’s words, “the mind is transcended—or at least in part rendered inoperative” (p. 7). People frequently tell me how much this book, first published in 1972, meant to them, and how it converted them to the just-do-it mentality.5

In addition to popular books chiming the praise of unreflective action at the highest level and warning against using the thinking mind to guide what is assumed to be done best without it, the just-do-it idea is also much-loved by the media, which not infrequently explain poor performance in terms of the mind interfering with the body. In the sports section of the paper, for example, one reads that the tennis player Venus Williams is off because she is “overthinking her tosses,” or that football player Mark Sanchez’s fumble is possibly a result of “trying too hard to make something happen,” and a favorite accolade of sportscasters is to say that an athlete’s playing is “simply unconscious.”

The journalist David Epstein, in a Sports Illustrated article about what makes great athletes great, writes that “thinking about an action is the sign of a novice, or a key to transforming an expert back into an amateur,” and in Jonathan Hock’s short documentary, “Play Without Thinking,” the narrator tells us that the football coach “Kiff Kingsbury wants Texas Tech to play without thinking.” Expressing what he sees as the cutting edge sports psychology, journalist, Dan Winters, in the “choking issue” of an ESPN magazine, reports that “the most advanced mental trainers now discourage thinking.” Yet again, we have: Don’t think; just do.

In the arts pages, one comes across similar sentiments. For example, I recently found the dancer Robert Swinston quoted in an article in which he expresses the view that “when you get on stage,” you need to “stop thinking and give yourself to the dance.” This is not the only vision of the road to excellence that one finds in the popular media, and Winters, himself also tells us that if you “ask 15 psychologists, psychiatrists or biologists [whether athletes enter into a zone of nonthinking] … you’ll get somewhere around three times as many answers.” Nonetheless, it is a common one. Indeed, one could even say of just-do-it, as author Belleruth Naparstek said of the concomitant notion of intuition in an Utne Reader article about the recent profusion of books that sing its praises, “it’s hot.”

Baseball, perhaps because it leaves time open for long stretches of rationcination, is seen by the media as especially beholden to the idea that thinking interferes with doing. And a particularly dramatic example of this was the media’s coverage of the tragic story of New York Yankee’s former second baseman Chuck Knoblauch, who, in the middle of a brilliant career, developed severe throwing problems, sometimes being barely able to toss the ball, other times throwing it outrageously far out of

5 There are also numerous spin-offs of Galway’s book, including *The Inner Game of Chess, The Inner Game of Trading, The Inner Game of Internet Marketing*, and so forth.
The media’s analysis of the situation was in line with the just-do-it principle: that Knoblauch was thinking too much. As Stephen Jay Gould (2000) put it, summing up the popular press’s analysis of the situation, “his conscious brain has intruded upon a bodily skill that must be honed by practice into a purely automatic and virtually infallible reflex.” David Brooks, a New York Times editorialist, sees the explanation for why just-do-it is essential to baseball like this: “Over the decades, the institution of baseball has figured out how to instruct the unconscious mind, to make it better at what it does” and “has developed a series of habits and standards of behavior to keep the conscious mind from interfering with the automatic mind.”[6] For it is, “one of those activities in which the harder you try, the worse you do.” Professional baseball players, Brooks suggests, need to proceed without effort and without thought.

Though less physically demanding than baseball, and perhaps given the length of a sound bite, less open to prolonged stretches of ratiocination, one more example of an arena in which the just-do-it principle takes hold of the popular imagination is politics. A presidential candidate’s poor showing, we are told, is due to his making “what appear to be laboriously studied moves rather than anything that comes naturally,” and a candidate’s success is due in part to his ability to exude impressive ease, “standing with a slight smile on his face and his hands resting easily in his pockets, looking on with calm amusement.”[7] Of course, as it is often assumed that one’s most heartfelt views come out naturally and without deep thought, some might see thinking during a debate, for example, as indicating that one is searching for words that will please the public. And if so, it is not thinking per-se that is decried but rather that the politician is thinking multiplicously. Nevertheless, a good dose of love of effortlessness pure and simple is apparent in political realms as well.

During this stroll (or scroll) through the aisles, besides numerous paens to the just-do-it principle, you will certainly also encounter popular books that, while they aim to teach you how to excel, do not even give it a nod: books like Ben Hogan’s Five Lessons: The Modern Fundamentals of Golf, or Michael Breed’s recent The 3-Degree Putting Solution: The Comprehensive, Scientifically Proven Guide to Better Putting, both of which unabashedly aim at stuffing more into your head. Even Gallway, though he uses phrases such as “playing outside your head,” also emphasizes how important your head is in the game, suggesting, for example, that as a tennis player, you should train in such a way so that you “get to know the feel of every inch of your stroke, every muscle in your body,” so that when you play you can be “particularly aware of certain muscles,” which is quite contrary to the incarnation of just-do-it that proclaims that experts should not focus on the fine-grained aspects of their movements.

Although there is something I relish about going against the grain, I probably wouldn’t be writing this book if it weren’t for the support I have found for my own views in works such as these, as well as autobiographical accounts of experts, such as that of the tennis player, Rafael Nadal, who in a recent book emphasizes the importance of thought in his playing. I have also found that my views resonate with much of Richard Shusterman’s work on the importance of bodily awareness in correcting habits; with work by psychologist Dave Collins, whose studies of weightlifters suggest that they use conscious control of their movements in competition; with Andres Ericsson’s theory of deliberate practice which involves focused attention and thought; with work by the psychologists Daniel Kahneman and Amos Tversky, which illustrates ways in which automatic or intuitive reactions lead us astray in certain situations; and with various scientific studies of expertise that suggest experts do think about what they are doing in action, such as research by the sports psychologist Adam Nicholl’s on how expert athletes increase their attention to what they are doing in order to cope with stress during important tournaments. However, I digress; the task of burying the just-do-it maxim is yet to come. The goal in this chapter is merely to illustrate its widespread acceptance, so let me return to it forthwith.

Zen Buddhism and Taoism

Because we live in a world where so much of what we need and want can be purchased with a tap, where a college degree is merely an easy five clicks away, and in which instant gratification is measured in nanoseconds, one might be led to believe that the just-do-it principle is especially appealing in contemporary culture. Perfection right at our fingertips seems to be our culture’s motto. But although the maxim in its myriad forms is enormously popular today, it is not merely a fad, for it has been promoted by great thinkers of the past and is argued for today by academic philosophers, psychologists, and neuroscientists, among others.[8]

I now turn to some of these contexts, beginning with a discussion of just-do-it in the Zen Buddhism and Taoism. For those of you who crave distinctions, I counsel patience; you will get a flurry of them in the next chapter; indeed, so many that I shall need to council perseverance (or at least a good strong cup of coffee).

In Harrigel’s popularized version of Zen, the best actions of the expert archer are not even done by the archer himself: rather, it shoots. The purported Zen teachings upon which Harrigel’s book is based, however, do not clearly support this view. As Yamada Shoji (2002) in his congenially titled book, The Myth of Zen in the Art of Archery, explains, Harrigel did not speak Japanese and the translator whom Harrigel typically relied on during his lessons with Awa, the master archer whose

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6 A more recent case is that of Rick Ankiel, who was a promising pitcher for the Cardinals yet fell apart during his first postseason and became unable to find the strike zone. Although he never recovered, he was, after a few years of training, he returned to the majors as an outfielder.

7 Atlantic Monthly

8 Of course, academics too are susceptible to fads.
effortless expertise, Castiglione’s effortlessness is a guise. The importance of the appearance effortlessness or “spretzatura” in the ideal courtier. However, it is described as more than as a recipe for personal action. The Italian renaissance theorist Castiglione promotes a similar concept in arguing for the ideal ritualistic ruler facing South, that is all (15.5).” And according to Singerland, the wu-wei idea is described as promoting the idea that the pinnacle of skill involves a type of effortless action captured by the Chinese concept of wu-wei, which is variously translated as the injunction to act yet avoid action, or to act yet avoid purposeful action, or conceptualized action, or false action, all of which have at least a just-do-it flavor.

The contemporary philosopher David Velleman references this idea in “The Way of the Wanton,” in which he questions whether the pinnacle of performance involves a reflective stance towards one’s own actions. According to Vellman, in performing well, one need not “keep one’s eye on an ultimate goal, or… follow the precepts of a method, or even… focus on one’s actions themselves”; rather, according to Velleman, we learn from examples of skills in the Zhuangzi that for the skilled artisan, actions just flow, that actions are not guided by the self, as it is put in the Zhuangzi, “by what is inherently so” (Ivanhoe and van Norden, 2005, p. 225). The butcher, or really the butcher’s knife, just cuts. But, without thinking, without deliberating, without even needing to try. Indeed, Mrs. Craster’s poem—the epigraph for this chapter and a humorous take on just-do-it—might have been inspired from a story in the Zhuangzi which Vellman mentions, in which a mythical one-legged beast asks a millipede how she manages to control all her legs, to which the millipede responds, “I just put my heavenly mechanism into motion. I don’t know how it works!” Vellman does not advocate that we should be like the millipede, as he sees value in thoughtful training that involves self-reflection. However, he does suggest that ultimately, the ideal action leaves reflection behind. Experts, as he sees it, “have acquired their skills through training that involved self-scrutiny, self-criticism, and self-correction…[but this capacity to reflect] is no longer exercised after they have perfected their skill” (p. 188).

Closer to Vellman’s conception of expertise, is another story from the Zhuangzi that Vellman cites for illustrating his view. This is the story of the butcher:

When I first began cutting up oxen, I did not see anything but oxen. Three years later, I couldn’t see the whole ox. And now, I encounter them with spirit and don’t look with my eyes. Sensible knowledge stops and spiritual desires proceed. (Ivanhoe and van Norden, 2005, p. 225)  

On this account, the action of the knife is not guided, not by the butcher, but, as it is put in the Zhuangzi, “by what is inherently so.” We see a sensationalized version of the butcher’s effortless action in Herrigel’s account of archery. In the same way that the butcher’s knife proceeds without the butcher visually guiding it, Awa, as Harrigel describes him, is able to hit a bull’s-eye without visually guiding his arrow. The apogee of the book occurs when, practicing in the dark, Awa hits a bull’s eye and then his second shot cracks thenock of the first arrow. According to Harrigel, Awa’s explanation of this amazing feat is that “it did not come from me, it was not me who made the hit.”

9 And the idea in a less extreme form seems to be present in various less esoteric texts as well. See Kyudo: The Essence and Practice of Japanese Archery By Hideharu Onuma, Dan De Prospero, Jackie De Prospero in which they explain the goal in Japanese archery as “not the elimination of thought…[but rather] the elimination of the remnant of thought: that which remains when thought is divorced from action;” also Edward Slingerland’s Effortless Action (2007).

10 Since there is little mention of wu-wei in the “inner chapters,” wherein one finds the examples Vellman cites, it is not clear that such examples should be meant to illustrate it. The concept itself seems to have originated in the Confucius’ wherein the ideal ritualistic ruler is described as one who need not speak, but merely “made himself reverent and took his [ritual] position facing South, that is all (15.5).” And according to Singerland, the wu-wei is seen more as an ideal in social-political contexts than as a recipe for personal action. The Italian renaissance theorist Castiglione promotes a similar concept in arguing for the importance of the appearance effortlessess or “sprezatura” in the ideal courtier. However, in contrast to Vellman’s idea of effortless expertise, Castiglione’s effortlessness is a guise.
Expertise as openness to divine inspiration

Although Eastern ideas have inspired many in the West to see expert action as proceeding without thought and effort, just-do-it has a distinct lineage in Western thought, as seen, for example, the ancient Greek conception of poets as conduits for the words of the gods. It was not a poet’s thought and effort that gave birth to the great story or turn of phrase. Rather, poets were conceived as merely expressing what came to them from above. In the opening lines of the Odyssey, Homer proclaims, “Sing in me, Muse, and through me tell the story,” he is, in line with this conception of poetic inspiration, giving credit where he sees credit is due.11

Plato also saw poetry and the sort of poetic interpretation performed by rhapsodes (who were individuals who recited and sometimes interpreted poetry) as being divinely inspired, yet he thought that such inspiration was a form of madness and ought to be guarded against. In the dialogue “Ion,” Socrates claims that “beautiful poems are not human, not even from human beings, but are divine and are from gods; that poets are nothing but representatives of the gods, possessed by whoever possesses them.” Peter Kivy calls this “Plato’s non-theory of poetic creation,” according to which, as he puts it, “poetry happens to you; you don’t do it.”12 On this view, he says, “bright ideas are not generated by acts of will through the application of some ‘method,’ bright ideas just ‘happen’ to people…”[rather like an infectious disease one succumbs to] (p. 12). This is an extreme position. It does not say merely that the poets do not engage in certain types of thoughts when creating poetry, but that in a sense they do not do anything.

Since Plato decried rather than exalted such creation, he is not advocating the normative view that experts ought to just let it happen: yes, expert poets, according to Plato, let the ideas come to them, yet this is not what they, or anyone, should do. However, ignoring the irony of Socrates’s praises, the Romantic poet, Percy Shelley, embraces just-do-it wholeheartedly, interpreting the Ion as a tribute to otherworldly inspiration.13 In Shelley’s own translation of the dialogue, he has Socrates tell us that a poet is,

a thing ethereally light, winged, and sacred, nor can he compose anything worth calling poetry until he becomes inspired, and, as it were, mad, or whilst any reason remains in him. For whilst a man retains any portion of the thing called reason, he is utterly incompetent to produce poetry or to vaticinate. (534b3-6)

Interpreting “genius” as expertise, the idea of the expert’s actions as originating not from the self but from some external force, is well summed up by the American Romantic poet James Russell Lowell’s oft-quoted comment, “talent is that which is in a man’s power: genius is that in whose power a man is.”14

The idea of divine inspiration as a conduit for great actions is brought into the twenty-first century by the contemporary philosophers Hubert Dreyfus and Sean Dorrance Kelly who, in their book All Things Shining: Reading the Western Classics to find Meaning in a Secular Age, argue that the most important lesson we can learn from the Ancient Greeks, as they are depicted by Homer, is that meaningful lives are in part the result of individuals performing great actions for which, in the relevant sense, they are not fully responsible. Not going back to a polytheistic picture, nor even, at least explicitly, a theistic one, they argue in a similarly themed article, “Saving the Sacred from the Axial Revolution,” that Homer shows us that “human beings are at their best when they hold themselves open to being called by the gods.” And Kelly and Dreyfus think that recognizing the importance of this phenomenon in Homer, in the idea of being open to the call of the gods, will help us recognize what is important about expert action today: “When human beings are acting at their best—in great feats of athleticism or in the composition of the finest poetry, in the activities of life in the everyday world or heroism on the battlefield,” Kelly and Dreyfus tell us, they often feel as if their actions were “drawn out of them, as if they were called to act in the way they did.”15 In their book, they describe the force that draws action out of someone in this particular way as the “whoosh,”16 (which is, interestingly enough, how one of the onomatopoetic descriptors of Butcher Dong’s movements is sometimes translated (Singerland p. 29)).

Dreyfus and Kelly also draw inspiration from the late 19th–early 20th century phenomenologist, Maurice Merleau-Ponty, who describes the “magical” efficacy of our unreflective bodily actions—actions which are such that, as Merleau-Ponty sees it, if we were to focus on them, they would degenerate into the absurd—as well as from Merleau-Ponty’s contemporary, the German philosopher Martin Heidegger, who theorizes that when a lecturer enters a familiar classroom, the lecturer experiences neither the doorknob nor the seats; such features of the room, for the lecturer, are “completely unobtrusive and unthought”(p. 164).17 Heidegger’s views, inasmuch as they are about everyday actions, do not fall under the scope of what I am calling the just-do-it.

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11 Apparently accepting this view of inspiration, Kant, in the third Critique, tells us that Homer cannot teach his method of composition since he does not know how his ideas come into being. Genius, Kant argues, cannot be taught, conceptualized or explain by the genius himself; they come to Homer, on this view, already fully formed from elsewhere. Critique of the power of judgment (section 47). And perhaps insert into text
12 From his book The Possessor and the Possessed: Handel, Mozart, Beethoven and the Idea of Musical Genius. Kivy also tells us, “of course it is a nice question where and how the gods get the ideas they impart to the poets and rhapsodes, but perhaps to consider this is to consider too curiously.”
15 “Axial Revolution”
16 Not to be confused with another aspect of the Nike trademark, the swirly line, the company called the “swoosh.”
17 Phenomenology of perception, p. 164.
principle, since I understand this as a principle about expert action. Merleau-Ponty, however, appears to hold more of the type of just-do-it that I reject, for he extends his theory to cover actions such as that of an expert soccer player for whom “the soccer field…is pervaded by lines of force…[and that] the player becomes one with [the field]…[and] at this moment consciousness is nothing but the dialectic of milieu and action.” The conscious mind, he seems to be saying, dissolves into a relation with the environment, which, like Homer’s gods, calls forth actions. In a recent debate with the philosopher John McDowell, Dreyfus states his position like this: “for an expert to remain in flow and so perform at his best, he must let himself be merged into the field of forces and all monitoring must stop” (p. 31).

McDowell, objects to such a picture, for he thinks that all expert action exemplifies rationality in action. Yet even McDowell holds a version of just-do-it, for, according to him, although an expert’s actions are guided by reasons—these reasons are not on the forefront of an expert’s mind as she proceeds; the idea that an expert “deliberates about what to do and acts in the light of the result,” McDowell tells us, “should be rejected.”

### Automaticity

In thinking about how to explain expert action, the principle of inference to the best explanation does not typically lead psychologists to divine inspiration. Rather, many psychologists see our ability to act automatically as the key to understanding expertise. For example, Fitts and Posner, in their (1967) Ur-text on the psychology of skilled performance, tell us that “if the attention of [an expert] golfer is called to his muscle movements before an important putt, he may find it unusually difficult to attain his natural swing” (p.15). This is because, as they see it, expert performance is automatic or “autonomous,” meaning that it does not require control by the conscious mind. On their view, we develop expertise by passing through three phases. First, in what they dub “the cognitive phase,” one acquires some mastery over the movement. And in the final, or “autonomous phase,” one moves automatically and without conscious focus on the movement, or Yarrow and colleagues put it in their review article of research into neural processes that support high performance in sport, “highly practiced skills become automatic, so performance may actually be damaged by introspection, which is characteristic of an earlier, consciously-mediated stage.”

Fitts and Posner’s account of skill acquisition lines up with the story of the butcher. In the first stage, the butcher needs to think about where to draw his knife; three years later he develops a degree of mastery and the divisions become apparent to him; and in the final stage, the oxen are encountered with spirit, where the notion of spirit is opposed to conscious visual perception and deliberate action. Dreyfus (2004), in work with his brother, expresses a similar view, employing the term “awareness”: “[t]he expert driver, he tells us, “shifts gears when appropriate with no awareness of his acts. On the off-ramp his foot simply lifts off the accelerator. What must be done, simply is done” (p. 253)

The ability to verbalize what you are thinking about is often thought to indicate that an action is not automatic, but rather is being guided by conscious thought. Thus, Fitts and Posner also castigate verbalization during performance: “verbalization,” they tell us, “may interfere with a highly developed skill,” which is intended to mean not merely that this is possible, but that their research indicates that this is so, for on their view, the best expert performance typically occurs without verbal thoughts about the action. Going further, Flegal and Anderson (2008) suggest that even after the deed, explaining a skilled performance is counterproductive; turning an old motto on its head, they conclude that “those who teach, can’t do.” Whether the focus is on the mechanics of the movement or something at a higher level, one gets the feeling, in reading the literature on this topic, that thinking, at least consciously, is something we’d be better off without. Fitts and Posner also suggest that mere conscious awareness of the bodily movements involved in expert action can have deleterious consequences. And this attention does not seem necessarily expressible in words: expert dancers, they tell us, “ignore kinesthetic information and visual information about their movements,” and if an expert golfer thinks about, say, stabilizing her torso muscles during a swing, things may go awry (p. 16). Such thoughts about stabilizing one’s torso muscles, and even more so, such awareness of kinesthetic and visual information about movements, might not be declarative, yet according to Fitts and Posner, they are deleterious nonetheless.

While Fitts and Posner’s view that skill at the highest level is automatic is based in a large part on “qualitative data” – that is, data from observations and interviews with experts—it has inspired numerous researchers to devise experimental tests of the theory. For example, in investigating the degree to which expert skill proceeds automatically, Robert Gray (2004), Sian Beilock et al. (2004, 2002), Ford, Hodges, and Williams (2005), and Leavitt (1979) have looked at what happens when athletes perform their skill while directing their attention either to a specific aspect of their movement or to an extraneous task. Such experiments are seen as supporting the just-do-it principle, since experts perform worse in the skill-focused condition than in the extraneous-task condition. Moreover, Beilock (2004) and R. Gray (2004) found that the skill-focused condition produced worse results than having the experts perform as they usually would without an additional task (single-task condition).

The resulting view of skill acquisition is widely, though not universally, held among psychologists who work on expertise. Summing up the received view on this final stage of skill acquisition, Gabriele Wulf (2007) tells us, “there is little disagreement that once an individual has reached the autonomous stage, in which movements are usually controlled

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18 Following in Fitts and Posner’s footsteps, Anderson (1982, 83, 93 and Anderson and Lebiere 1998) proposes that skill acquisition progresses from a “declarative phase,” in which performance is guided in a step-by-step fashion by information about skill execution held in working memory to a “procedural phase,” in which performance, rather than being guided in a step-by-step fashion, is thought to occur automatically.
automatically, paying attention to skill execution is typically detrimental” (p. 6). In Wulf’s (2007) view, research on skill “clearly show[s] that if experienced individuals direct their attention to the details of skill execution, the result is almost certainly a decrement in performance” (p. 23). Sian Beilock and colleagues have a similar perspective on the psychology literature on skill: “Current theories of skill acquisition and automaticity suggest,” they tell us, “that well learned skill execution is “automated”—controlled by procedural knowledge that requires little on-line attention and control and operates mainly outside of working memory.” Some of this research is not on what I would refer to as expert-level performance; however, the results are often seen to generalize. As Beilock and colleagues claim, “this pattern [of skill development] suggests that whereas novel or less practiced performance may demand extensive attentional resources for successful implementation, such explicit monitoring and control may not be necessary at high levels of skill execution.”

### Tapping the Unconscious

Although some versions of just-do-it—such as the idea of “it shoots,” the Ancient Greek idea of divine inspiration[,] and Dreyfus and Kelly’s “woosh”—are “just let it happen” views, wherein the expert’s mind is entirely absent in peak performance and expert action is guided by external forces, less extreme just-do-it views maintain that although experts’ best actions involve thought, they do not involve conscious thought. Sometimes the specific type of consciousness inveighed upon is consciousness of the details—or, in line with Dave Hill’s analogy between golf and sex, mechanics of the act. Others disparage the conscious mind more generally, a view exemplified by the sportscasters words of praise: “She’s playing unconscious.” And still others do not so much disparage conscious thought, but elevate the unconscious, as Goethe famously did. Goethe claims, for example, to have written his novella The Sorrows of Young Werther “unconsciously” and “like a sleepwalker.” In a letter he wrote to Schiller, he sums up his view: “What the genius, as a genius, does, happens unconsciously,” and that “all our most sincere striving/succeeds only in the unconscious moment.” Such a view is, no doubt, enticing.

Proponents of Goethe’s brand of just-do-it sometimes support the view that it is the effortless motions of the unconscious mind that are responsible for works of true genius by citing various anecdotes, such as the nineteenth-century mathematician Henri Poincaré’s brilliant idea arriving unbidden—“at the moment I put my foot on the step the idea came to me, without anything in my former thoughts seeming to have paved the way for it”—or Kekule’s discovery of the structure of the benzene molecule by dreaming of a snake biting its tale, or A. E. Housman writing poems effortlessly—“two of the stanzas came into my head, just as they were printed while I was crossing the corner of Hampstead Heath between Spaniard’s Inn and the footpath to Temple Fortune. A third came with a little coaxing after tea.” Such claims are frequently cited as evidence of the miraculous workings of the unconscious.

The physician, zoologist and physiologist W. B. Carpenter introduced the term “unconscious cerebration” to describe this process, telling us that “[t]he act of ‘unconscious cerebration’...is far more likely to lead us to good and true results than any continual discussion and argumentation,” and that the mind has obviously worked more clearly and successfully in this automatic condition, when let entirely to itself, than when we have been cudgeling our brains, so to speak, to get the solution.” Henry James (1870) wrote of the “unconscious cerebration of sleep,” and H. Amel, in his famous Journal, claimed that “the wise part of us, then, is that which is unconscious of itself, and what is most reasonable in man are those elements in him which do not reason.”

To be sure, as many of these stories of ideas arriving fully formed are at least exaggerated and Goethe himself later turned away from the extreme views expressed in his youth, claiming that a musical composition arises “through practice, teaching, reflection, success, failure, furtherance and resistance, and again and again reflection.” Indeed, some have seen the Romantic veneration of the unconscious as a “pathology” with [the—describe who he is] Schiller at one point commenting that “classicism is health, romanticism is sickness” and emphasizing that unconscious inspiration must also be “accompanied by self-reflection and the capacity to bring such emotions within clear, formal boundaries.” And modernist poets made a strong break with the Romantic tradition, with Paul Valrey explaining in his essay “Poetry and Abstract Art” that a poet must “struggle against irregular moments, chance association, weak attention, and outer distractions.” To create a poem, he goes on, requires us “to

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21 Quoted in article by Paul Bishop “Unconscious from Storm and Stress to Weimarclassicism” (Goethe, at least here, seems to advocate a version of just-do-it wherein the conscious mind is not in any way responsible for optimal expert performance. However, interestingly enough, Goethe also says the way a musical composition might arises is, “through practice, teaching, reflection, success, failure, furtherance and resistance, and again and again reflection.” Letters quoted in Whyte p. 128.
23 (Carpenter’s principles of mental physiology 1874
24 See also Maudsley who summarized his ideas in physiology and pathologies of the mind (1867), The most important part of mental activity, the essential processes on which thinking depends, is unconscious mental activity
25 Viktor E. Frankl’s Man’s Search For Meaning, p.30
26 Becker-Cantarino, ed German literature of the 18th century: the Enlightenment and Sensibility esp, the contributions by Becker-Cantarino, Kai Hammermeister, and Rober Holub (See also, Literature of the Sturm und Drang, ed David Hill.)
recognize in ourselves and to choose in ourselves what deserves to be plucked from the very instant and carefully used.” Nonetheless, something very much like the Romantic adoration of the unconscious is found today in the psychology of skilled performance, wherein some researchers claim that consciously pondering what to do hinders performance. For example, the psychologists, Flegal and Anderson claim that “[r]eflecting consciously on what one knows about a skill often undermines its proper execution” and accordingly advise the expert to leave the conscious mind by the wayside. The psychologist Baumeister, tells us that expert skills cannot be controlled consciously, because “consciousness does not contain the knowledge of these skills.” (p. 610) And Toner and Moran (2011) suggest that “a practical implication of the findings from our experiments is that it would appear prudent for skilled performers to avoid consciously attending to their movement during competitive performance.”

The contemporary take on the Romantic view of the unconscious, which sees the unconscious as intelligent and sometimes more intelligent than the conscious mind, is also brought out well by Stephen J. Gould, in his editorial on the press coverage of Knoblauch’s throwing problems. Knoblauch, if you recall, was a Gold Glove baseball player who suddenly lost his ability to execute easy plays. Gould (2000) criticizes the press for expressing the idea that Knoblauch’s distress arises from “the imposition of . . . mind upon matter,” telling us that this “represents the worst, and most philistine, of mischaracterizations.” But Gould does not say this because he thinks that conscious attention to movement is compatible with highly skilled peak performance. Rather he thinks that, for Knoblauch, an unwanted, conscious mentality is interfering with a wanted unconscious mentality. And this unconscious mentality, according to Gould, reveals that high-level athletic performance is a laudable intellectual endeavor and not merely brute bodily movement. As he describes it, “we encounter mentality in either case, not body against mind.”

**Intuition**

Closely connected to both the idea that expert performance proceeds best without conscious interference and the idea that the expert’s actions are automatic is the idea that expert action is intuitive, that, as Dreyfus tells us, novices “make judgments using strict rules and features, but that with talent and a great deal of involved experience, the beginner develops into an expert who sees intuitively what to do without applying rules and making judgments at all” (2004, p. 253). For Dreyfus and Kelly, who take the mind out of the picture entirely, this intuition is not even an unconscious process, for the unconscious is, after all, mental. However, for others, intuitive insight is a particular kind of unconscious process. It is not the slow-moving unconscious imbued with the type of creative intelligence that Goethe imparts to it. Rather, it is more like what Daniel Kahneman refers to as system 1 thinking, which is fast and automatic. And such intuition is often seen as not rational. As Dreyfus puts it, experts proceed without attention to what they are doing; they do not calculate or compare alternatives but rather act spontaneously and without deliberation (see p. 28 and passim in Dreyfus and Dreyfus 1986).

Though his focus is primarily on everyday types of decisions, Kahneman has written persuasively about how our intuitions mislead us and that at least at times better decisions occur when we employ more of our rational minds. However, there is also a large body of literature about the superiority of intuitive ways of thinking over rational ones and about the superiority of intuitive action over thoughtful, deliberate action. The psychologist Gary Klein, for example, has argued that various type of experts, such as experienced fire-fighters, are able to make accurate snap judgments. And In line with this view, it is sometimes said, perhaps almost exclusively by philosophers, that professional chicken sexers have an uncanny ability to determine the sex of day-old chicks at a glance with 99 percent accuracy.28

**Natural Talent**

Some hold the view that experts perform effortlessly and without much thought because their abilities are natural. The archetypical expression of this is found in a popular conception of the genius of Mozart, who was often thought to compose effortlessly: “the whole composition, though it be long, stands almost finished and complete in my mind,” he claims in a well-known letter of 1815.

There is no doubt that Mozart had incredible abilities, and, unlike Beethoven, whose scores are filled with revisions, his scores do not seem to have gone through many written versions. Yet the picture of Mozart as having composed entirely effortlessly is probably exaggerated: the 1815 letter is now thought to be a forgery and it is likely that Mozart’s father played a significant role in writing Mozart’s early work, and his first symphony is attributed entirely to the father.29 However, the idea that Mozart composed without effort is extremely powerful, and it is the forged line perhaps via Aleksandr Pushkin’s *Mozart and Salieri*, which took it as veridical, that likely in part inspired the well-received movie and eponymous play *Amadeus*, written by Peter Shaffer, wherein Mozart needed only to write out the music handed down to him by God. As New York Times critic Vincent Canby put it, Shaffer’s film depicts genius “in a fashion that is simultaneously illuminating, moving and just.”

The philosopher Steven Schiffer (2002) seems to accept this picture of Mozart’s effortless natural ability. In arguing against Jason Stanley’s view that skill necessarily involves propositional knowledge—that, for example, knowing how to…[ride

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27 It might seem that Dijksterhuis et al. 2006 research which suggests that in kinds of certain decisions, it is best to let the unconscious mind work for a period of time. But I have no objection to leaving room for unconscious cerebration. Also, The subjects making the decisions in these studies are not experts in the domain about which they are making their decisions.

28 Almost exclusively but not entirely: “But don’t ask them how they do it,” the psychologist David Myers says, “the sex difference as any chicken sexer can tell you, is too subtle to explain.”

a bicycle] requires at least knowing that you need to get on the bike to start going—he writes that even though “Mozart knew how …to write a symphony at the age of 8” he did not explain how he did so (p. 201) Stanley, at least for the sake of argument, accepts this claim and explains its consistency with his account. But not only is the reason to question whether Mozart did fully know how to write a symphony at age eight, there is also good reason think that eight-year-olds can explain quite a bit—my seven-year-old daughter plays chess, and even though she’s no Mozart, she can, for example, recount a game she has just played, explain the basic principles of the four nights opening, the concept of checkmate, a backrow checkmate, castling, en passant, the concept of a fair trade, a fork, a pin, a skewer and so forth. Schiffer, however, takes his example to show that Mozart had this skill, yet that he had no knowledge of how he was able to do what he did. He just did it.

Can so many be mistaken?

When one comes across an idea that appears in such a wide range of cultures, time periods and intellectual traditions, it is hard not to conclude that the explanation for this agreement is that these diverse strands of thought are converging on the truth. This book is aimed at trying to shake you of that conviction.

So far, I have focused primarily on illustrating the popularity of just-do-it. In the next two chapters, I aim to arrive at a better idea of the issue under consideration. In Chapter 2, I shall try to clarify the just-do-it idea which we have encountered in so many different guises in this chapter. And then in Chapter 3, I shall tackle the tricky question of what it means to be an expert. In subsequent chapters, the shovel comes out in earnest as I attempt to bury some of the views we have just encountered and advance what I call “the expert cogito” which states that effort, thought, bodily awareness and other such psychological factors are often integral to the smooth, apparently effortless execution of expert-level skills. Contrary to the idea that expert action proceeds automatically, I shall argue that experts in fact present a model of Socratic rationality, exemplifying both conceptually grounded knowledge of their actions and self-awareness.