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**IN SEARCH OF THE RIDE:
CYCLING AS IMPROVISATIONAL BEHAVIOR**

A Thesis in

Kinesiology

by

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Abstract

In his book, *Ways of the Hand*, David Sudnow describes the journey he encounters en route to becoming skilled at performing improvisational jazz music. His project is one of first-person description – not explanation from third-person reflection. He examines the problems, challenges, and hurdles posed by the task of sustaining the orderly activity of improvisation. Through his work, Sudnow offers a study of the human body engaged in a complex activity.

The purpose of this study is to use Sudnow's methodology to examine the journey one encounters when learning to ride a bike. Specifically, this study seeks to explore the nature of improvisation and to determine what promise it holds for informing us about sports in general and cycling in particular. What are the benchmarks that lead to the experiencing of improvisational behavior in the practices of jazz music and modern dance? Are these benchmarks analogous to those encountered when learning to ride a bike for long-distance and endurance?

How one learns to ride a bike has defied accurate description since the bike's invention. Those who have attempted to describe the complex intermingling and negotiation of forces necessary to keep the rider and machine upright and moving forward have rarely succeeded in their quest. The skill seems to be too complicated to be described in words. Riding a bike has long been described as a “difficult to explain yet easy to perform” phenomenon. This characterization has also been attributed to the performances of jazz music and modern dance. In fact, many musicians and artists have likened the ability to create improvised behavior to the skill of riding a bike. This study

offers a description of this “learning to ride a bike” phenomenon by providing a closer examination of human performance in improvisational activities.

This study begins with a review of Michael Polanyi’s work *Meaning*. This text focuses on the acquisition of skills and their use in practical activities. Polanyi’s characterization of tacit and focal awareness provides important structure to this dissertation. A review of the jazz music and modern dance literature then follows. From this literature, the benchmarks one may experience on the way to becoming a skilled improviser are revealed. Then, a review of the first-person cycling literature is considered followed by an account of the author’s own experiences in learning to ride a bike for long-distance and endurance. Together, these cycling perspectives describe a pathway one may experience when learning to ride a bike for long-distance and endurance. The improvisation and cycling pathways are then compared to determine similarities and differences.

This comparison reveals that riding a bike can be roughly analogous to improvisation when viewed as one of Polanyi’s “technical inventions.” However, it is further revealed that cycling can be more forcefully analogous to improvisational conduct if riding a bike takes on Polanyi’s “artistic frame” revealing mythic storylines of “flowing creativity.”

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Chapter One

Introduction

A View from the Saddle

I am not a cyclist. At least that appears to be how the peloton of professional cyclists would describe me. True cyclists, from the peloton's perspective, would only be those who ride a bike purposefully, focused on the goals of going faster, for a longer distance, and finishing in a shorter amount of time than other cyclists. Lance Armstrong explains this perspective. "I'd never ridden just to ride in the past – there had to be a purpose behind it, a race or a training program. Before [my fight with cancer] I wouldn't even consider riding for just thirty minutes or an hour. Real cyclists don't even take the bike out of the garage if it's only going to be an hour-long ride."¹ A Dutch road racer penned similar feelings. "I don't race because I wanted to lose weight, because turning thirty horrified me, because I was dissatisfied with café life, because I wanted to write this book, or because of anything else at all, but purely and simply because it's road racing." The Dutchman finalized his perspective by adding that his one goal of riding a bike was to be in the lead group at the finish of every race. To always "sit on that last wheel" and be in a position to win.²

A review of modern cycling journals, such as *VeloNews* and *Bicycling Magazine*, provides monthly confirmation of this sentiment. Real cyclists seek out ways to fulfill a purpose that usually centers on winning races or in some way comparing how they perform to how some other cyclist performs. Non-cyclists will not be racers and make no such comparisons, a lifestyle that one cyclist described as so "empty" that it's "shocking."³

Real cyclists will be “gear-heads” fanatically dedicated to the selection of their bicycle frames, derailleurs, gear ratios, and tubular tires ultimately exemplifying the ironic moniker of “owning a car and having a bike payment.” In contrast, non-cyclists know very little of the technology available, most likely looking at the sales price before the machine’s composition, and settling for any affordable department store model.

Real cyclists will be computational slaves continuously striving to find their most efficient cadence and gear ratio needed to produce superior wattage and power. In addition, they adhere to strict nutritional plans, monitoring their caloric intake in order to limit their weight gain without dampening their performance. Non-cyclists occasionally hop on their ten-speeds or mountain bikes, use only the lowest gears, and give no consideration to their pre-ride meal.

Real cyclists wear color-coordinated spandex apparel on every ride, right down to their socks, and shave their legs. Non-cyclists may wear a variety of clothing and erroneously believe that shaving the legs aids in aerodynamics. Real cyclists know that this ritual eases the removal of gravel ground into the skin during crashes and simplifies the cleaning and bandaging of the wounds.⁴

Further, and often as a badge of honor, true cyclists don “the ultimate outfit” – a tan that darkens the skin only on the arms from the middle of the bicep to the wrist, only on the legs from the middle of the thigh to the sock line, and on the face and back of the neck. All other areas of skin will remain distinctly lighter to the horror of the non-cycling “bare breast and string bikini crowd.”⁵

Above all, real cyclists fanatically dedicate themselves to rigid, purposeful training programs performed every day in any kind of weather. Lance Armstrong readily

admits that he rides his bike almost every day, even in the off-season, in rain, snow, sleet, hail, or extreme heat. He further expects that his opponents and those professionals on his team should do the same.⁶ On particularly inclement days, Armstrong will demand of his riding partners, “You ridin’, or you hidin’? [sic].”⁷ Armstrong and his compatriots found pedaling in the upper echelon of the cycling peloton would most likely choose “ridin’” in these situations. I, like most non-cyclists, would most likely be “hidin’” and by fleeing in such a manner have largely eliminated myself from ever being identified as a real cyclist from the peloton’s narrow perspective.

While I may not be a cyclist, I am far from what the peloton would call a “pedestrian.” I do ride a bike. Not only do I ride *a* bike, but I ride *my bike* and I ride it *a lot*. In fact, several years ago I abandoned the non-cycling world.⁸ I no longer find pleasure in running for fitness, escape, or transcendence, having discovered that I could obtain these more readily on my bike.

I no longer ride an old, out-dated Schwinn. Traded up recently to a white and blue 2004 Trek 1000 road bike identified by the manufacturer as “recreational” and by *Bicycling Magazine* as “beginner.”⁹ Even with these labels affixed by the cycling industry, my bike is more technologically advanced than most department store models but remains a far cry from anything pedaled in the peloton.¹⁰

I no longer regard multicolored spandex and padded bike shorts weird and of another culture. Instead, I find myself requesting such fashion on birthday and Christmas wish-lists. I regularly search for deals on this gear through on-line clearance outlets.

I am unapologetic at the city pool where I proudly display my “cyclist’s tan.”

I often ride my bike simply for pleasure with my wife and daughter, lazily pedaling down bike-paths and back roads, but I have also purchased and regularly use a heart rate monitor to keep track of my intensity. I have a computer on my bike to record speed, time, and distance comparing such statistics to my personal efforts on past rides.

I no longer perceive ten, twenty, or even thirty miles as a great distance to pedal and only begin to think of packing additional food and water when the ride tops forty miles. Nor do I shirk from spending two, three, or four hours in the saddle on any given outing. And while I am usually unwilling to venture out on my bike in extremely hot or cold temperatures or in rain, snow, or dense fog, I do attempt to ride my bike four or five times per week in season. Out of season, I try to follow a similar schedule by riding on an indoor trainer.

Clearly I fall somewhere between the peloton and the pedestrian's perspectives. One of the most profound indicators of this position is my inability to communicate effectively with either group. When something breaks on my bike, I remain apprehensive about fixing it myself. When I take it to the bike shop, I still have trouble communicating the problem to the bike mechanics. I find myself fumbling over the proper names, the brands, and the quality of the parts I desire. I am getting better, however, and while I would still not consider myself a "gear-head," I am starting to speak more intelligently to other cyclists in the language they can understand. Unfortunately, the more poetic descriptions of my rides, the narratives of my lived-experiences while pedaling through the world, fall largely on the real cyclists' deaf ears. From their perspectives, these stories carry no practical content for improving performance.

Similarly, my growing ability and frequency in using “Lance-speak” (as one of my pedestrian co-workers calls it) has started to create communication barriers between myself and some of my non-cycling friends. Pedestrians often show little comprehension or interest in the descriptions of my miles and minutes of daily effort in the saddle. Most of the time they cannot get past their fascination with the number of miles I ride per day (about 30), the amount of time it takes me to ride these miles (about two hours), or how my butt does not get sore in doing so. At times, I am so excited to talk about a particularly moving outing or an achievement of a specific performance goal that I beg my non-cycling friends to “give me just five minutes to tell you about my ride.” Halfway into my narrative, however, I find myself staring at glazed-over, inattentive eyes.

Whether talking to gear-heads or pedestrians, I often find myself feeling like the founder of the Quaker religion, George Fox, when he lamented, “...there was none upon the earth that could speak to my condition. I had not fellowship with any people, priests, nor professors, nor any sort of separated people.”¹¹ Truly, my position echoes that of one cyclist’s characterization of his own son. “My son isn’t a cyclist,” the father laments, “but he rides a bike very well.”¹²

Yet, I am not alone. Estimates of the number of bicycles on the planet approach one billion machines. Given the relatively small amount of exposure the professional peloton receives compared to other sporting events (especially outside of Europe), it can be assumed that true cyclists constitute only a small percentage of that global fleet.¹³ The remaining battalions of bike owners would arguably be riding their machines for cheap and efficient transportation or for recreation, exercise, adventure, and companionship rather than the competitive and purposeful riding found within the peloton.

Consequently, “cyclists” like me – intermediaries between the pedestrian and the cycling world – greatly outnumber “real cyclists” like Lance Armstrong.

Learning to Ride a Bike

Armstrong, myself, and the other billion bike riders on the planet, however, have at least one thing in common. At some point in our lives, we all sat down on an oddly shaped seat, elevated ourselves about a yard off the ground on two aligned wheels and pushed off into a new experience. Simply, we all learned to ride a bike, an activity that a French recreational cyclist described as “learning to speak a language” beyond a “series of techniques” that portrays a “coherent universe in which one lives or wants to live.”¹⁴

All past and present riders lived through these early stages of learning to ride a bike. Shortly after the modern bicycle’s invention in the 1800s, learning this complex skill moved some so intensely that they enthusiastically penned their experiences. Mark Twain first characterized his pedestrian body as being “steeped in ignorance” and later described his first attempts at the cycling as overcoming “the wabbles.”¹⁵ Yet his trials of learning to ride the bike did not deter him from recommending similar adventure to others. “Get a bicycle,” Twain advocates. “You will not regret it, if you live.”¹⁶

During the same time period, social reformer Frances Willard described the “thirteen hundred minutes” of effort that made her “master of the most remarkable, ingenious, and inspiring motor ever yet devised upon the planet.”¹⁷ Of course, her understanding of “mastering” the bicycle only included the ability to mount the bike and start off alone. Yet the vividness of her recollection highlights the impact the new

experience had on her life. She described it as “entering a new realm as truly as if she were a child newly born into the world.”¹⁸

Modern day bike riders share equally enthusiastic experiences. French author and cyclist Paul Fournel’s recently characterized his first childhood experiences on two wheels as a miracle. “For days you tremble, you hesitate . . . you look for that magic moment that makes the duo stay up when it should go down,” recalls Fournel. “And then one morning . . . the miracle had taken place. I was riding. I never wanted to put my feet back down for fear that the miracle wouldn’t happen again.”¹⁹ This experience profoundly affects so many people, that the adage, “It’s just like riding a bike” is often used to describe activities that become unforgettable and embodied. This universal experience of learning to ride a bike appears to unite all bike riders, from beginner to profession, with common sensations and understandings.

Yet learning to ride a bike as described by Twain, Willard, Fournel and others has been argued by some to be an innate or natural skill not “learned” by humans. Bill Strickland, editor of *The Quotable Cyclist* and executive editor of *Bicycling Magazine*, claims that learning to ride a bicycle is only a rediscovery of flight. He compares cycling to “the unstrained weightlessness we knew in the womb, the easy, lofting movements and sweeping curves possible with a subtle tilt of our bodies.” Strickland points to the vast number of forces and variables necessary to keep a bicycle upright. Scientists, the editor claims, do not have “enough mathematical formulas to explain how a six-year-old child rides a bike.” Strickland’s then adds his own simple and unscientific explanation of a child’s ability to ride. “The bicycle ride is something we remember from before we had memory,” he claims, further suggesting that riding a bike is an embodied ability in

humans before we are even born. “We already know how to ride bikes. We just need to remember it.”²⁰

A Teacher’s Dilemma

The debate whether cycling skills and tendencies are innate or learned can be saved for another day. However, explaining the steps of learning to ride a bike remains a formidable task. Describing the many “forces and variables” overcome by the pedestrian to become a cyclist would be an extensive undertaking. Such a task would most likely result in volumes of skill cues unleashed by the teacher all at once upon the performer – cues that unavoidably and necessarily must be transposed into comprehensive skill performances by the learner.

Many parents, including myself, can attest to the problem of trying to teach bike riding skills to their children. Recently, my three-year-old daughter received a bicycle for her birthday. With the aid of training wheels, Kathryn and I set out one day on the back road of our town. She dreamed of riding her new bike. I envisioned teaching her how to do so without injuring either of us. After I showed her where to sit and put her hands and feet, I slowly pushed her forward and constantly prompted her to “make big circles with your feet” and to “watch where you’re going.” Apart from those two cues, which I constantly rambled out, I awkwardly lumbered through an explanation of balancing on two wheels (I realize this balance problem is reduced by training wheels, but Kathryn’s erratic turning and regular shifts in weight in the seat still made it a tremulous situation.) Yet Kathryn eventually found her balance. She somehow tamed the variety of forces and variables on her own, adjusting her balance at every turn.

Eventually, she focused on other cycling skills, such as turning and braking, without needing my constant prodding to “stay straight” and, on occasion, “slow down.”

Mark Twain’s teacher, who Twain referred to as “The Expert,” went through similar trouble in instructing the essayist how to ride. “The Expert,” Twain describes, “explained [the bike’s] points briefly, then he got on its back and rode around a little, to show me how easy it was to do.”²¹ Such an easy demonstration by “The Expert” did not translate into easy learning by Twain. He struggled to gain the skills necessary to remain aloft on the two wheels at the expense of both his and his teacher’s health. “[The Expert] said that the dismounting was perhaps the hardest thing to learn,” Twain recalls, “but he was in error there...I could get off myself...with a crash, he at the bottom, I next, and the machine on top.”²² Willard discovered how to ride through equally obscure instruction, adding and subtracting faculty in her “bicycle college” until finally “Teacher Number 12” set out to “teach her a new language” by “studiously keeping in the background” while “steering me [Willard] to the fore.”²³

From these authors’ experiences as well as my own, it appears that Strickland’s characterization of riding a bike as an inexplicable phenomenon would be somewhat accurate. Those of us who can ride a bike can easily demonstrate the skill to those about to learn. But when we attempt to answer the pedestrian’s question of “How did you do that?,” when we attempt to instruct them how they should move their bodies to simultaneously maintain balance, pedal, turn and traverse ground to actually ride somewhere, our words fall short. We have trouble explaining it. We have no trouble doing it.

Willard's bicycle, personified by the author with the name Gladys, highlights this irony at the beginning of her rider's lessons. "You must suit yourself to the unchanging regulations of gravity, general and specific, as illustrated in me," advises Gladys. "[As] strange as the paradox may seem, you will do this best by not trying to do it at all."²⁴ Gladys implies that one cannot learn to ride a bicycle by talking about it. One can only learn by doing it.

Riding a Bike as a Creative Act

An inability to explain completely what one has done or how one has performed certain skills often exemplifies a truly creative act. Upon reflection, one realizes that one has done *something*, but one may not necessarily be able to explain how that something came about. The above examples from fledgling (Twain, Willard, Fournel) as well as advanced cyclists (The Expert and Teacher Number 12) attest to this. Explanations fall short of completely describing their actions even though they could all eventually perform the activity.

The necessary balancing act inherent in riding a bike resides at the hub of this conundrum of inexplicability. The act of riding a bike appears to result from the composition of a plan to adjudicate the physical forces working on the rider while simultaneously carrying out the performance of those planned physical actions that allow one to remain upright. Once accomplished, the rider must continuously pay homage to this dynamic balance while simultaneously performing other skills such as pedaling, turning, and braking. The simultaneous creation of a plan (to balance on a bike) with the performance of that plan (actually balancing) appears to be analogous to definitions of

improvisational conduct noted in other physical activities such as playing jazz music and performing modern dance.

Is riding a bike improvisational conduct? Such a notion would appear to create a tension similarly found in comparing a pedestrian to a cyclist. Riding a bike is a very ubiquitous activity learned almost universally around the globe. Improvisational conduct, on the other hand, carries with it a connotation of being a very unique experience that requires a high degree of expertise. Riding a bike requires a working bike, a rider, and an appropriate terrain upon which to ride. Improvisational conduct may not have such dictated requirements, instead relying on any number of available resources and any applicable apparatus. The method of riding a bike also appears very limited and non-creative. Riding a bike, at its most basic level, requires the rider to serve as the engine that powers an inflexible machine. This rigid machine largely dictates the body position from which most activity will occur during its operation – sitting on a certain spot (the saddle), placing the feet on certain spots (the pedals) and placing the hands on certain steering devices (the handlebars).

Other improvisational activities may have more or less restricted formats. For example, jazz pianists function within the parameters of the keyboard but modern dancers limit their efforts by the vast potential movements of the human body. Considerable differences in the quality of the restrictions in each of these activities exist. Cycling appears to be less flexible in nature compared to these activities commonly thought of as improvisational. Further, while in the highly prescribed cycling position, riding a bike requires one to balance upon two aligned wheels varying from a couple of inches to less than one inch in width. If one achieves this tremulous position, one is still not “bike

riding” or “cycling” until the machine rolls forward and ground is traversed. The machine further restricts this motion by its design or purpose (mountain bike, road bike, BMX bike etc.) and the composition of the roads, pathways or trails over which it rides. It remains limited by the terrain upon which the activity takes place. Quite clearly, while riding a bicycle, one simply cannot do everything or go everywhere. Bicycling, it would seem, severely limits opportunities for improvisational acts rather than creating space for them to occur.

The word “improvisation” alone conjures associations with creativity, invention, imagination, on-the-fly thought, and often unplanned for or unpredictable outcomes. These actions, when they occur, also appear to carry with them considerably more merit than normal, prepared, and habitual actions that occur throughout life. Quite specifically, when one thinks of improvisation, very specific, unique, and memorable acts usually come to mind. Upon initial examination, powering a rigid machine, placing oneself in a dictated position, balancing oneself precariously upon a couple inches of rubber, and traveling over terrain more specific than that which the pedestrian could cover without such an apparatus appears to provide few opportunities for improvisation. Taken at face-value, the common experience of riding a bike and the creative experience found in improvisational conduct would seem to have little in common.

Jazz Music, Modern Dance, Road Cycling, and Improvisational Behavior

By reviewing some of the jazz music and modern dance literature specific to improvisation, however, the similarities between these activities and learning to ride a bike become more apparent. For example, the difficulty in explaining to the pedestrian

how to ride a bike bears resemblance to the difficulty a jazz musician or modern dancer experiences when attempting to explain how they perform their improvisational activities. In the preface of Bruce Ellis Benson's work titled *The Improvisation of Musical Dialogue*, the author confesses that he is often asked "What are you *doing*?" by beginners when he improvises at the piano. Benson admits, even after his examination of what musical composers, performers, and listeners actually *do*, that he does not have a complete answer to this question. He concludes that "music making is a wonderfully complex activity that resists precise definition."²⁵

David Sudnow, in his exploration of improvised conduct at the piano entitled *Ways of the Hand* expresses a similar frustration with his teacher when trying to learn to play jazz music. Sudnow would ask, "What was that?" referring to an improvised riff performed by his mentor. His teacher would respond with vagueness such as, "I don't really know what I just did," or "I just improvise, I really cannot tell you how, you have to have a feel for it [sic]."²⁶ Much like Strickland's characterization of riding a bicycle as too many forces and variables to explain and Twain's and Willard's struggles to describe how one rides a bike, performing improvisational jazz music appears to be equally baffling.

Modern dancers confront similar difficulties when attempting to explain improvisational conduct during their performances. In her book *The Phenomenology of Dance*, Maxine Sheets-Johnstone notes specifically that "an experience (such as finding balance on a bike) must be had in order to be described." She further laments difficulty in finding a descriptive method which "takes nothing for granted, and which does not falsify or reduce the effect of the experience itself."²⁷ Sheets-Johnstone's comments

stress that having the experience of riding a bike is required in order to adequately describe the event, yet the description provided may still insufficiently project how this activity was accomplished.

In a Master of Fine Arts paper, a ballet dancer described her attempts at performing modern dance. She concludes that “there was, in fact, no one, single way of defining and teaching modern technique.”²⁸ “It was as if I was given a blank sheet of paper, a pencil and a list of words,” the ballet dancer explains, “and was asked to write a story that would make sense to myself and others. Except, I had never written a story like this before.”²⁹ When pedestrians first get onto a bike and push off, they experience similar feelings to this ballet dancer. They find themselves working in unfamiliar territory largely unable to perform the skill of riding a bike to any great extent or explain their experience to themselves or to others with any great clarity.

Indeed, it would seem that those learning to ride a bike, similar to those playing jazz piano or performing modern dance, cannot substantially rely on the explanation and verbal guidance of others. Rather, learners discover that *composing* activities from a variety of previously learned movement vocabularies while simultaneously *performing* the aggregate of this vocabulary produces the improvised conduct. It cannot occur by simply listening to the instruction of others. This idea of simultaneous composition and performance arises repeatedly in many definitions of improvisational conduct. In addition to these two characteristics, two others are often added to constitute the core of the definition, “spontaneity” and “without any preparation.”

Spontaneity

The spontaneity, or spur-of-the-moment-ness, often referred to in definitions of the improvised act should not be likened to random actions that fail to follow any rules of a given practice (jazz music, modern dance, or cycling). They show logical links to previous actions or to those that may occur in the future. According to the great modern dancer Isadora Duncan, “Improvised movement shares an organic relationship with the movement preceding and succeeding it.”³⁰ Sheets-Johnstone calls this logical relationship in improvisational dance a “dynamic line of shear force which is logically consistent with all that has gone before and all that will come to be.”³¹

Benson agrees with these dancers. He notes that in improvisational jazz music “not just *anything* was acceptable. There were still rules,” although the author concedes that these rules can be either restrictive or comparatively open.³² Philosopher Lee B. Brown uses a “feedback loop” as a metaphor for this logical pathway. Lee writes “(the jazz musician) must produce on-the-spot responses to something unalterable, namely, the music already laid down.” The musician’s responses, in turn, continually produce future choices.³³ In short, while definitions of improvisation correctly include the components of spontaneity or spur-of-the-moment decisions, the logic between preceding, occurring, and succeeding actions cannot occur outside of the inherent rules of the practice.

From the cyclist’s perspective, the natural rules of gravity and balance weigh heavily on every rider. Any adjustment while on the bike, whether it is turning, climbing, or braking, must be accomplished while adhering to these rules of balance. The bike itself, its design and mechanical demands, also limits what the rider can and cannot do, much like the number of keys on a piano. The abilities of the rider, largely measured by

the rider's fitness and skill level, function in much the same way as the physical limitations of the dancer. Most agree that improvisational conduct must occur spontaneously, but the actions cannot simply be random. They must occur within the logical flow and rules of the given activity. They cannot occur, as Fournel has indicated, outside of the "coherent universe" known as riding a bike.³⁴

Without Any Preparation

The claim that improvisation occurs "without any preparation" also needs further clarification. Again, scholars in the jazz music and modern dance genre provide more specifics. Many of these writers agree that improvisation is not *creation ex nihilo* – creation out of nothing. Experiences and embodied skills from one's past inform improvisational conduct. Sheets-Johnstone argues that the use of "dance studies" prepares the student for improvisational dance "by allowing one to explore the actual components of movement in depth and thus increase one's sensitivity to them and to their interrelationship."³⁵ She surmises that learning other dance techniques, such as ballroom or ballet, provides a wealth of movement vocabulary which one can utilize in various ways while dancing improvisationally. For example, Andee Scott's extensive training as a ballet dancer made her familiar with moving her body. However, Scott confesses that the imitation of other modern dancers "initiated the learning process" and helped her become familiar with moving her body into improvised positions.³⁶

In the jazz music realm, Lee provides support for the claim that improvisation does not occur without considerable preparation. Lee asserts, "Jazz improvisers must master a stock of musical figures and phrases out of which they gradually learn to

construct solos of their own.” He adds that jazz musicians “internalize a cache of musical forms, e.g., meters and chord progressions, that function as frameworks for the direction that the improvised solos will take.”³⁷ Sudnow’s experience of learning jazz piano echoes this notion. He labors to memorize chords, fingerings, and recorded riffs from other jazz musicians in the hopes of opening doors to his own improvisation.³⁸ Vocalist and bandleader James Brown provides another example of preparation for improvisation. During his performances, Brown and his band claim ignorance to knowing exactly what they will be playing or when, but they do admit to knowing “what the raw materials are and how to manipulate them during performed time.”³⁹ Duke Ellington would concur with this observation. “There has never been anybody who has blown even two bars worth listening to,” Ellington explains, “who didn’t have some idea what he was going to play, before he started.”⁴⁰

In cycling, the obvious and necessary skill to be mastered before one attempts to ride a bike is that of balance or elevating one’s center of gravity off the ground by standing in an upright position. Twain, Willard, Fournel and many others have all noted the necessity of this previously learned skill before mounting a bike. However, the balance needed on a bike is not exactly the same as the balance needed when walking on a balance beam or on the top rail of a fence. *Popular Science* magazine in 1891 explains this difference, noting that the “tossing of arms and legs to keep balance” is available in the skill of walking while the “cyclist gets no help.”⁴¹ Still, the basic skills of cycling – balancing, pedaling, braking and turning – all constitute a foundation for all other advanced skills learned while riding a bike. This preparation appears to be analogous to learning musical scales and chords or ballroom and ballet dance techniques.

Few scholars dispute the fact that improvisation occurs sometime during simultaneous composition and performance. In addition, improvisational conduct, from the jazz musician and modern dancer's perspectives, clearly does not arise in a vacuum apart from some preparation any more than it occurs spontaneously without any logical connection to the rules of the practice or to past and future activities. Benson clarifies this point when he writes "improvisation inevitably involves a constantly changing balance between material planned in advance and spontaneous extemporization."⁴² Not only does Benson assert that preparation allows one to move beyond the confines of the groundwork, but he also asserts that this preparation is essential for one to be spontaneous in his or her performance. "As odd as it may sound," Benson concludes, "the musician who is most prepared – in terms of having thought about what is to be played but even having played various possibilities – is most able to be spontaneous."⁴³ It would appear that Benson finds preparation to be a critical component to the improvised act not only in creating this act but also in providing a space for this act to come forth spontaneously.

From these descriptions of jazz musicians and modern dancers' experiences with improvisation, a definition of this phenomenon can be formed: To improvise means to skillfully and simultaneously compose and perform actions that spontaneously provide solutions to specific problems. Individual actions are constrained by the rules of a given practice, are guided by the theme or idea of the project, and must be logically linked to preceding and succeeding activities.

This definition of improvisational conduct does little to unravel its mysteries. The spur-of-the-moment-ness, the surprise-ness, and the unforeseen-ness of this conduct is

difficult to explain. The spontaneous, split-second choices found as the trigger mechanisms in improvised conduct defy explicit understanding. They do not seem to be the sort of thing one could learn to control at will. Benson asks, “For what would it mean to ‘teach’ the ‘rules’ of spontaneity?”⁴⁴ This question is just as much a conundrum as Sudnow asking his jazz piano instructor “How did you just play that on the keyboard?” or Scott asking her modern dance teacher to explain how improvisational actions occur in modern dance. The teachers’ answers are vague. The answers defy explanation. Students remain frustrated. Eventually, however, they develop confidence in their own previous experiences and begin to simultaneously compose and perform on the spur of the moment utilizing their previously learned knowledge and skills. Simply, the students improvise solutions to their problems without knowing exactly how they did so.

Addressing the Question: Is Cycling Improvisational Conduct?

Upon first glance, improvisational conduct and learning to ride a bike appeared to occupy completely opposite poles – the former being highly creative, spontaneous, unique, and surprising while the latter being highly dictated, formatted, rigid, mundane and commonplace. Upon further examination, however, it seems that the improvisational experiences of modern dancers and jazz musicians are similar to those experiences of a cyclist riding a bike. Both groups indicate a spur-of-the-moment-ness and spontaneity in creating their desired outcome whether it is the improvisation desired by the modern dancer or jazz musician or the mounting and starting off of a non-cyclist. Neither group is able to provide an explicit set of steps that would minimize or eliminate this spontaneity.

Both groups have trouble describing the physical and mental processes occurring while experiencing their performances. However, once they are able to perform the skill, both groups have little trouble physically demonstrating them.

Both groups have indicated specific preparations that inform the desired improvised product such as learning scales and riffs for jazz music, learning ballet and ballroom techniques for modern dance, or learning the dynamics of maintaining one's balance found in standing or walking for cycling. Yet, both groups are uncertain about which preparations lead a novice more easily to the desired skill.

Finally, both groups acknowledge the rules that restrict their actions within their respective practices. However, both find that their desired outcomes – new movements, new riffs, or new experiences while riding a bike – may produce a modification to those rules.

Given these similarities, it appears that learning to ride a bike may be analogous to the development of improvisational conduct found in jazz music and modern dance. Does this indicate that learning to ride a bike is an example of improvisational conduct? And if it does, what promise does improvisation hold for informing us about sports in general and cycling in particular?

In order to answer these questions, we must determine more precisely the stages of development leading to improvisational conduct in physical activity. Chapter Two and Three address this problem specifically. Chapter Two provides a review of the jazz music and modern dance literature focusing on first-person teaching and learning experiences. In Chapter Three, the stages that lead to improvisational behavior in these two practices will be delineated.

Chapter Four provides an analogous review of the cycling literature focusing primarily on first-person accounts of cyclists in action. The following section, Chapter Five, describes the changing experiences I encountered when transforming from a beginner to an advanced long-distance endurance rider. Beginning with mounting the bike for the first time, I will describe the qualitative changes I experienced as I developed the skills of more advanced cycling. This description will support the skillful progression revealed through the previous cycling literature review. This journey will also highlight the acquisition of skills described by the other riders in the previous chapter. My first-person description will additionally reveal the evolution of my focal attention while in the saddle.

The benchmarks leading to improvisational conduct and the benchmarks encountered in learning to ride a bike will then be compared in Chapter Six. Similarities and differences will be analyzed. At that time, a more complete answer to the central questions of this research will be provided. What is improvisation and what promise does it hold for informing us about sports in general and cycling in particular?

Considerations

Primary Sources

The benchmarks of skill development found in both improvisation and cycling will be compiled primarily through a review of first-person descriptions. I will examine the process of learning to act improvisationally and the process of learning to ride a bike for long distances through the review of these personal experiences. Much like the descriptions of Twain, Willard, Fournel, and my own initial attempts at riding a bike, my

primary goal is to extract the rich, felt, and often mundane descriptions of the personal trials and tribulations one experiences when learning these skills. These descriptions can be found in a variety of sources to include popular non-fiction, foreign translations, and so called “cult” cycling favorites as well as journal, magazine, and on-line sources. Similarly, the personal descriptions of jazz musicians and modern dancers seeking the goal of improvisational conduct will be useful and will be taken from similar sources.

These first-person descriptions and narratives will be analyzed using methods similar to those of David Sudnow in his book, *Ways of the Hand: The Organization of Improvised Conduct*.⁴⁵ Sudnow’s book is a model for using personal description to delineate the progressive stages found in the learning of specific human endeavors. Sudnow explains, “My concern is description and not explanation, a phenomenologically motivated inquiry into the nature of [the human body] from the standpoint of the performer.”⁴⁶ *Ways of the Hand* offers “a close description of the handicraft of improvisation” and “reviews the acquisition of jazz hands, on the way toward the closer study of the human body and its works.”⁴⁷ While Sudnow’s writings describe how he learned jazz piano, he strongly asserts that his account should not be restricted to only musicians. He stresses that such limitation would “defeat [his] interest in offering a sample of a style of descriptive inquiry to students of behavior.”⁴⁸ This text will greatly inform this dissertation as I seek, using Sudnow’s words, “a fine examination of concrete problems posed by the task of sustaining an orderly activity, which ‘improvisation’ certainly is.”⁴⁹

Beginners and Their Bikes

Only “road” cycling will be used in this analysis. This will not be determined by the *type* of bike being used (e.g. road, mountain, BMX, etc) but *where* the bike is being used – in this case, primarily on roads or designed bicycle pathways. Most beginners probably have their first experiences of riding a bike on a variety of bicycle types, but generally it occurs on flat, open, and hard (e.g. paved) surfaces. From these types of terrains the initial exploration of learning cycling skills will commence, and it is here that the pedestrian, the recreational cyclist, and the peloton are all united by a common experience.

Advanced Riders and Their Machines

After exploring the initial skills of riding a bike, the type of bicycle and type of riding reviewed will narrow somewhat. Descriptions of learning more intermediate cycling skills will continue to be taken from narratives of bike riding on roads and designed bicycle pathways. However, the more advanced the cycling skill reviewed, the more likely it will come from sources pertaining to riding bikes built specifically for the road and the development of skills found in the practice known as long-distance endurance road cycling.

The narrowing of the type of cycling reviewed for this project is selected for three reasons. First, it includes the largest number of bicycle users riding at beginning and intermediate levels. Second, it constitutes the bulk of the limited first-person accounts currently found in the cycling literature, and, third, it makes the best use of my own experiences of riding a bike.

A Final Perspective

Earlier, I made the claim that I had trouble communicating with the real cyclists in the peloton as well as the non-cyclists labeled as pedestrians. My position allows me to portray an intermediary perspective nestled somewhere between each extreme. My positioning within the cycling practice represents someone who has, like every other rider, gone through the initial stages of learning to ride a bike. My “miracle” blessed me when I was a child much like many other riders. Over the last several years, however, I have expanded upon those initial skills, moving more closely to the peloton’s perspective – a move that many novice cyclists may never even attempt.

Yet, I am not so far removed from the pedestrian’s perspective that I can no longer speak to their condition, and I am not so far behind the peloton that I cannot speak intelligently about their perspectives. I am in transition, even now, from pedestrian to cyclist. Along with this transition comes a group of transitional experiences – experiences of change, sometimes at the spur of the moment, sometimes after long plateaus of little skill development, sometimes in great fits and starts. I have a wheel in both camps. Consequently, my perspectives and experiences are couched with the masses of bike riders found between the peloton and the pedestrian viewpoints while not favoring either extreme. I am, even as I write this dissertation, in constant motion away from a pedestrian life and toward that of a “real cyclist.” This project is about progressions in skill development. The best perspective to see this development, I would argue, would be from one working within the process. Sudnow would most likely agree.

While I will attempt to communicate to both the pedestrian and peloton reader through the language of cycling, those who are primarily of the former group may

occasionally find difficulty working within such a specialized vocabulary. Sudnow expresses the same concern lamenting that the language of jazz piano may be “uncharted territory” for non-musicians. To correct for this deficiency, the budding jazz pianist suggested that readers of his book “rehearse the various critical keyboard examples [he provides] using a tabletop to help concretize them” ultimately hoping that such practice will create a more manageable discussion.⁵⁰

I recommend the same to my readers. I encourage the reader to ride along with me. Live the progressions to be examined within these pages. Revisit and re-experience those first joys and delights of riding a bike. You will not have to be one of the peloton to keep up. You only need to be any one of the lone riders you see pedaling around your neighborhood in the setting sun.

Go find your bike. Dust it off. Lube the chain. Check the brakes. Inflate the tires. Go for a spin. Not just once. Go several times. Experience again what it is to ride a bike. What it means to ride a bike. Pay attention to your body. What are you doing? Pay attention to your thoughts. What are you thinking? Most importantly, be ready for that surprise, that spur-of-the-moment-ness – perhaps even that flourish of improvisation. Learn by doing not simply by reading. Add this effort, and perhaps the experiences described in this work will become more real for you and less a hazy childhood memory.

The road is waiting. Clip in. Gear up. Let’s ride.

Chapter Two

Improvisation in the Jazz Music and Modern Dance Literature

Introduction

Improvisational conduct exists in a variety of practices. When most think of improvisation, thoughts of on-the-fly decision-making, spur-of-the-moment performances, and highly inventive and creative activities come to mind. I randomly asked colleagues what activities sprung to their minds when I say the word “improvisation.” I received answers such as theatre, stand-up comedy, music, modern dance, jazz, art, and the like. Even when I asked a couple of colleagues the same question while completely dressed in my cycling garb, no one offered the answer “riding a bike.” In fact, no one brought up any sporting activities whatsoever.

The fact that thoughts of improvisation do not immediately conjure thoughts of cycling or any other sports activity may be unsurprising. However, the assertion that analogous developmental pathways leading to improvisation in jazz music, modern dance, and cycling exist may raise an eyebrow or two.

The following review of literature focuses upon improvisational behavior in jazz music and modern dance. Through this review, similar stages of skill development in both practices will be uncovered. These two practices, pregnant with improvisational conduct, are selected for two reasons. First, a review of the jazz music literature supports the claims made by Sudnow in his book, *Ways of the Hand*, that improvisation rests on a progression of skills that mimics development in sport domains. Modern dance shows a similar developmental pattern and is a physical, athletic activity – considerably more so

than stand-up comedy, theatre or art. Because dance is a gross motor activity, it is more analogous to bike riding than is jazz piano.

Other improvisational practices exist but are not reviewed in this work. However, such a review might turn out to be redundant. Stark similarities and experiences noted by jazz musicians and modern dancers lead one to believe that at least the major benchmarks found along the path to improvisation would be common to all activities of this type. Little would be learned by expanding the scope of the review.

Are the benchmarks leading to improvisational conduct analogous to the stages one passes through when learning to ride a bicycle? Is learning to ride a bike experienced in a similar fashion to learning to play jazz piano or perform modern dance? Can riding a bike be improvisational conduct, in spite of the bicycle's inherent demands and quite rigid structure? This chapter presents several perspectives on improvisation and leads us closer to answering these questions. First, however, a review of Michael Polanyi and Harry Prosch's text, *Meaning*, a work that focuses upon the acquisition of skills and their use in practical activities will provide important structure to this dissertation.

Polanyi's *Meaning*

Although not a text written specifically to address the topic of improvisation, Michael Polanyi's *Meaning* examines the development of individual knowledge – specifically, how people come to know things.¹ Largely assembled by Harry Prosch, this series of adapted lectures and published articles by Polanyi explores the development of “personal knowledge” through the distinctions of “subsidiary” and “focal awareness.” The authors attempt to “show how the meanings established in science and those

achieved in the humanities can be brought into existential harmony through recognition of the existence of meaningful order to the world.” They seek to “show the way toward a restoration of meaning in the life of contemporary man.”²

Polanyi takes an insightful look into the destruction of meaning through those he terms “nihilists.” Nihilists lack public spirit, believe in nothing, undertake no obligations or restrictions, and exhibit extreme individualistic behavior with no interest in politics.³ This nihilistic perspective, Polanyi argues, fragmented the world into two major camps: science and the humanities. Through the commonality of personal knowledge described by Polanyi as “the part which we ourselves necessarily contribute in shaping our conception of scientific knowledge,” Polanyi attempts to reunite these two fragments. He deems this quest as “quite radical and forbidden” given the current views of science.⁴

More pertinent to this dissertation, however, is Polanyi’s discussion and use of the differences found between subsidiary and focal awareness. He utilizes these two key conceptions of consciousness to reunite science and the humanities on a common platform of shared meaning. These two key concepts will later be revealed as foundational ideas in the development of improvisational conduct.

Polanyi separates personal knowledge into focal and subsidiary awareness. Focal awareness is simply that which is consciously focused upon. It is the raw, bodily nature of our experience.⁵ Polanyi’s uses hammering a nail into the wall as an example. When performing this action, I focus directly on the result of the hammer hitting the nail and properly driving it into the wall. I am fully conscious of this activity and, as it is the primary goal of my activity, attend to it focally.

In contrast, subsidiary awareness, or tacit knowing, constitutes “items or particulars that we are aware of in the act of focusing our attention on something else, away from them.”⁶ It is a reliance on “the trained delicacy of eye, ear, and touch” that inform the activity currently being undertaken and focused directly upon. These include the massive body of personal knowledge, learned and embodied, that we use or sense while performing specific focused upon actions. Polanyi’s example of subsidiary awareness is that of feeling the hammer in the hand as it performs the nail-driving action. Those sensations felt in our hands during our hammering are not the focus of our attention. They are tended to only tacitly and unconsciously yet remain absolutely essential for the nail-driving activity to take place.

Polanyi argues that the interplay of subsidiary and focal awareness as integrated by the individual constitutes our levels of practical skill in given activities. Practical skill, according to Polanyi, is “the capacity for carrying out a great number of particular movements with a view to achieving a comprehensive result.”⁷ Those individuals with greater skill in something unconsciously carry out a greater number of subsidiary activities while producing a particular skillful result. In contrast, less skilled individuals attend from smaller numbers of subsidiaries most likely producing less complex or accurate outcomes.

Coincidentally, Polanyi uses the example of learning to ride a bike to describe the distinction between focal and subsidiary awareness and its relationship to practical skill development. He contends that “We cannot learn to keep our balance on a bicycle by trying to follow the explicit rule that, to compensate for an imbalance, we must force our bicycle into a curve – away from the direction of the imbalance – whose radius is

proportional to the square of the bicycle's velocity over the angle of imbalance. Such knowledge is totally ineffectual unless it is known tacitly, that is, unless it is known subsidiarily – unless it is simply dwelt in.”⁸ In this example, staying balanced on a bike constitutes the practical skill that we consciously focus upon. This focal awareness arises from the multitude of tacitly known physical skills followed unconsciously in order to keep the bike vertical. The “too many forces and variables to explain how a bicycle stays upright” that Bill Strickland referred to comprise the subsidiaries that must be embodied and unconsciously attended to for the skillful balancing upon a bike to take place.⁹ Only by attending to these forces and variables subsidiarily can one mount the bike and start off on his or her own.

In contrast, by focusing on each individual subsidiary – to shift one's focal awareness from the comprehensive task of staying balanced upon a bike to a focal awareness on one of the given subsidiaries – performance becomes greatly inhibited if not utterly impossible. Polanyi explains, “We can paralyze the performance of a skill by turning our attention away from its performance and concentrating instead on the several motions that compose the performance.”¹⁰ The integration of subsidiary skills and knowledge allows for the desired, focused upon skillful performance to take place. Focusing on subsidiaries in lieu of the desired outcome can result in the destruction of the entire project.

A shift in focus from tacit knowing can be reversed, however. Polanyi points this out in a music example. “A pianist who paralyzes his performance by intensely watching his own fingers can promptly recover their skillful use by attending once more to his music.”¹¹ Polanyi argues that one can only live within this integration of subsidiaries to

perform skillful actions. More specifically, he claims that one must dwell in the embodied subsidiaries for the possibility of any practical skill performance to occur at all.

Dwelling within the triad of subsidiary awareness, focal targets, and personal integration produces one's focal attention on a given project and subsequently produces skillful performances. Yet a purpose or a goal largely motivates and guides the process of mastering a skill.¹² Dwelling within this triad can only take one so far. It only indicates how we experience the meaning of our world and the project at hand. Dwelling in subsidiaries makes us aware of the challenges that face us in life, but it does not appear to guide us in the intentionality of our actions. "All knowing is action," Polanyi writes adding that it is "our urge to understand and control our experience" that guides our intentionality.¹³ We can make meaning of the problems, but without another step, this simple dwelling cannot direct us to solve them. To extend this notion of dwelling and tie it with intentionality of action, Polanyi identifies links between intuition, imagination, and ideas.

According to Polanyi, purposeful, deliberate action results from a casting forth of intentions through our imagination. This casting forth generates from our embodied subsidiaries several possible solutions to a problem. We confront a problem and begin imagining solutions to that problem given our current bank of knowledge and information. Our intuition produces given ideas or solutions to these problems. This natural process of intuition integrates our mass of subsidiaries and produces what will eventually become an explicit solution. Each subsidiary used during this process will contain aspects of the solution in themselves, but will not comprise a usable solution until integrated by the individual. In the end, an idea is selected that is guided by intuition and

informed by the individual's embodied subsidiaries. The selected idea or solution becomes something that we are focally aware of, such as driving a nail or staying balanced on a bike.¹⁴

With the addition of the casting forward of imagined solutions to given problems, Polanyi shows how purposeful action arises from dwelling in subsidiary knowledge. At first, we start learning skills by focally attending to their development. As we learn them, we stockpile and embody these skills as subsidiaries for use in future problem-solving situations. From this experience and from dwelling within these subsidiaries, we find meaning in our lives. We integrate these subsidiaries constantly to produce our focal awareness – that which secures our conscious attention. When confronted with a task, our intuition comes into play. We unconsciously select plausible and useful subsidiaries given the situation. We then integrate the subsidiaries to form speculative solutions or at least “reduce the vagueness of the problem and offer a firmer guidance for the next push toward a possible solution.”¹⁵ From this fine sense and integration, the intuition casts forth several possible solutions through the imagination. After imagining a short-list of possible solutions, one resolution is selected and our conscious, focal awareness is targeted on the selected answer. Finally, depending upon our practical skill level (the capacity for carrying out a great number of particular movements with a view to achieving a comprehensive result) which is largely determined by our practical knowledge (number of useful subsidiaries we have embodied), a more or less skillful performance is produced.

Polanyi's evolution of skillful performance appears to build from the learning and embodying of simple skills. In turn, this creates a stockpile of subsidiaries that generates

possibilities. This stockpile of tacit knowing creates one's perception of meaning in the world as well as the ability to cast forth potential ideas and solutions to confronted challenges. This latter mechanism is catalyzed through one's intuition which spontaneously integrates subsidiaries to create explicit solutions.¹⁶ This spontaneous action by one's intuition seems to be the same sort of spur-of-the-moment-ness referenced in improvisational conduct although Polanyi does not directly state this.

However, Polanyi (referencing Poincaré) does make allusion to a “concluding intuition.”¹⁷ Concluding intuitions burst forth as purely spontaneous events of sudden illumination which offer solutions to given problems. In comparison to the language Polanyi used to describe the problem solving and purposeful actions of seemingly normal decision-making, concluding intuitions appear to be more surprising, unsolicited, unplanned, effortless, and perhaps even unrepeatably in nature. “The quest is often brought to a close after a quiet interval (when the efforts of the imagination are at rest),” Polanyi writes, “by a sudden illumination which offers a solution for the problem.”¹⁸ As noted, these concluding intuitions could be brief occurrences of improvisational conduct arising as explicit solutions to given challenges created spontaneously from the embodied subsidiaries in which we dwell.

Polanyi's reference to concluding intuitions makes room for those kinds of spontaneous, surprising, and unique skillful performances – actions I am calling improvisational conduct in this dissertation – that burst forth as solutions to challenges encountered while playing jazz piano, dancing creatively, or riding a bike. *Meaning* is not a text explicitly devoted to the topic of improvisation, as the texts in the next section will be. However, the evidence it provides to the development of skillful practices will

become most valuable in our future discussion of the benchmarks leading to improvisational conduct.

Improvisation in Jazz Music

David Sudnow summarizes his book, *Ways of the Hand*, in its subtitle: “The Organization of Improvised Conduct.” This work provides an explicit account of the trials and tribulations encountered by one budding jazz musician on his way to becoming a skilled jazz pianist. Dismissing any explanatory or theoretical purposes, Sudnow’s project is one of description – specifically, to “offer a close description of the handicraft of improvisation” and to “review the acquisition of jazz hands on the way toward the closer study of the human body and its works.”¹⁹ In providing such a description, Sudnow hopes to discover if “the body’s improvisational ways can be closely described from the viewpoint of the actor, not through an introspective consciousness, but by a fine examination of concrete problems posed by the task of sustaining an orderly activity, which ‘improvisation’ certainly is.”²⁰

Sudnow, a classically trained pianist, recalls his five-year journey to learn to play jazz music. Necessarily, he confronts head-on the problems of producing improvised conduct. He begins as many students do – securing a teacher, practicing assigned lessons, learning basic skills and musical concepts, and becoming familiar with the keyboard and its terrain. He finds himself in a stage of searching and looking for keys, notes, chords, and “places to go” with his music. Sudnow continuously uses this “places to go” metaphor throughout his journey to characterize one’s ability to see and choose given invitations to improvised musical pathways. Early on, Sudnow has difficulty

seeing these invitations. Instead, he relies largely on the note-for-note reproduction and mimicry of given songs. However, he continually expands his repertoire of jazz skills. By doing so, he develops ways of looking, moving, reaching and thinking to get from point A to point B smoothly and in a jazz manner.²¹

With the continuous expansion of his jazz piano skills, Sudnow eventually finds himself feeling his way through musical challenges in contrast to looking for each individual key in a disjointed fashion. This development of skills does not provide him with a sudden epiphany and instantaneous status as a master of jazz. Instead, he continues to struggle to find invitations to jazz pathways.

He tries rote memory, repetition, and mimicry of other jazz musicians. He listens to their compositions over and over again then goes to the piano and attempts to duplicate them. He seeks advice from his teacher who provides him with rules of thumb and pre-established jazz pathways but no particulars for their use. Sudnow remained frustrated. “My teacher said, ‘Now that you know how to play chords well, why don’t you try to improvise melodies with the right hand,’” the author recalls. “When I went home and listened to my jazz records, I found that in attempting to make up melodies like that, it was as if the instruction ‘go home and start speaking French’ had been given.”²² The teacher’s prescribed formula – chord production plus rules for quick results – dissatisfied the budding jazz pianist. However, the teacher did provide an ever-expanding stockpile of “characteristic jazz-sounding pieces of melody.” Sudnow also began to acquire a growing “mass of principled solutions” that allowed him to know where to go with various chord progressions.²³ After about six months of work, Sudnow found himself

with a stockpile of music skills, little packages of jazz-sounding possibilities, and a vocabulary of places to go.²⁴

Improvisation remains elusive, however. Sudnow describes the enigma as the music “going on around me,” as being “not mine,” and as being “out of hand.”²⁵ He admits to having a “firm understanding of the theory of the keyboard, chord structure, and melodic principles,” but he still had no intentionality for his actions.²⁶ Simply, he was not producing his own jazz sounds.

In his third year of studying jazz, Sudnow finds himself integrating theories, chords, and melodies into recognizable jazz pathways. He finds himself perceiving the emergence of melodic intentionality based on the previous acquisition of jazz faculties.²⁷ “I could tell what a note would sound like because it was a next sound,” Sudnow reveals as he describes his new jazz perspective. “My hand was so engaged with the keyboard that it was given a setting of sounding places in its own configurations and potentialities.”²⁸ Sudnow identifies this acquisition of a jazz perspective as a major breakthrough for learners. Knowing what the next sounds will sound like, he argues, brings to light one of the central problems for all improvisers.²⁹ Development and successful usage of this skill reveals an “integrated reaching for a sounding place within an organized course of action.”³⁰ Simply, Sudnow began to show instances of “knowing where to go” at an increasing rate.

At first, Sudnow could not sustain these instances of jazz into long, full measures of improvisation. “No sooner did I try to latch on to a piece of good-sounding jazz that would come out in the midst of my improvisations,” the pianist explains, “than it would be undermined, as when one first gets the knack of a complex skill, like riding a bicycle

or skiing, the attempt to sustain an easeful management undercuts it.”³¹ Still, the author’s brief experiences with his jazz-sounding riffs reveal a turning in his perception of how to perform improvisation. Similar to Polanyi, Sudnow uses the example of learning to ride a bike to illustrate the turning marked by this important milestone. “You struggle to stay balanced, keep falling, and then almost suddenly several revolutions of the pedals are sustained with the bicycle seeming to go off on its own, and you try to keep it up, and it disintegrates. But there is no question that the hang of it has been glimpsed, the bicycle seems to do the riding all by itself, and the essence of the experience is tasted. All prior ways of being seem thoroughly lacking, and the new way is encountered with a ‘this is it’ feeling, almost as a revelation.”³²

Sudnow’s recognition of the “this is it” feeling propels him to discover and perform longer “sentences” of improvisation. He develops smoothness, a pulsing and an accenting provided by a simultaneous arrival and departure of different sounds at the piano. He begins receiving more and more invitations for action within the music and perceives more and more pathways at the keyboard. Ultimately, Sudnow finds himself not thinking about where he was going, but rather making it up as he went along.³³ Rather than playing a jazz melody, he finds himself only “melodying.”³⁴

In conclusion Sudnow characterizes improvised jazz music as simply a skillful “moving from place to place.”³⁵ He reveals through his descriptions that this ability can not be learned without the development of the skills, habits, techniques, and principles within the jazz practice. His five year journey reveals to us the difference between a novice at improvisation and a skilled jazz pianist. Or as Sudnow metaphorically describes it, the “difference was like that between a new foreigner’s attempts to put

together a smooth sentence and the competent three-year-old's following utterance:

'Daddy, come see my new doll.'"³⁶

In many ways, Sudnow's journey follows a path similar to the evolution of personal knowledge described by Polanyi. Polanyi's development of skilled performance relies heavily on the embodiment of subsidiaries or tacit knowledge of skills. Similarly, Sudnow spends a great deal of time learning and embodying basic skills at the piano for future use in his jazz composition and performance. He then integrates this tacit knowing into a focal awareness of the task at hand producing a more or less skillful performance. Sudnow's ability to mimic and reproduce jazz compositions on an increasingly frequent basis indicates his growing ability to integrate tacit skills into explicit performance.

Sudnow's ability to see invitations for places to go within his jazz performances characterizes his primary thrust. Polanyi's treatment of one's intuition as a casting forth of the imagination in the creation of purposeful action appears analogous to what Sudnow seeks. In addition, both authors, concluding their analyses, describe the necessity of dwelling within the subsidiaries of the practice. By not focusing on any one specific tacit skill, but rather by immersing oneself in the wholeness of the activity, performers more readily find "places to go." Sudnow describes one facet of this ability to dwell when he observed that "I don't think about where I am going, I make it up as I go along."³⁷

This short discussion between Polanyi and Sudnow is not meant to be conclusive. Rather, it serves as a foreshadowing of the analysis that will occur in Chapter Three. These two authors, the former through theory and the latter through personal description, provide a framework for this analysis and the benchmarks experienced en route to improvisational conduct. Consequently, they received a more extensive treatment than

those that follow. Even so, we must continue to gather evidence through a review of jazz music writings. We now turn to two other major works of improvisational conduct in jazz, Bruce Ellis Benson's *The Improvisation of Musical Dialogue* and Stephen Nachmanovitch's *Free Play*.

Benson's work, *The Improvisation of Musical Dialogue: A Phenomenology of Music*, suggests an "improvisational model of music, one that depicts composers, performers, and listeners as partners in a dialogue."³⁸ In this text, Benson considers the function of composition and performance in musical behavior. From this analysis, he theorizes that both the composing and performing of music are essentially improvisational in nature.

Benson claims that composers never create *ex nihilo* but instead improvise on tunes that already exist or, more frequently and importantly, on the tradition in which they work.³⁹ Performers in a similar manner also improvise on tunes as they largely interpret scores and pieces that already exist.⁴⁰ In both cases, the musical work "becomes a place where music making can take place." It is a place where composers and performers can "dwell." One operating within a musical work does not simply take up the musical space provided by the piece. Rather the musician transforms the space and fabricates music from what is conveniently provided on hand within that space.⁴¹ The end result is the creation of a new piece of music, based in musical traditions and practices, and created on the fly with whatever musical preparations are immediately available at that time. Benson characterization of such dwelling is consistent with descriptors of improvisational conduct.

“On hand” material found within a musical work exhibits a great deal of organization. Benson claims that improvisational jazz music can only be founded and understood “in light of the entire tradition of improvising that has gone on before.”⁴² Specifically, what a musician improvises today “bears the mark of other improvisers, not infrequently in the form of “quotations,” commonly referred to as “riffs” or “clichés.”⁴³ Improvisation forms from a kind of “composition,” in a sense of “putting together.” “One takes the basic rhythmic and chord structures of the genre,” Benson explains, “and puts them together in different ways.”⁴⁴

Benson argues that improvisational conduct assimilates musical structures, parts, and practices, composed and played by others in the past, and then learned by the performer. Or this conduct arises from embodied technique, such as chord progressions and scales, learned by the musicians themselves. Inspiration for improvisation, therefore, rarely comes from some sort of divine intervention. Most likely, musicians work within a community of musical tradition creatively borrowing from their fellow musicians operating within that community. Yet Benson does not completely dismiss the possibility of absolute music creation from nothing. Instead, he places improvisation, the transformation of musical material through an elusive mixture of *imitatio* and *variation*, between these two poles of music idea formation.⁴⁵

While all of this borrowing, learning, and embodying of musical theory and practice constitutes the material from which improvised music arises, Benson’s interpretation of improvisation remains hinged on the mystery of spontaneity in its creation. “One of the things we most expect of improvisers,” the author writes, “is spontaneity, the ability to make split-second choices in the heat of the moment.”⁴⁶ As

opposed to a clean, un-improvised performance defined as “premeditated repetition,” Benson views improvisation as not only a spontaneous presentation “of something that is created at that moment,” but also as “premeditated spontaneity” given the preparation required for such conduct to take place.⁴⁷ The spontaneity required in improvisation remains a “mystery” to Benson because he believes it to be “difficult to define” and “not the sort of thing one could (teach or) ‘learn’.”⁴⁸ The author believes that “the musician who is most prepared – not only in terms of having thought about what is to be played but even having played various possibilities – is most able to be spontaneous.” In the end, however, when asked the question “What actually do you do while improvising?,” Benson admits, “I still do not have a complete answer to that question.”⁴⁹

Yet Benson’s work adds to our understanding of the origins of improvisational conduct. Improvisation, Benson concludes, inevitably involves “a constantly changing balance between material planned in advance and spontaneous extemporization.”⁵⁰ While spontaneous action cannot be completely accounted for in this story, the author argues that planned material puts one in a position to be spontaneous and improvisational. Furthermore, the preparation for improvisational conduct requires practical knowledge and skills that can be learned. This knowledge and skill must be internalization to form a “musical connection between mind and body.” An acceptance of excellence and obedience to rules found in the given practice must also exist. Perhaps most importantly, the development of a bodily intentionality must be created – that is, an internalization of all of these things so that one “acts as a musician acts.”⁵¹

Simply, one learns the musical basics of scales, modes, chords, and arpeggios. The learner gets a “feel” for them by putting these basics together in practice sessions,

exercises, and mimicked solos from other musicians. Then, as this preparation continues and the skills of the jazz musician develop, the possibility of spontaneous, improvisational conduct appears.⁵² Following this progression, Benson, like Polanyi and Sudnow, stresses that it is not until one “dwells musically” in this necessary preparation that one can expect improvisational conduct.⁵³

Benson heavily stresses skillful preparation and grounding of improvisation in the historical and community traditions of the jazz practice. Still, the process of generating the key component of improvisation – spontaneity – eludes him. This incapacity would not appear to be uncommon. Most authors of improvisational conduct agree that one can prepare to be improvisational, but one cannot necessarily produce spontaneous actions at will. Stephen Nachmanovitch work on improvisational conduct titled, *Free Play: Improvisation in Life and Art*, provides a different view on the conundrum of “planned” spontaneity by utilizing a more spiritual perspective in his analysis.

Nachmanovitch’s work aims to reveal “the inner sources of spontaneous creation.” Specifically, Nachmanovitch seeks to know how intuitive music, or inspiration of any kind, arises within us. The author wonders how one balances the necessary structure and spontaneity required in this creative process.⁵⁴ Like Sudnow and Benson before him, Nachmanovitch’s book attempts to address how one confronts the paradoxical instruction to “Be spontaneous!” Nachmanovitch believes that the solution to this command is already within us. We need only to “unblock obstacles to its (spontaneity’s) natural flow.”⁵⁵

The author admits, however, that overcoming these personal obstacles may not be an easy task. “It would be nice to have an easy set of recipes that we could apply: Seven

Steps to Busting Our Blocks,” the author explains. “Unfortunately, the creative processes do not work that way. The only way out of the complexity is through it. Unfortunately, the only techniques that can help us are those we invent ourselves.”⁵⁶ He feels that the moment we let go of some impediment or fear, the muse – the spirit of inspiration for poets and artists – comes rushing in. “If we know that our inevitable setbacks and frustrations are phases of the natural cycle of creative processes,” Nachmanovitch further explains, “if we know that our obstacles can become our ornaments, we can persevere and bring our desires to fruition.”⁵⁷ Nachmanovitch characterizes perseverance as a spiritual path which provides ways through the blocks. He suggests that “there are guideposts” leading to improvisation.⁵⁸

Nachmanovitch informs his take on improvisation with the spirituality of Zen. However, even while looking through those tinted glasses, the author’s descriptions of the processes leading to improvisational behavior strike tones similar to those of Sudnow and Benson. Nachmanovitch believes that improvisation flows in time with an evolving consciousness and no preordained script or recipe.⁵⁹ He views this process as an integration of memory (past) with intuition (eternal present) and intention (future).⁶⁰

Guided by this formula, the author claims that the risk of stepping into the unknown future produces the major impediments to improvisation. “We know what *might* happen in the next day or minute,” Nachmanovitch describes, “but we cannot know what *will* happen.”⁶¹ Given this outlook, he believes that improvisation is largely an act of surrender. He further argues that success in improvisation requires a cultivation of a comfortable attitude toward not-knowing and “being nurtured by the mystery of moments that are dependently surprising and ever-fresh.”⁶² The author claims that such an attitude

can lead one to occasionally experience a “creative breakthrough.” He does not guarantee this, however, as he also admits that taking these risks can lead to “failure and disappointment.”⁶³

To hedge our bets in seeking positive improvisational outcomes (and avoid those leading to failure), Nachmanovitch focuses on an inherent structure that leads to improvisational conduct. “It is sometimes thought that in improvisation we can do just anything,” the author explains, “but lack of a conscious plan does not mean that our work is random or arbitrary.”⁶⁴ Improvisation, the author asserts, has rules and a “self-creating structure.” Improvisational conduct does not arise from nothing. Rather, this author would agree with other musicians that this process requires technique and the practice and embodiment of that technique. “To create, we need both technique and freedom from technique,” he explains. “To this end, we practice until our skills become unconscious.”⁶⁵

This embodiment of skills and the unconscious performance of those skills greatly contribute to the potential formation of improvisational conduct. Nachmanovitch believes that an interplay between conscious and unconscious abilities create skillful outcomes. Further, the more skills one can embody and relinquish to the unconscious, the more complex the skill that can be performed. Once again, learning to ride a bicycle provides the primary example. “A girl riding her bike discovers that the secret of effortless control is balance – continuous adjustment to continuous change,” describes the author. “When she reaches the point of shouting ‘Look, Ma, no hands!’ she has learned that she can use less and less means to control greater and greater power. She has learned

to encounter and consciously play with rhythm, timing, weight, balance, geometry, right- and left-handed coordination.”⁶⁶

Not only does Nachmanovitch agree that a tacit attention from subsidiary skills leads to the possibility of more skillful performances, he also agrees that consciously focusing on only one of those skills can lead to failure. “If you had to think consciously of the steps involved in riding a bicycle,” he concludes, “you’d fall off at once.”⁶⁷

In the end, Nachmanovitch’s core of improvisational conduct lies in the moment-to-moment non-stop flow of experiencing and creating as each instant comes.⁶⁸ This does not, however, imply that improvisation will arise quickly and regularly once one has mastered certain abilities within a given practice. The author explains, “An improviser may have to practice for years before being able to play a totally spontaneous minute of music in which every detail is right for its own fleeting moment.”⁶⁹

Indeed, Nachmanovitch refers to a “ripening” process in which the conscious needs to be stuffed with knowledge for its maturation within the unconscious. Only after such a ripening takes place can spur-of-the-moment improvisational conduct arise. “The fruits of improvising, composing, writing, inventing and discovering may flower spontaneously,” the author concludes, “but they arise from soil that we have prepared, fertilized, and tended in the faith that they will ripen in nature’s own time.”⁷⁰

Nachmanovitch’s examination of the creative process provides yet another perspective on the stages one must overcome in seeking improvisational conduct. Covering a variety of territories linked to improvisation, the author argues that the performer passing through three distinct stages in all of them; innocence or discovery, experience or the fall (trials and tribulations), integration or rejuvenation and mastery.⁷¹

These stages may appear to be vague and rather simplistic but they run parallel to those described by Polanyi, Sudnow, and Benson.

A preparation phase exists where basic skills are learned and embodied followed by a stage of practice, trial and error, and more complex skill development. Then an integration of skills, both consciously and unconsciously attended to, occurs in the hopes of producing improvisation. At the end of this preparation, integration and embodiment, the author describes occurrences of “disappearing” in which one “becomes fully in the experience” and “concentrates the whole self into the act” – an experience not unlike the “dwelling” described to by the musicians referenced earlier.⁷²

Analogous to the other authors, Nachmanovitch also highlights spontaneous action as the key to improvisation. He concedes that this action cannot be specifically defined or produced on command. “We cannot define it or understand it,” Nachmanovitch concludes about spontaneous action, “but we can do it.” This fact further kindles the mystery of spur-of-the-moment performances.⁷³

Interestingly, when the musicians sought a concrete example of a complex skill we cannot easily define or understand yet can easily perform, Polanyi, Sudnow, Benson, and Nachmanovitch all chose the experience of learning to ride a bicycle. Riding a bike may exemplify the balance between the unconsciously (tacit) and consciously (focal) attended to skills needed to produce skillful performances. All of these authors note that the embodiment of skills provides a necessary foundation for future complex performances. This produces a dwelling in subsidiaries, the fertile soil for improvisational conduct. While this bursting forth can not be guaranteed, all the authors posit that such dwelling is a prerequisite for improvisation.

It is also interesting that these musicians utilize the gross motor activity of cycling to exemplify the development of improvisational conduct in fine motor skills such as playing jazz piano. This may indicate that the stages leading to improvisational conduct transcend such differences across activities. Sport may be more like music than appears to be the case at first glance.

The next section reviews discussions of improvisational conduct found in modern dance – an activity more like cycling in terms of gross physical performances than jazz piano. We will now turn to these perspectives of modern dance to determine if these masters of improvisational conduct reveal similar stages of development as those presented by the musicians.

Improvisation in Modern Dance

Comparisons of the jazz music and modern dance practices produce quite obvious differences from the outsider's perspective. Playing jazz piano almost exclusively involves the work of the hands upon the keyboard. Modern dance may encompass movements of the entire body within any given dimension of space and a certain period of time. Composing jazz music involves the creation of musical scripts that indicate which keys to hit, when, and how hard. While modern dance choreography mimics this, modern dance differs considerably. The choreography seeks "illusion" as an outcome through the positioning and movement of the body and limbs within a flow of time rather than the production of a given sound through the use of an instrument. In contrast to musicians who think in terms of sound when composing, Maxine Sheets-Johnstone points out, "the dancer must think in movement."⁷⁴ Finally, performing jazz music involves, for

the most part, the manipulation of the piano or other instrument, and is thus rigidly limited by its eighty-eight keys or similar components. Modern dancers restrict themselves only by the limitations of their physiology, their stamina and reach, and their speed and balance. No external apparatus necessarily constrains their performance.

A review of the modern dance literature reveals accounts of improvisation from the dancer's perspectives similar to those of the jazz musicians. The benchmarks encountered on the way to experiencing improvisational conduct appear analogous even though the skillful performances produced are of a vastly different content and quality.

In Maxine Sheets-Johnstone's work, *The Phenomenology of Dance*, the author tries to "illuminate the nature of, and structures inherent in the phenomenal presence of dance and...to illuminate the vital immediate encounter with dance as both a formed and performed art."⁷⁵ More simply, Sheets-Johnstone presents a description of modern dance as an immediate experience of movement, as a description of movement "as it is lived through...not as it is or might be dissected in a laboratory, recorded by an observer, (or) rendered in a third person account."⁷⁶ She wishes to describe the first-person, immediate encounter with dance as a "lived-experience." Through this description, she hopes to "describe the analyzable structures inherent in the total experience."⁷⁷

Sheets-Johnstone describes a modern dance as a "dynamic line of shear force," a distinctive qualitative organization of forces from a beginning point to an end, creating a unique temporality and spatiality through movement.⁷⁸ This dynamic line constituting a dance has both limitations and opportunities. The author explains that the dynamic line is not only "governed to some extent by the...design of the body" but also limited by the movements one can produce given the current position of the body.⁷⁹ These possible

movements are further regulated by the context of a specific dance composition. Simply, movements arising with the dynamic line need to be “logically consistent with all that has gone before and all that will come after.”⁸⁰ This does not acknowledge the existence of guidelines which someone may follow as a recipe to create a dance. “The mere awareness of a dynamic line,” the author clarifies, “will not insure the dancer’s ability to be guided by it nor insure any depth of sensitivity.”⁸¹

Without a recipe or script to dance from, Sheets-Johnstone claims that individual dancers, within their skills and abilities, must develop and follow dynamic lines to their fruition. The skill levels of each individual dancer play an important role. While operating within these personal constraints, a dynamic line can produce a variety of future movement possibilities. As the dynamic line unfolds, the logical flow of form constituting the dance can only be established by the individual choreographer. Only they can experience each successive movement. Given the individual decision-making processes that occur during the composition and performance of a dance, great potential exists that even with the “same beginning movement, two dancers will come up with two entirely unique dances.”⁸² This is not unlike a single chord played on the piano, the author further explains. It is not limited to a single future, but it is up to the performer to choose the coherent pathways sprouting from it. It remains up to the musician to find that musical pathway and intuit its unfolding.

So how do dancers, given the physiological limitations of their bodies, become skilled at choosing movements that are coherent with the illusion at hand? Sheets-Johnstone indicates that students of dance should engage in “dance study.” Dance study simply consists of the exploration of the components of movement in depth in order to

“increase the dancer’s sensitivity to them and to their interrelationship.” This also “allows the students to become more familiar with the possibilities of movement within the specified limitation (and) how it will affect other movements.”⁸³ Quite simply, students of dance need to become familiar with the ways in which they can move their bodies. This can be accomplished by utilizing modern dance techniques or by learning the skills and movements involved in other types of dance such as ballet or ballroom. Students simply seek to add to their repertoires of possible body movements and positions for use in future modern dance improvisation.

Sheets-Johnstone also indicates that budding modern dancers can learn “movement phrases.” Consisting of specific movement ideas, these phrases can become parts, or develop into complete dynamic lines, of shear force.⁸⁴ These short, developing progressions of movement can be mimicked from other performers, developed by the dancers themselves and saved for future use, or they can become the inspiration for a complete dance composition. Dancers stockpile these movement phrases for future use at any decision-making juncture along the pathway of possible future movements – a point of departure, a logical link to other skillful movements, or as a complete dance composition itself needing no further elaboration and standing alone as a concrete work of art.⁸⁵

Dancers attempt to achieve what Sheets-Johnstone describes as a “highly-developed pre-reflective awareness of the moving spatial presence of their bodies.”⁸⁶ Dancers need to become skilled in performing many movements at any given time, something that the less-skilled or non-dancer may have great trouble doing. Skilled performers must be able to choose logical future movements within a dance almost

unconsciously from the stockpile of skilled movements previously practiced, learned, and embodied by the dancer. Dancers seek “kinesthetic knowledge” – body positions and movements that can be focused on both consciously and unconsciously throughout a dance – as the foundation for producing dynamic lines.⁸⁷ Without this kinesthetic knowledge, dancers would find themselves in similar situations to the unskilled jazz pianist. They would have no invitations to future movements. Without these invitations, the dancers would simply have no clear movement places to go.

Sheets-Johnstone’s examination of modern dance reveals a progression of skill development similar to the one found in the jazz music literature. The dance composition, the stand alone end product of modern dance, arises in the unfolding of movement selections taken from an embodied stockpile of learned movements and finely tuned kinesthetic abilities. From this stockpile of potential movements, multiple movement possibilities are integrated and presented as possible and logical next steps in the flow of the dance. As dancers develop their repertoire of movement possibilities, the number of coherent succeeding movements increases, thereby providing the dancer with a greater variety of possible movement pathways. Sheets-Johnstone’s perspective clearly suggests that the more bodily positions and movements a dancer has tacitly available to them, the more likely the dancer will be able to sustain a logical flow of movement throughout the dance. In addition, the author’s state of “pre-reflective awareness” of potential movements appears analogous to the “dwelling” within the subsidiary skills of the practice highlighted in the jazz music literature and by Polanyi.

Even though Sheets-Johnstone’s purpose was to describe a first-person and immediate encounter with modern dance choreography and performance, her work is

overtly theoretical and has limited first-person testimony. While her perspectives and ideas greatly inform and support this dissertation's purpose, we now turn to a more personal and direct account of improvisation development – a ballet dancer who makes the transition from this classic genre to that of modern dance.

The ballet dancer is Andee Scott and her description comes in the form of a professional paper written to fulfill the requirements of a Master of Fine Arts degree from Texas Women's University. Scott's paper, "Dialoguing Dance: A Personal Narrative of Discovery," uses personal narrative as a "mechanism for creating meaning and generating theory about the nature of developing an artistic process in dance." She also uses language and discourse analysis to provide a framework for understanding, interpreting, and creating style in modern dance.⁸⁸ Similar to Sudnow's descriptions of his development at the piano, Scott personally reflects upon the processes experienced in learning modern dance technique. By doing so, she was better able to understand and create a framework for sense-making within a practice based on "improvisation, change and reflection."⁸⁹

Scott clearly describes her acquisition of modern dance abilities. She begins by cataloging the skills she learned as a ballet dancer – a sense of timing, weight and flow, the understanding of various movements and steps, the creation of movement phrases, and the organization of those phrases without having to consciously think about them – all specific to the ballet form. Scott then reveals that, even with all of these embodied dance skills, the imitation of other modern dancers "was one of the only tools I had to initiate my learning process."⁹⁰ While the author has an extensive familiarity with moving her body as a ballet dancer, she has no direct way to translate these skills into the

modern dance world. Instead, she found herself learning what she describes as the “foreign language” of modern dance.

Using this analogy between language and dance, Scott begins to describe several steps in her acquisition of modern dance technique. First, she set out to learn the movement vocabulary of the practice such as mobilizing the torso, working in a standing parallel position, and executing various jumps, turns, and balances. In contrast to standardized ballet methods, Scott realized quickly that “there was in fact no one, single way of defining and teaching modern technique.”⁹¹ What she was experiencing and being taught was only her instructors’ interpretation of modern dance technique tinted by each instructor’s style. This realization focused the author on the “mysteries of choice-making” and the role individual choice plays in modern dance. From that point on, she began to “seek out and develop (her) personal style of movement within technique.”⁹²

Scott’s committal to making personal choices within her performances forced her to shift away from merely imitating her instructors. Instead, she decided to take the content of her movement and enhance it by creating “intention and emphasis” and “layers of depth” beyond the explicit movements themselves. Suddenly, bending the rules of ballet became entry points for modern dance as did qualitative changes to other movement forms familiar to her. In doing so, Scott created her own personal, modern dance style distinct from that of her instructors.⁹³

Once Scott took responsibility for selecting movements within a dance, she began to explore her own way of “connecting the dots.” How she executed certain movements, when she performed them, and their placement and relationship to other movements and dance phrases became her primary focus.⁹⁴ Even when she began to dance professionally

for dance companies, she found herself modifying the direction given by the choreographer, ultimately taking personal responsibility in “exploring the different ways of performing the steps in order to express the intention of the piece.”⁹⁵ Quite clearly, Scott puts considerable stock in the discovery and ownership of choice-making within the performance of modern dance.

While choice-making and selecting movements for a dance constitutes the core of performing modern dance, Scott also notes that she relies on the tools of improvisation for movement exploration and generation. “I would start with an idea, find a studio, and just start moving,” Scott recalls. “My explorations were directed by the idea I had chosen...I was looking to discover different ways of moving my body.”⁹⁶ Scott views movement improvisation as “a facilitator of fluency and versatility with the modern dance form” and as a “tool for exploration and discovery of new movement patterns.”⁹⁷ These newly discovered movements and patterns could become complete dances themselves or they could contribute to a dancer’s growing list of movement possibilities. In either case, the development of different movement possibilities gave her more invitations to multiple movement progressions within her own choreography.

Scott’s description of learning modern dance technique describes a possible pathway leading to modern dance choreography and improvisation. Scott reveals that she must first embody basic skills of dance, explore the movement limitations of her body, and become skilled in various other movement vocabularies. She then seeks to integrate these skills into more complex movement phrases and pieces. Finally and most importantly, Scott claims that the dancer must be the primary choice-maker in selecting not only the movements to be performed but also how they are to be performed. Scott

deems this emphasis on personal responsibility in decision-making as paramount to the successful creation of modern dance. However, as shown in her personal story, the ability to decide upon the next movement within a piece remains grounded in the dancer's ability to draw from a stockpile of embodied movement possibilities.

Interestingly, these movement possibilities not only inform explicitly improvised conduct, but they also include the improvised conduct itself. Scott's reference to improvisation as not only a product of dance composition, but also a tool used in developing more movement subsidiaries, alludes to this dual purpose of improvisation. Scott starts with a movement idea. Without limiting her movement possibilities or repeating other solutions known to her, she improvises upon that movement in an attempted to discover new kinesthetic possibilities and adding them to her movement potential list. While it is not uncommon for either modern dancers or musicians to characterize improvisation as a tool or an end-product in and of itself, Scott's direct reference to this indicates that any improvised conduct, once performed, becomes potential future material that may be further manipulated. It appears that a cycle is formed where newly improvised movements have the potential of becoming embodied subsidiaries for future use in dance composition.

Some modern dance choreographers specifically target improvisation as a method or tool for dance composition as well as the end product of that tool. Daniel Nagrin in his book, *Dance and the Specific Image: Improvisation*, quite clearly expresses the dual role of improvisation. Early in his career, Nagrin identified improvisation as "never a central focus" but rather "a delight, a diversion and a tool for choreography." Now he views improvisation as "the source from which all else flowed" defining it as "an exercise in

attuning to an uncertain existence for the improviser living in a swiftly changing environment.”⁹⁸

His book takes a look at the exploration of the “possibilities of interactive improvisation and [the development of] the forms and skills [needed] to perform improvisation for the concert-going audience.” More simply, Nagrin describes his book as “not only a collection of improvisations but also a telling of what (his dance group) found and did in the way we improvised.”⁹⁹ His book includes several descriptions of improvisational exercises, games and structures as well as the histories of how his workgroup shaped them. This abundance of descriptions of improvisational exercises not only provides useful tools for dancers seeking to experience improvisation in and of itself, but they also provide practical and specific methods for using improvisation in the expansion of movement vocabularies. For the purposes of this dissertation, however, Nagrin’s chapter titled “Teaching, Directing, and Performing Improvisation” provides the greatest amount of pertinent information.¹⁰⁰

This chapter summarizes the ground rules for dancers, teachers and directors who work with improvisation. Immediately, as others have before him, Nagrin admits that improvisation is not simply a “do whatever you want to do” phenomenon. True improvisation arises from a set structure, usually provided by the director, but will produce unique and different results between dancers and between individual performances within the same structure.¹⁰¹ “For improvisation, the director usually plays the major role in setting the structure and problems of each piece,” Nagrin explains. “The dancers have the creative responsibility of working out the problem.”¹⁰² Nagrin further stresses that within the carefully constructed framework of rules provided by the

director, anything can happen. He also sternly asserts that the rules of a given problem should not be “trashed” and provides a comparable sports example. “To not know or follow the rules of tennis or golf or a particular improvisation is not to play tennis or golf or dance an improvisation,” Nagrin stresses. He then punctuates the importance of adhering to the rules of improvisation by comparing their abuse to “cheating” in sports. He admits, however, that in dance “we have yet to find a name for it.”¹⁰³

Teachers and directors of improvisation face three major tasks when setting up improvisational problems for their students. Before presenting these problems to students, the teachers must prepare untrained dancers or dancers trained in the romantic traditions for the new movements, directions, and demands of modern dance.¹⁰⁴ Once the students have that baseline of skills, the teacher’s role becomes one of “opening up areas of imagination” while avoiding “setting up exercises in such a way that the results will be close to what the teacher wants to see happen.”¹⁰⁵

In order to accomplish this freedom of movement within the teacher’s designed structure, students must overcome their fears of public failure. “Performing improvisation is very hard,” Nagrin explains. “If you do a bad performance of set material, you can reassure yourself that the next performance will be better...With improvisation, there is nothing to repeat and do better. If you blow it – tough – there’s no going back.”¹⁰⁶ Similar to previously reviewed musicians and dancers, Nagrin acknowledges the great risk in performing improvisation. He quips, “Improvisation is nothing if not gamble.”¹⁰⁷

Finally, Nagrin stresses that those performing true improvisation should never try to repeat anything. This poses an obvious challenge for both teachers and performers.

“Nothing is more destructive to the heart of improvisation, which is spontaneity,” the dancer laments, “than for a performer to find a ‘goodie’ and then stuff it into every subsequent performance.”¹⁰⁸

Nagrin’s work exemplifies a practical text aimed at providing exercises and problems with goals of achieving an improvised product. However, by reviewing his recommendations for the teachers and directors of improvisation, we find that he provides a similar process of skill development when compared to the previously reviewed modern dance literature. Nagrin views improvisational conduct as arising from basic skills found in modern dance as well as other movement activities, such as ballet and ballroom. Both Sheets-Johnstone and Scott also indicate the importance of developing a movement vocabulary and a keen kinesthetic awareness as precursors to any improvisational conduct.

Nagrin acknowledges that improvisation cannot simply be random actions. Rules of the given movement problem guide the movements of the dance. Sheets-Johnstone agrees as she defines a dance as a “dynamic line” in which past, present, and future movements connect organically. Nagrin also views improvisation as both a responsibility of the dancer (who is required to make fresh and novel choices within each given structure) as well as a risk to the dancer (whose performance is often public, inerasable, and unrepeatable.) Scott’s work stresses this point as well. She similarly hinges her development of improvisational conduct on the ability of the dancer to make free and personal choices in movement that create individual and personal style.

Finally, Nagrin feels that the movements developed through improvisational conduct should not be repeated regularly as this would be detrimental to the spontaneity

component of the art. Both Sheets-Johnstone and Scott would concur with Nagrin here as each of these authors utilize improvisation as a tool to develop new movements and body positions. When improvisation and movements become subsidiaries, they do not promote mere repetition but help to generate novel movements and positions.

Summary

In a similar fashion to the examination performed on the three works in improvisational jazz music, these modern dance reviews lend three different perspectives to improvisational conduct. Sheets-Johnstone provides an extremely theoretical and phenomenological account of modern dance composition. Her work stresses the importance of following and maintaining a dynamic line in performance. Scott's personal story describes the hurdles she overcame in becoming a skilled modern dancer. Nagrin's work provides a very practical text for dancers, teachers, and directors seeking to develop improvisational conduct in their choreography. Yet, side by side, these three works appear to describe similar pathways to the product of improvisation in modern dance practice.

The same can be said for the three perspectives of improvisation reviewed in jazz music in the previous section. Sudnow's descriptive perspective provides a story of the trials and tribulations confronted in learning the skills of the jazz pianist. Benson's text looks at the roots of improvisation and how the practice community of jazz and the histories and traditions found within that community greatly inform performances of jazz music. Finally, Nachmanovitch takes a more spiritual perspective on improvisation. He highlights an act of surrender, a positive attitude toward an unknown future, and a real-

time attention to decision-making that perpetuates the creative process. Comparisons between these selected jazz music texts, similar to those found in the comparisons of the modern dance texts, did not seem to reveal any major differences in the process of achieving improvisational conduct.

Whether they follow the same general avenues of skill development is another question. Can a combination of the findings from these two sets of literature reveal a series of concrete benchmarks that one passes through on the way to experiencing improvisational conduct? The next chapter tackles this question by integrating the dance and music literature.

Chapter Three

Benchmarks Experienced Along the Pathway to Improvisational Conduct

Introduction

The previous chapter reviewed jazz music and modern dance texts that analyzed and discussed improvisational conduct. Each provided evidence from a slightly different perspective – personal, theoretical, historical, spiritual, and practical. Each author described part of a pathway leading to improvisational conduct.

These scholars of improvisation agree that learning basic skills initiates the quest for improvisation but the continuous advancement of skill development remains an important necessity. Simply, higher levels of skill produce greater possibilities for spontaneous actions and improvisational performances. One dancer stresses this when he notes, “The skills necessary for improvisation presume a high level of mastery.”¹ Schroeder confirms this from the perspective of jazz music asserting that “without an adequate musical foundation, students can only approximate the improvisational process.”²

The authors also agree that random actions do not constitute improvisational conduct. Rules, histories, and traditions of each practice guide improvisation. A logical unfolding of the performance must take place. This “logicalness” of improvisation should not be confused with the logic of mathematical or scientific formulas. Improvisers do not work in a world where performing X always results in the performance of Y. However, improvisation does require an organic or natural flow from one action to the next. The relationships between the proceeding and succeeding actions must make sense within the rules of the practice.

This sense-making stands in relationships to a vague product-in-the-making. Jazz musicians call it a song. Dancers call it an idea or illusion. While the song, idea, or illusion may not be clear and pre-formed, it nevertheless provides guidance for “places to go.” It indicates that “these places” are coherent and “those places” are not. More advanced performers sense these coherencies and incoherencies with a keener ear, eye, hand, or body. Lesser performers do not feel the song or illusion with such force.

The authors further agree with a necessary change of perspective in the performer. Improvisers must accept making their own choices in their performances and rely less on blueprints and roadmaps. In the end, the musicians and dancers recognize that a deep understanding – an emersion or a dwelling in the knowledge and skills of the practice – increases a performer’s ability to see more “places to go.” From this indwelling, the potential for improvisational conduct greatly increases.

Interestingly, the authors never guarantee that any set of preparations will result in improvisation. Due to the largely inexplicable and unteachable nature of spontaneity, their pathways cannot guarantee the surprise, spur-of-the-moment actions of improvisation. Several of the authors have pointed out extreme difficulty in “being spontaneous” at will. Paradoxically, they also stress that improvisational conduct cannot exist without it. While one can successfully traverse the pathways laid out in the direction of improvisation, these experiences rely on the enigma of spontaneity.

With these general agreements noted, this chapter provides more specific points of consensus – namely of pathways leading to improvisational conduct. Three major phases of skill development will be described, preparation, risk and responsibility, and dwelling. Within each phase, several smaller, detailed segments will be described to

provide nuance and thickness. Upon completing this journey, a series of mileposts should emerge as clear benchmarks leading to improvisational conduct.

Phase One: Preparation

Both the jazz musicians and the modern dancers place the learning of significant skills and abilities at the starting point of the journey to improvisational conduct. “The fruits of improvisation, composing, writing, inventing and discovery may flower spontaneously,” Nachmanovitch writes, “but they arise from soil that we have prepared, fertilized, and tended in the faith that they will ripen in nature’s own time.”³ This preparation comes in three different subcategories, general skills, practice-specific foundational skills, and practice-specific rules, histories, and traditions. The learning and embodying of these three types of preparatory materials would be characterized by Polanyi as building and stockpiling subsidiaries for future use and for integration in practical skill performances. They comprise the raw material that the individual must learn and incorporate in order to experience the more complex actions of improvisation. As such, they are foundational and unavoidable in the journey.

General Skills

General skills consist of those kinesthetic, physical, and mental procedures used in a variety of activities throughout one’s life. Students acquire an understanding or sense of time, space, distance, force, balance, speed, up, down, left, right and others like these from a variety of places. Students incorporate understandings of these as they normally develop with age. Distinct from the more complex, practice-specific skills,

these general skills apply to so many of life's endeavors that noting their necessity in improvisation seems obvious and matter of fact.

However, Sheets-Johnstone describes a dance not only as a “dynamic line” but also as an integrated unit of force production, use of time, and use of space which she labels as “forcetimespace.”⁴ Her extensive explanation of the use of temporality, spatiality, and force production in her descriptions of dance suggests that these mundane and commonplace abilities in life should be paid some homage – however briefly.

Consequently, the journey toward domain-specific improvisation rests on a broad and firm foundation of at-homeness in the temporal-spatial world. This at-homeness includes the skills of posture, handiness, and locomotion. Broad arrays of general skills allow learners to “go” and “do” in the world around them. In Polanyi's terms, multiple subsidiaries already inform and shape new work at the keyboard, in the dance studio, or on the seat of a bicycle.

Practice-Specific Skills

Practice-specific foundational skills are less ambiguous to the activity at hand. These may include the integration of some general skills but often manifest themselves as more complex techniques necessary to execute segments of the desired performance. Sudnow and Scott both make reference to their practice-specific foundational skills by acknowledging their training in the genres of piano (classical) and dance (ballet), respectively.

Sudnow notes that he already knew “general concepts of music” before he started on his journey in jazz music and could play a song from start to finish. He and Benson

both note the importance of learning chord structures, melodic principles, scales, modes, and arpeggios. Apparently, some foundational skills cross-over from practice to practice in music. Training in classical piano, such as in Sudnow's case, or any other type of music plays some role in learning jazz.⁵

Scott also recognizes her previous training and skillful performance ability in ballet. She characterizes these learned abilities as the building blocks or "movement vocabulary" of modern dance such as jumps, turns, and balances.⁶ Sheets-Johnstone further confirms the utility of this specific preparation in other versions of dance. She indicates that participating in any dance study can "prepare the student for (modern) dance by allowing her to explore the actual components of movement in depth and thus increase her sensitivity to them and to their interrelationship."⁷ While nonliteral and post-modern choreographers often reject traditional dance techniques, as dance instructor Judith Woodruff points out, "the dancer's body is still basic equipment." Dancers benefit from any training in moving the body in unique, intentional, and disciplined ways.⁸

The repetition and mimicking of other musicians' and dancers' performances also provides desired foundational skills in this preparation phase. Sudnow makes reference to his mimicry of improvisational works and his repetitive practice in committing those works to memory. Benson notes how musicians largely copy other musicians' performances as inspiration for their own compositions. He also points out that imitating and memorizing entire jazz solos can enhance the learning of improvisation.

Scott is convinced that learning her teachers' techniques and mimicking their works initiated her learning process in modern dance.⁹ Another scholar stressed the appropriateness of drawing on these short motifs, clichés, licks of jazz, movement

phrases, or other “ready-mades” in developing the skills of improvisation. However, these skilled improvisers stop short of blessing the regular use of “ready-mades” in performances. They often warn that the use of these “should not be overdone.”¹⁰ Habits need to be launching pads, not invariable scripts.

In addition to learning these practice-specific skills, a complete familiarity with the given terrain or equipment used in the performance must occur. Sudnow emphasizes his familiarity with the general nature of the keyboard calling it his “field of engagement.” He further describes his struggles with adapting to this terrain through “jazz-seeking eyes.” Sudnow makes reference to the “tilted manner” of the keyboard divided between the happenings of his left and right hand. He also indicates his difficulty with place-finding upon that keyboard in his early stages of development.¹¹

Sheets-Johnstone and Woodruff both suggest that dancers’ “equipment” is their body. Sheets-Johnstone notes that dancers must become astutely aware of the physical limitations of their “equipment” and that “tensional and projectional qualities (of a dance) cannot exceed the anatomical limitations of their bodies.”¹² This innate kinesthetic sense allows dancers to know the position of their bodies at any one point in time. It also allows them to know what motions they can launch from that position. Thus, for both musicians and dancers, a superior, embodied awareness of the manipulation of an external piece of equipment (piano) or of the body itself increases the potential for experiencing improvisational conduct.

The on-going acquisition of these practice-specific skills tremendously aids in the development of improvisational conduct. Some can be as general as quickly interpreting the distances between two keys on a piano. Others can be quite complex, such as

mimicking a complicated movement phrase. In the end, the variety of skills embodied provides “clues” for the variety of solutions for various improvisational challenges. “Jazz exploits a stock of materials,” music philosopher Lee Brown stresses. To be proficient at improvisation, jazz musicians must master an abundance of musical figures and phases, and internalize a cache of musical forms, meters, and chord progressions. Inevitably, Brown concludes, these serve as the “frameworks for the direction the improvised solos will take.”¹³ Modern dancers’ emphasis on learning multiple movement phrases and honing a kinesthetic sense of the body would be analogous to Brown’s musical acquisitions.

Rules, Histories, and Traditions

The third part of the preparation phase requires that performers recognize and follow the histories, rules, and traditions of given practice communities. Sheets-Johnstone, Scott, and Nachmanovitch all agree that no specific “rules” or “blueprints” exist that create a modern dance or other improvised work. However, they do draw attention to certain rules that define the scope of the appropriate activities allowed and guide the logic of the unfolding of improvised conduct.¹⁴

As noted, while improvisation implies a freedom to do whatever one wants to do, jazz music and dance scholars strongly disagree that license characterizes improvisation. Nachmanovitch stresses this point when he pens, “It is sometimes thought that in improvisation we can do just anything. But lack of a conscious plan does not mean that our work is random and arbitrary. Improvisation always has its rules.”¹⁵ Benson persistently drives home the point that music is not created without guidelines or in a

vacuum. From his perspective, it always arises in a context which has its given, defined limitations. “Composers compose in a firmly defined social practice,” Benson affirms, further stressing that “one cannot compose something that wanders too far from those authoritative texts of the practice and their basic styles and expectations.”¹⁶

Sheets-Johnstone’s “dynamic line” specifically requires a logical flow within the dance composition connecting those movements performed in the past, those being performed now, and those to be performed in the future.¹⁷ Isadora Duncan agrees that coherence in improvised movement exists which “shares an organic relationship with the movement preceding and succeeding it.”¹⁸ This would imply the existence of rules that guide the selection of progressive actions within a dance.

Nagrin also notes how rules shape individual dances. He uses the analogy of “cheating” against rules as an indication of one who “trashes them.” Importantly, Nagrin does not stress the limiting effect of rules. Rather, he views rules as necessary for creating opportunities in a coherent performance. Paradoxically, freedom of expression is found within a carefully constructed framework.¹⁹ This assertion is reinforced by Benson’s claim that “composers compose in a firmly defined social practice.” Outside of that practice, without the restrictive, defining qualities of those rules, Benson suggests that the activity would make little sense. It would “not be seen as a significant activity,” Benson explains, “or else it would have a very different significance.”²⁰

It appears that teachers are the primary disseminators of the rules of improvisation within each practice. Sudnow indicates that his teacher provided him “rules of thumb,” “furnished pathways,” and a “mass of principled solutions” in an effort to help him learn jazz.²¹ Scott echoes this when she notes that she learned modern dance technique

furnished through “the eyes and bodies of my instructors.”²² In both of these scenarios, the rules and techniques provided by teachers consist of regulated recommendations based on the characteristics of the practice.

The rules, histories, and traditions of a practice constrict the variety of actions one could take when solving given problems. However, they fall short of constituting scripts or maps that specifically guide the performer where to go next. Sudnow explains that even though his teacher provided him with rules of thumb and furnished pathways, he did not provide the particulars for their use.²³ Brown confirms this when he states that these guidelines “do not tell us how a player will use this stuff.”²⁴ Nagrin also reports this from a choreographer’s point of view. “The director usually plays the major role in setting the structure and problems of each piece,” he explains. “The dancers have the creative responsibility of working out the problem.”²⁵

It appears that teachers provide rules to define the variety of activities that can happen within a practice. However, they do not provide further rules regulating choices of direction within those constraints (apart from being organically connected to past and future actions as well as being connected to the song, dance, or illusion.) In any event, the nature of these rules force teachers of improvisation into the difficult position of setting up exercises in such a way that the results will not be scripted or close to what the teacher, or any one else besides the performer for that matter, wants to see happen.²⁶ Still, rules exist in improvisation. They must be learned and followed by the budding performer in preparation of improvisational conduct.

Ubiquitous general skills, practice-specific foundational skills, and a working knowledge of the rules and constraints of a given practice comprise the subsidiary

knowledge that requires mastery and incorporation by each individual seeking the improvisational experience. “We cannot start discovering new ideas,” Polanyi points out, “without first adopting a whole framework of ideas which others have had before us.”²⁷

Nachmanovitch refers to this as the “stuffing of consciousness with knowledge and then ripening it in the unconscious.”²⁸ The individual’s capacity for learning these preparatory skills and abilities will develop into the tacit knowledge necessary in producing skillful performances. The student seeking improvisation must pay a great deal of homage to them.

The virtues of patience and persistence sustain this learning process. Sudnow notes that it took him three years of practice before he made significant achievements in “finding places to go.”²⁹ Nachmanovitch provides a less concrete timeframe. “An improviser may have to practice for years,” the musician notes, “before being able to play a totally spontaneous minute of music in which every detail is right for its own fleeting moment.”³⁰ Students must patiently dedicate themselves to the learning of these subsidiary skills without having a clear promise of improvisation’s estimated time of arrival.

Nachmanovitch notes the perseverance necessary in overcoming the trials and tribulations of improvisation.³¹ Skimping during this preparation phase may lead one to frustration and failure at worst and approximations of improvisation at best – but never the real thing.³² Strategies to persevere through this preparation process include practicing, repeating, mimicking, habituating, copying, memorizing, and other regular and patient strategies. Ironically, these preparatory actions appear to be at odds with what improvisation demands – spontaneity, freshness, surprise, unrepeatability,

creativity, and uniqueness. Yet, as the scholars of jazz and modern dance have noted, without the embodiment of these underlying abilities, access to improvisation is hampered. “The musician most prepared,” Benson stresses, “is most able to be spontaneous.”³³ Once students incorporate a significant (albeit unknowable) quantity of these subsidiaries during the preparation phase, they confront the next phase of the journey – that of risk and responsibility.

Phase Two: Risk and Responsibility

Once improvisers embody a number of subsidiary skills and form an understanding of some explicit knowledge within their practice, they then turn to using them in primitive improvisational acts. The student must “ripen” the learned knowledge into usable and applicable solutions to given challenges. Clearly, isolated, basic, simple skills repeated over and over again will not automatically produce any flourishing of improvisational conduct. Even the intensive integration of the learned material may not produce improvised conduct. It may lead to a rote repetition of composed classical music or choreographed ballet pieces.

To stay on the road to improvisation, budding improvisers must choose the path that in the normal day-to-day navigation of life we do not normally want to choose. This is the fork in the road where one arrow points to clear, scripted, preplanned, and easy to follow recipes for music and dance performances. The other arrow points to a barely recognizable Adirondack trailhead where one has trouble discerning the footpath from the thicket.

Paths to blueprints, musical scores, and choreographed dances await those who seek classical music or ballet. Those moving in this direction would not seek improvisation in their activities. Reserved for flight schedules, paycheck distribution dates, and any other event desiring predictability, only “self-effacing servants [faithful to] the score of the composer” trod this path.³⁴

The other path of improvisation instills more fear and apprehension in the budding musician or dancer. They must risk the safety and security of clearly negotiable pathways and take the responsibility of negotiating that fresh territory awaiting discovery. As Brown most poignantly notes, “Improvisation involves risk. In a situation involving risk, something of value must be at stake.”³⁵ Benson asserts that improvisers are the “ultimate risk-takers” and Nagrin points out that “improvisation is nothing if not a gamble.”³⁶

Risk

Risking failure highlights the primary fear on the improviser’s list. Failure, from an improviser’s perspective, results from the inability to maintain the dynamic line of the dance or generate long sentences of improvised jazz melodies. True improvisational conduct involves a flow of action that moves forward. The unique characteristic of being unrepeatable and inerasable underlines the inherent risk in improvisation. “Performing improvisation is very hard,” explains Nagrin. “If you do a bad performance of set materials, you can reassure yourself that the next performance will be better.” Yet with improvisation, he confesses, “There is nothing to repeat and do better. If you blow it – tough – there is no going back.”³⁷

Brown notes that in improvisational performances, moves cannot be erased and redone – hence the trepidation inherent in these practices. But he further reveals that in improvisation one can only “build on the steps one has just taken.”³⁸ Interestingly, risk-taking viewed from this perspective, whether leading to success or failure, becomes an ingredient in the desired improvised result. Without accepting that sometimes mistakes or illogical choices occur, improvisers would most likely find themselves unwilling to act. They may even default to following scripted scores leading to foregone conclusions. Either of these decisions destroys the learners’ quest for improvisation. Consequently, improvisers usually take a positive perspective on mistakes. Benson indicates that jazz musicians largely play up the image of being risk-takers. By profession, they purposefully jeopardize the finding of appropriate pathways choosing instead the possibility of completely illogical and erroneous action.³⁹ The great jazz musician Miles Davis best exemplifies this optimistic sentiment when he counseled, “Do not fear mistakes. There are none.”⁴⁰

Yet a positive attitude toward mistakes does not eliminate them nor does it provide any specific guidance in dealing with them. Nachmanovitch, however, does supply three directions one could take after making a mistake in the midst of an improvisational act. First, one could correct the mistake while playing and pretend like nothing happened. Second, the musician could play out the mistake and see if it leads to new pathways or potential for further improvisations. Finally, one could make further mistakes in an effort to eventually come back into harmony with the original plan.⁴¹

Nagrin also provides advice to those budding improvisers who worry about erring. “While you are submerged in the act of improvising, you will inevitably become

aware, at one time or another, of slipping off the track, of a dose of phoniness, of falseness, of (horrors!) breaking a rule,” the author consoles. “Don’t waste a second berating yourself or bathing in guilt at your lack of integrity. Just kick off and return to focus on your task...Mess-ups are part of the subject.”⁴² Even Sudnow places a positive spin on mistakes in the midst of his often frustrating journey to improvisation. He labels them pragmatically as opportunities to “make the best of things.”⁴³

The musician or dancer must become accustomed to this risk-taking way of life if they desire to pursue improvisational conduct in their fields. Improvisers must accept, as Nachmanovitch describes it, an “act of surrender” to a comfortable attitude of not-knowing what will come next, to an exploration of the unfamiliar, and to an existence in a swiftly changing environment.⁴⁴

The preparation phase links to the current phase through the skillful abilities of the performer. The former phase provides foundational skills necessary for creating possible improvisational conduct. Without the completion of the preparation phase, the risk of errors simply through a lack of skill would increase. Consequently, the comfort level usually associated with familiarity when confronting an unknown future would diminish. It appears to be only through an ever-increasing working knowledge of the craft, of increased explicit and tacit knowing, that the ability to embody a comfort level with risk-taking will develop.

Responsibility

Closely related to taking risks is the equally important notion of taking responsibility for one’s actions. The musician or dancer who wishes to seek

improvisational conduct must willfully choose the more risky and uncertain pathway toward their goal. This would be where the large family of people generally called “musicians” and “dancers” form sub-communities more specifically known as “jazz musicians” and “modern dancers.” This choice of direction constitutes a decision of responsibility that only the performers themselves can make.

Yet more profound than this choice of improvisational practice is the students’ choice to begin taking total responsibility for their actions. Budding improvisers must eventually break away from designed exercises, furnished pathways, and mimicked solos. Simply, they must take the responsibility for creating their own works. Sudnow clearly notes this breakaway during his journey. “I had been making what I regarded as real progress on many fronts,” Sudnow writes. “[I] sensed that I had a basic grasp over the feelings of what jazz play was like, knew about my play that for all its lacks there was the necessary potential for relevant skills to develop and figured after a year of lessons, with a firm understanding of the theory of the keyboard, chord structure, and melodic principles, I was in position to learn the rest by myself in solitary practice.”⁴⁵ Simply, Sudnow jettisoned his teacher and continued on his own. Sudnow releasing himself from the guiding hands of his teacher quite possibly put him at risk for greater frustration and failure during his journey. However, it also placed in his hands the entire accountability of each action and decision made in further developing his abilities.

This appears to be not only a major benchmark on the improvisational highway, but also a very liberating experience for the students. Scott notes how coming out from under the guidance of her instructors lead to her “flowering” as a dancer. “I no longer had a teacher to guide and stimulate my exploration of dance,” she recalls, “but the seeds

that were planted during my studies began to flower. In other words, I had the ability to teach myself and direct my own exploration.”⁴⁶ Nagrin, whose work largely guides teachers and students through exercises that explore improvisation, even admits that ultimately, “the teacher’s role is to disappear.”⁴⁷

The elimination of the teacher does not mean that all the positive gains from that tutelage disappear. Students carry their education with them mostly, but not entirely, in the form of subsidiaries that they will further nurture, integrate, and develop over time. However, the abandonment of structured instruction appears to serve as a catalyst that forces students into decision-making scenarios. Although the authors reviewed do not directly speak to this assertion, improvisation by definition forces one to make on-the-spot decisions in order to logically link one action to another. This new and personal responsibility to seek connections between the subsidiaries, to create the logicalness between movement phrases, riffs, solos, and melodies, to find the organic relationships between actions of the past, present, and future constitutes the major shift in the performer’s outlook on improvisation.

The acceptance of this new outlook and responsibility lead Sudnow to move from chromatically formed melodies to *essentially* chromatically formed melodies to purposefully using different fingerings to create personal, *far from* chromatically formed melodies.⁴⁸ Scott simply remembers the switch as a shift in choice-making regarding the execution of movement material. “I began to explore my own way of connecting the dots,” she recalls. “I was looking for my voice in a movement sense, a way that would distinguish me from my teachers and fellow dancers.”⁴⁹ Improvisers seek individuality in action that sets them apart from other performers. They seek their own paths in creating

new compositions. Critical to this seeking is the acceptance of responsibility in choice-making.

While teachers guide students' choice-making less frequently, decision-making in improvisation remains no less arbitrary. Modern dancers and jazz musicians must still follow the rules of the practice in seeking dynamic lines and long sentences of improvised melodies. However, the acceptance of risk in error and the acceptance of responsibility in decision-making, both hallmarks of improvisers, allow performers to take the personal initiative of working out given movement problems within the given structure.

Yet the acceptance of risk and responsibility is not automatic. In fact, it could be the Achilles heel that hobbles many musicians who pursue improvisation. Even more so than the virtue of perseverance Nachmanovitch highlights as necessary in becoming capable improvisers, Brown prophesizes that accepting a life of risk-taking and responsibility in order to obtain improvisational ability requires "something like courage."⁵⁰

Posed with an attitude geared toward risk-taking, confident in taking the responsibility for personal choices in action, and armed with an abundance of tacit and explicit knowledge, students eventually seek improvisational conduct through the process of dwelling.

Phase Three: Dwelling

The primary phase of our journey, preparation, allows us to amass the raw knowledge and skills needed to form the more complex and skillful actions found in

improvisational conduct. This knowledge and ability includes general skills, more advanced and complex practice-specific skills, an intimate familiarity with the “field of engagement,” and a working knowledge of the rules of each practice that guide the logical flow of activities from one note, chord, or movement to the next. During this primary phase most of the skills needed to perform improvisational jazz and modern dance are developed. However, one never really ends their preparation since any skills or knowledge learned after this phase would similarly become raw material available for future skillful performances.

The second phase requires a turning of perspective from one of safety and shared responsibility in action to one of risk and total responsibility in decision-making. During this phase, the learner continues to amass working knowledge of their practice and the skills necessary to be successful within their genres. Independence from mimicking other performer’s solos, riffs, and movement phrases as well as independence from the guidance and supervision of teachers and instructors takes place. Learners strike out on their own and, in doing so, shoulder the entire responsibility for the subsequent travel to improvisational conduct. The budding improviser comfortably operates within a practice that defines success as the ability to make continuous and logical adjustments to continuous change. The improviser accepts and embodies the risk associated with living toward an unknown future and further accepts that mistakes often constitute tolerable parts of the improvisation process.

The third phase, dwelling, runs parallel to Benson’s final stage of improvisational skill development. Benson describes the arrival at this phase as “to not only know certain things but to have so internalized these skills that one *acts* as a musician acts.”⁵¹ Sudnow

richly describes his developing ability to act as a jazz musician. At first, he only experiences glimpses of jazz in his performances. Brief, unexpected, and fleeting at best, they provide tastes of what it was like to act like a jazz musician. These experiences began to grow in frequency and in length for Sudnow. He finds himself unable to nail down the things that create jazz – they seemingly happen on their own. Sudnow describes his change in perspective from one who struggles through the process of becoming a jazz musician to one who acts as a jazz musician acts. He lives a “new intentionality” in which the piano, the terrain, the performer, and the song unite in a new and cohesive partnership. The creation of longer sentences of jazz, instantaneous invitations to new pathways, and a surety in going places results from this new intentionality.⁵² After several years of study, Sudnow found himself in an improvisational activity.

Polanyi explains dwelling as living tacitly within the wealth of subsidiary skills that one has embodied. By dwelling within these subsidiaries, by utilizing them tacitly and unconsciously, improvisers perform more and more complex skills as well as create more and more invitations and pathways to solutions when confronted with specific challenges and problems. Sudnow would find difficulty in utilizing the multiple, explicitly known skills necessary in playing his instrument without dwelling within the embodied subsidiaries of piano operation, music theory, and jazz culture. He would only be able to experience the note for note progression of very basic songs.

Quite simply, Sudnow focuses on the whole of being a jazz pianist by dwelling in the subsidiaries and explicit knowledge he amassed during phase one of his journey and by comfortably exuding the attitude of risk and responsibility in decision-making

acquired in phase two. To enter and operate in phase three, Sudnow must know the multiple parts of the focused upon whole and function within these subsidiaries to create skillful performances at the piano. By dwelling within the knowledge of the jazz practice, Sudnow (borrowing the words of Polanyi) is able to “amplify the powers of his body” and act automatically, unconsciously, and spontaneously as a jazz musician acts.⁵³

This final phase of the journey extends beyond simply having an abundance of embodied knowledge about a complex skill and an adjusted attitude toward risk and responsibility. Dwelling in the activity requires the performer to regularly and efficiently connect actions happening in the past with those that will come in the future through an ever-changing intentionality yet remaining focused on the goals of the project. Dwelling requires the performer to make split-second decisions, selecting one action or path in place of all others that beckon.⁵⁴ Accomplished improvisers must be able to create the dynamic line and the organic relationship between movements by living through intuition – by living in the future.

Brown simply characterizes this ability as being able to go on to do something without taking a time out.⁵⁵ More profoundly, Sheets-Johnstone describes this union of past, present, and future as a “pre-reflective awareness,” an “indivisible wholeness,” and an “illusion” created by the body, the movement, and the dance being united as one.⁵⁶ Nachmanovitch uses the word “disappearing” to describe this logical connection of action across time. He characterizes this condition as “becoming fully in the experience” where moment-to-moment, non-stop flow occurs and one experiences and creates each moment as it comes.⁵⁷

Polanyi's discussion on intuition and imagination helps to explain this phase of improvisational development. The perpetual selection of solutions to given problems, from his perspective, form from a casting forth of an intention to an imagined future. Polanyi argues that in order for this flow of action to take place on the spur of the moment, the performer must create solutions to the problems guided by his or her intuition. The intuition gathers information from the stockpile of the performer's tacit and explicit knowing. Performer's then imagine how different solutions will fair in solving the task at hand. One solution will stand apart as the "best" solution. In turn, the performer will focally attend to carrying out that solution. Even while performing the chosen solution, the performer will most likely be intuiting new solutions to the new problems created by recent decisions. In his experience at the piano, Sudnow described this continuous nature of dwelling detailed by Polanyi as a pulsating and accenting of continually formed "ready-set-goes."⁵⁸

While the embodying of subsidiaries, the acceptance of risk and responsibility, and the ability to sustain skillful performance across time through an evolving consciousness using no script or recipe constitutes the performers' improvisational ability, two uncertainties still remain. The first arises from the unpredictability of experiencing "spontaneous" moments. As noted before, the improvisational act relies on spontaneity. Dwelling in improvisational conduct requires an ability to make instantaneous decisions based on each previous decision and with intentionality directed toward an uncertain and undefined future. However, dwelling within the subsidiaries of jazz piano or modern dance does not guarantee that these sudden, creative, and new

directions of activity will occur, although scholars agree that such dwelling does put one in the best position to experience them.

The second uncertainty arises from one danger often experienced when performers achieve the sort of flow found in skillful performance. Performers tend to repeat newly created actions, what Nagrin terms the finding of a “goodie.”⁵⁹ Improvisers seek the goal of dwelling within a practice and achieve an effortless, logical flow from one motion to the next. However, this effortless flow, from an improvisational perspective, cannot be the regular and repeated tapping of the foot or striking the same key on the piano. Rather, it should be the improviser’s goal to make each succeeding moment surprising, fresh, and new in relationship to the previous moment.

“Improvisation can never be repeated, except by pure chance,” Carter notes, “because improvisation requires that the work evolve as a spontaneous unpremeditated process that can change directions as it unfolds.”⁶⁰ This seeking of fresh pathways needs constant consideration if one wishes to perform improvisationally. Yet the resistance to new invitations may inhibit the occurrence of truly spontaneous acts.

To counter this tendency to repeat performances, Nagrin instructs improvisational dancers to “never try to repeat” because nothing is more destructive to the heart of improvisation than repeating the same things in every performance.⁶¹ Chaplin implores modern dancers to avoid getting stuck in a rut and to always seek the new and unfamiliar.⁶² Benson agrees with her noting that the more experience one has in improvisational conduct the more often one must decide between staying in the “rut” and spontaneously seeking new directions.⁶³ Sudnow’s advanced experience at the piano exemplifies these sentiments. At one point, Sudnow becomes so skilled that he purposely

used different fingerings for the same note sequences simply to see if he could discover new pathways.⁶⁴ Clearly, for one to be truly performing improvisational conduct of any kind, the minimizing of repetition in performances is required.

Performers who arrive at the final stage of the journey find themselves dwelling in conditions that produce improvisational conduct. This dwelling should not be considered a condition in which the improviser stops learning. Rather, it includes an ability to simultaneously and unconsciously compose and perform musical works or dance pieces and store those works as subsidiary knowledge for use in future improvised creations. Dwelling is not an ending. Instead it represents the entrance into a cycle of spontaneously created activities. One may use improvisation as a tool for composition or to add to one's movement vocabulary or to embellish on a set structure. Improvisation may also be performed simply for its own sake.

Dwelling is an arrival at a place within the practice where one has the skills and abilities to transform that space into something new. The transformation of the practice may be the ultimate goal of improvisers. The goal may be, as Nagrin posits, to “depart from the norm to reach intellectual and emotional places you’ve never touched before, and find yourself performing physical feats you never imagined you could do.”⁶⁵ In the end, such elevation in intellect, emotion, and physicality transforms what were previously only songs, dances, or illusions into something special. They become transcendent, memorable experiences. They become *the* song, *the* dance, *the* illusion.

Summary

Learners of improvisational conduct pass through three distinct phases of development. First, they pass through a phase of preparation. Here, the performers develop and embody general skills in concepts such as time, space, force, speed, balance and the like as well as the more complex and unambiguous practice-specific skills of chords, scales, modes, jumps, turns and balances. In this phase of preparation, learners become highly integrated with the equipment necessary for their performances. In addition, budding improvisers need to acquire a working knowledge of the rules, traditions, and logical demands of the practice. These rules not only constrain performers to ensure their actions reside within the defined limitations of the practice, but also help guide performers in making successive, logical, and coherent decisions throughout their performances. They trade sounds for a song and movement statements for an overall illusion.

Material learned in the preparatory phase can be largely incorporated through the traditional methods of practicing, repeating, mimicking, copying, and the like. In the second phase of risk and responsibility, learners dramatically change their focus. Rather than continue to seek direction and advice from others or copy and mimic other performers' work, learners now set off on their own. By doing so, they accept the responsibility for seeking the pathways to improvisational conduct. They also accept the risk of working within an unknown future by personally making the choice of the next note to play or the next move to make. They further accept the possibility that these sections may be illogical, inappropriate, or just plain wrong. In this second phase, improvisers take the raw, embodied material learned in phase one and begin to personally

utilize, integrate, and perform it based on their own, developing an intuition of “places to go.” Perhaps most importantly, by accepting risk and responsibility, performers are liberated from the clutches of blueprints, scripts, and repetition all of which threaten improvisational conduct.

The final phase of dwelling does not come about as the sudden crossing of a finish line. Rather, the improviser, armed with an abundance of focal and tacit knowledge, begins to experience spontaneous integration of that material on a spur-of-the-moment basis and at unpredictable intervals. Performers experience “ah-ha moments” of illumination and begin to recognize what progressions in their performances “feel good.”⁶⁶ From these revelations, performers begin to see more invitations, more choices. With experience, improvisers become skilled not only at recognizing the variety of pathways available during their performances, but also in an ability to select non-repetitive, yet still logical, choices in their actions that, upon reflection, define their compositions. Only with this gradually acquired ability to skillfully and spontaneously select and integrate skills – arising from the dwelling within the subsidiaries of the activity and intending an advanced focal point – can the overt, explicit, and skillful performances of improvisation occur. No predictable arrival time marks when this ability comes to fruition. Improvisation requires living toward an unknown future. Having no explicit finish line gives improvisational conduct its inherent uncertainty.

An objective does exist, however, for those who seek improvisation. Benson describes it as an ability to “make split-second choices in the heat of the moment ... choosing to play one thing instead of another: take one path in place of all others that beckon.”⁶⁷ Nachmanovitch describes it as a merging of memory, intention, and intuition

that allows for “continuous adjustment of continuous change.”⁶⁸ Nagrin, a dancer, echoes this musician’s sentiment describing the destination as “an exercise in attuning to an uncertain existence in a swiftly changing environment.”⁶⁹ These definitions of improvisation all emphasize the primary goals of the learner: living in a constantly changing environment, working toward a skillfully informed future, and relying on the spontaneity of action at each decision-making point in time.

It should be clear at this juncture that a great deal of consistency exists not only in the descriptions of the pathway leading to improvisational conduct, but also in the description of the final, desired product. Informed by this review of literature, a definition of this goal can be presented. To improvise means to skillfully and simultaneously compose and perform actions that spontaneously provide solutions to specific problems. Individual actions are constrained by the rules of a given practice, are guided by the theme or idea of the project, and must be logically linked to preceding and succeeding activities. This definition describes the goal of the journey benchmarked by a skillful preparation, an attitude of risk and responsibility, and a complete dwelling within qualities of the improvisational practice. While the finish line of this road may be ambiguous in the timeliness of its occurrence, performers who have traveled completely down this pathway do realize when they reach it. They reflectively realize that they can now act as a musician acts or act as a modern dancer acts with the fluid qualities of a Miles Davis or an Isadora Duncan. Quite simply, they find themselves dwelling within the qualities of improvisation and living their lives from this “fundamentally different way of being.”⁷⁰

This concludes the detailing of jazz musicians' and modern dancers' perspectives on improvisation. From it, an understanding of the progressions one encounters en route to experiencing improvisational conduct in the modern dance and jazz music practices has emerged. A unified series of benchmarks leading to improvisation have been described, and a definition of improvisation has been provided. With this completed, we now launch into the cycling literature to describe not only its scope but also the benchmarks of development that parallel those found in improvisational conduct.

Chapter Four

Writings about Riding a Bike

Introduction

A review of the literature examining the composition and performance of jazz music and modern dance provides clear direction in the journey to improvisational conduct. Yet this achieves only half the goal. In order to determine if learning to ride a bicycle can lead to improvisational acts, we now review literature that describes riders' time in the saddle.

When taken together, the following review of first-person accounts of riding a bike suggest a progression of skill development from pedestrian to peloton. The order of the following literature review traces the stages along this pathway. First, an examination of the late nineteenth century experiences of true pedestrians – those who initially rode the new invention called the 'bicycle' – reveals some of the impediments to successfully performing this novel skill. Then, an examination of modern how-to writings reviews the currently accepted methods of teaching the necessary skills of riding a bike. Eight foundational skills fundamental to riding a bike emerge from these historical and how-to writings.

Following the description of these eight foundational skills, an examination of cyclists' experiences in the saddle and while riding occurs. This review will continue the skillful progression from pedestrian to peloton. Specifically, recreational, non-competitive writings will be reviewed followed by the musings of competitive professional cyclists.

Presenting the literature in this manner accomplishes two goals. First, it shows how a non-skilled rider becomes a highly skilled cyclist. Second, it shows how the foundational eight skills needed to ride a bike and the unique problems associated with each manifest themselves in the performances of skilled long-distance endurance cycling. By reviewing the cycling literature in this way, analogies can be made to the previous descriptions of beginner musicians and dancers transforming themselves into skilled jazz improvisers and modern dancers. In addition, comparisons can be made between the skillful manipulations of foundational skills found in improvisational jazz music and modern dance performances and the variations or embellishments upon the necessary eight skills of riding a bike found in the advanced cycling skills of the peloton. Upon conclusion of this review, a more or less complete developmental pathway from the less-skilled pedestrian to the highly skilled member of the peloton will be revealed.

Historical Writings

Invented in 1862 by Frenchman Pierre Lallement, the bicycle was introduced to the American public after his immigration to Ansonia, Connecticut, in 1863.¹ Lallement, like all true inventors, had the unique opportunity to preview his invention publicly. Charles E. Pratt, writing for *Outing* magazine, speculated upon the fortitude that Lallement must have needed to perform these first rides on the original “boneshaker” design.² “Any one with a vivid recollection of his own first efforts, or those of others, – with the assistance of instructors, too, the information gained from old riders, and the confidence inspired by knowledge that such machines are rideable [sic],” Pratt insists, “can understand the persistence required by the first rider.”³

Other enthusiasts for Lallement's invention would soon follow. Their reactions to mastering the skills necessary for riding one of these machines generated several descriptive articles. Unlike their modern counterparts, these late nineteenth and early twentieth century descriptions of learning to ride a bike came about with few instructional strategies. Persistence, as highlighted by Pratt, appeared to be the key to learning since no "how-to" books or time-tested methods to expedite the learning process existed. Consequently, most riders bought a bike out of curiosity, brought it home with the person who sold it to them or the friend who convinced them to purchase it, and then, at the direction of this person, proceeded to get on and fall off the bike at regular intervals until acquiring the skill simply through trial and error.

Mark Twain's satirical essay, "Taming the Bicycle," written sometime in the 1880s, provides an initial look at the trials and tribulations one encounters when first attempting to ride a "high-wheel" bike.⁴ Twain struggles to learn this uncommon and unfamiliar activity. The author describes his own body as being "steeped in ignorance," observing that "whatever the needed thing might be (to learn to ride the bike), my nature, habit, and breeding moved me to attempt it in one way, while some immutable and unsuspecting law of physics required that it be done in just the other way."⁵ With the help of a teacher he refers to as "the Expert," Twain struggles ninety minutes a day for eight days before being "pronounced competent to pedal my own bicycle without outside help."⁶

Twain clearly describes the progression he follows in learning to ride the bike, labeling these steps as the "bicycling method."⁷ Through repetition and persistence, Twain confronts and learns the basic skills of cycling in the following order: balancing

upon the machine, propelling it, steering it, mounting it on his own (the most troublesome step for Twain), and finally mastering the “voluntary dismount” – as opposed to the “involuntary dismount” at which, Twain admits, he was naturally proficient.⁸

After spending eight days with “the Expert,” Twain then proceeds to hone his cycling skills on his own, seeking “adventures (with) no encouraging moral support from the outside.”⁹ He describes his solo performances with adjectives like “weaving,” “tottering,” “uncertainty,” “slowness,” and “lumbering.” He begins to realize that the bicycle informed him of such things as the grade of the street, the consistency of the road, and the distance between himself and the curb or passing carriages. Eventually, after five days on his own, he declares himself able to “steer as well as he wants,” although he still needed to constantly “keep his attention on his business.”¹⁰

Twain was the first of several essayists to pen their first experiences of riding a bike. Others joined him through the pages of *Outing* magazine. In 1884, Paul Pastnot describes the first high-wheel bicycle he owned as “a light roadster, slim and trim, and delicate of balance, and – treacherous!”¹¹ Like Twain, Pastnot conceded to knowing “no more about bicycles, when I purchased this machine, than I now know about the condition of roads in the moon.”¹² He then describes the two long months it took him to “master the witchery of our beautiful steed” from the agonies of his initial mount to his final triumph of being able to ride.¹³

Pastnot describes a rather straightforward approach to learning to ride. He simply takes the machine to private ground and attempts to mount it by himself or with the aid of a friend. After a week of these attempts, he finds himself able to mount the bike and ride a few feet before “measuring my length upon the ground” or “having the pleasure of a

renewed acquaintance with the soil.”¹⁴ Between his mishaps, however, Pastnot indicates that the experience of being in control of the bike for only a few feet propelled his progress rapidly and profoundly impacted his psyche. “A genuine experience it was,” Pastnot explains, “the kind of experience that goes right to the quick, and impresses a man so vividly that he never forgets the place where it struck him.”¹⁵

Three years later, another author in *Outing* described his progression in learning to ride a high-wheel bike. With the aid of a friend, Chris Wheeler takes two full weeks of practice to learn to ride. Once again, he initially claims complete ignorance of cycling, describing it as “getting astride of something which was the nearest thing next to nothing which I had ever bestraddled.”¹⁶ Wheeler’s description also reveals the consistently ambiguous instruction provided by skilled performers of the time. “He (Wheeler’s friend) said that he would start me on a trip by myself, but I was to be sure and keep my feet clear of the spokes, and confine as much of my attention as possible to the twisting of the before-mentioned handle-bar to the right and left, and leave the rest to Providence and to the machine.”¹⁷ Further instruction was given for a dismount simply described as “getting off the best I could, or rather, I was to fall off.”¹⁸

The vagueness in Wheeler’s instruction exemplifies two nineteenth-century characteristics of learning to ride a bike. First, there was a lack of understanding of the combination of skills necessary for successful riding. These skills would eventually be identified through the trial and error experiences of new riders. Second, the instruction echoes characteristics of a “difficult to explain but easy to do” phenomenon. This problem of converting perceptions, feelings, and sensations into words and propositions is not unique to cycling. As noted, it is also present in improvisational conduct.

Men were not the only people who initially wrote about learning to ride a bike. Grace Denison describes the “graceful” and “restful rather than tiring” motion of riding a “safety” bicycle in 1891.¹⁹ “An erect seat, gentle pedaling, a light hand on the bar, all come with a very little practice,” Denison contends, “and after the first four or five lessons the delight of cycling makes the rider forget all the weariness, the strained muscles and sense of anxiety and impotency which overcame her on her first uncertain and unfortunate attempts.”²⁰ This author refers to three distinct phases a “lady cyclist” passes through when learning to ride, the daring, the desponding, and the doing. Denison describes this latter stage, comparable to the “ah-ha” moment described by some improvisationalists, as “when in tears and mistrust she (the rider) suddenly realizes that she is sitting firm, pedaling smoothly, steering soberly and going alone.”²¹

Denison’s description of learning to ride a bike also indicates a growing knowledge of the skills necessary to successfully perform the activity. In contrast to other early writers of cycling, such as Wheeler, Denison points to specific erroneous actions of beginners. These include such negative skill cues as “clutching the handles with a vice-like grip,” “pressing the pedals with an energy entirely misspent,” “letting the instep instead of the ball of the foot rest upon the pedal,” “[involuntarily] leaning forward or sideways,” taking “unconsidered sharp turns,” having the “eyes glued to the wheel,” and “struggling for a balance harder than any bank teller who ever lived.”²² Such descriptions begin to solidify the early and specific hurdles confronted by the beginner when first learning to ride a bike. While these indicate what skills to focus on, they still do not provide a specific comprehensive plan to perform all of them at once.

Another female rider, Jean Porter Rudd, explains how she learned to ride a safety bike in 1895. “They say it comes to you all at once” is how she characterized the suddenness of learning to ride.²³ She further describes the experience as “learning a new art to merely guide the wheel gracefully and at ease, to ride with a light touch.”²⁴ In addition, she reveals an experiential connection to the roads through the bike. “I knew I lived in a slightly undulating country,” the author explains, “but never before had dreamed that I lived all up-hill...except where it was down, and who could say which was worse.”²⁵ Gradually, Rudd became intimate with the nuances of the roads around her – subtleties revealed to her for the first time by riding a bike.

In that same year, Ernest Ingersoll initially characterized riding a safety bike as “looking easy.” Without any instruction, this pedestrian set out to learn to ride the bike on his own. While he claimed that riding a bike “looked easy,” Ingersoll’s experiences tell a different story as he admits to clinging to the bicycle “as a drowning man clutches a plank, wobble it never so wildly [sic].”²⁶ After several attempts to keep the bike upright, Ingersoll reveals a primary lesson in balancing on a bike. “What I needed to do,” he explains, “was to keep up momentum long enough to get my balance.”²⁷ Overcoming this paradox of having to maintain some speed to ensure balance constitutes one of the primary benchmarks beginners experience when learning to ride a bike. Ingersoll also acknowledges that “practice brought steady improvement” and the subsequent conquering of this skill.²⁸

The most complete treatment of learning the initial skills of cycling, however, is not found within the pages of *Outing* magazine. A book published in 1895 by social reformer Frances E. Willard aptly titled, *How I Learned to Ride the Bicycle: Reflections*

of an Influential 19th Century Woman, fits that description. Willard's book transforms learning to ride a bicycle into a liberating experience for women. More importantly, her personal descriptions of learning to ride a bike provide substantial evidence for this study.

The fifty-three year-old Willard learned to ride her safety bicycle in a similar fashion to Twain and writers contributing to *Outing*. She first learned to maintain her balance with a steadily decreasing amount of help.²⁹ After learning the nuances of balance, she then learned, in order, pedaling, turning, dismounting, and mounting – this last skill being the most difficult for her.³⁰ Willard took her cycling education to another level, however, as she gradually learned “the location of every screw and spring, spoke and tire, and every beam and bearing that went to make up Gladys (her bike.)”³¹ Such a concentrated effort to know the details of her machine seemed to be unprecedented in 1895 but, as will be seen, would be deemed quite important over one-hundred years later to the twenty-first century cyclist.

Willard, like other budding riders, also sought a great deal of help from teachers. She sought coaching that was not “too helpful” or “too timid.”³² She further encouraged new cyclists to seek instruction from those who most recently learned to ride, or as she describes it, “one who can remember his own failures and stupidity.”³³ After two months of instruction, ten to twenty minutes off and on daily, Willard finally proclaimed herself able to ride. She had mastered the skill of simultaneously balancing, pedaling, steering, taking advantage of the surface, and adjusting weight as well as the skills of mounting and starting off.³⁴

These late nineteenth-century writings detailing the experiences of learning to ride a bike are critical for at least two reasons. First, they provide some historical foundation to the development of successful strategies used today when learning to ride a bike.

These strategies have not changed considerably over time even though the design of the bike has changed from the original “bone-shakers” invented by Lallement to the “high-wheels” ridden by Twain, Pastnot, and Wheeler, and finally to the modern “safety” design ridden by Denison, Rudd, Ingersoll and Willard.³⁵ One must still confront the problems of a skill based on balance, forward motion, and a higher center of gravity.

Second, these initial descriptions reveal several of the foundational skills needed to ride a bike. Balancing, pedaling, mounting, dismounting, and steering are all highlighted by these early authors. In the next section, additional foundational skills will be revealed through the review of modern cycling how-to books. The integration of this historical and modern insight will show that the fundamental skills needed to actually ride a bike have remained consistent since the bicycle’s invention. Together they comprise much of the phase one preparation skills described in relationship to jazz music and modern dance.

Modern “How-To” Writings

In the last twenty-five years, few published cycling guides include sections explaining how to initially ride a bike. Most assume a working ability to perform basic riding skills and focus instead on improving competitive performance or understanding bicycle maintenance. De la Rosa and Kolin’s work, *Understanding, Maintaining, and Riding the Ten-Speed Bicycle*, exemplifies this tendency.³⁶ The primary purpose of a

guide such as this is to explain the advantages and disadvantages of different bicycle components, although the authors do profess a purpose of responding to the “countless, unanswered questions about how to... ride the 10-speed bicycle.”³⁷

The authors proceed to describe the proper way to ride a ten-speed bicycle, noting that “the art of cycling involves much more than learning to balance a two-wheeler.”³⁸

This is the last they mention the necessity of “balance” in their chapter titled “Basic Riding Practices.” They do, however, cover many of the other basic skills of riding a ten-speed bicycle. Mounting, riding position, handle-bar grip, pedaling, negotiating uneven terrain, and turning are covered, although the “voluntary dismount” is never mentioned.

The authors do acknowledge some of the same erroneous actions highlighted by the beginner riders writing a century earlier. A gentle grip on the handlebars, expending no extraneous energy apart from pedaling, and placing the balls of the feet on the pedals instead of the instep duplicate those skill cues specifically mentioned in the *Outing* articles. Apart from these, the authors only address rudimentary performance cycling skills designed to “make the bike go faster,” something Twain, Willard, and the others never highlight as one of their goals.³⁹

The Ten-Speed Bicycle is characteristic of modern cycling literature. First, it provides little guidance on how initially to ride a bike. Second, it focuses on developing skills for more advanced riders. In more recent years, both *Bicycling* magazine and Lance Armstrong published performance cycling skills books with similar formats. These works do little to explain the foundational skills required for riding a bike. The former positions itself as a “guide to riding faster, stronger, longer, and safer.” The latter claims to be “the training, strengthening, and eating plan behind the world’s greatest

cycling victory” (the Tour de France.)⁴⁰ Both provide little practical help for the father trying to teach his daughter to simultaneously stay balanced on two wheels, pedal, turn, brake, and dismount without incident.

Allen St. John aims more at the beginning cyclist in his how-to book, *Bicycling for Dummies*.⁴¹ St. John works through a variety of bicycle topics including the anatomy of a bike, selecting parts, selecting the proper frame size, and even safety and rules of the road. The author further dedicates one chapter each to pedaling (which includes starting off), braking (which includes stopping), and riding with kids.

In this last chapter, St. John clearly delineates the traditional and most widely used method of teaching a child to ride a bike.⁴² First, he suggests, find an open, clear, relatively flat piece of earth for the lesson. Then, you “grab the back of the saddle” and “run alongside the child being careful to stay out of the way of the pedals.” Finally, “as you feel the child gaining balance, loosen your grip and let centrifugal force takes over.”⁴³

St. John himself recalls his learning to ride a bike by this method. “I remember my first moment of solo bicycling,” the author describes. “Dad was running alongside of me. He let go. I peeked around, realized he wasn’t holding on anymore, and just kept going.”⁴⁴ Very briefly, St. John divides the basics of riding a bike into five “interrelated skill sets” – posture, pedaling, steering, balance, and braking. These are all skills highlighted for learning by the inaugural riders in the 1800s.

The traditional method of teaching a child to ride a bike remains a common practice among parents today. Recently, however, this philosophy met formidable resistance from new-school methods that teach the basic cycling skills of balance,

pedaling, steering, stopping and starting without training wheels and without mom or dad clutching the seat and running next to the beginning rider.

Howard Roth's on-line book, *Riding Made Easy: How to Teach Your Child to Ride a Bike*, is a case in point.⁴⁵ This account describes how a "frustrated" and "desperate" father worked to "break down the mechanics of riding a two-wheeler to its fundamentals and devise a way to quickly and painlessly teach these fundamentals to [his] kids."⁴⁶ Roth's description breaks down the progression of learning to ride a bike into three steps: preparing the bike, pushing off, and stopping and starting.

In step one, the bike is prepared by removing the training wheels (if being used) and the pedals and lowering the seat considerably. This "scooterizes" the bike giving it a lower center of gravity. This adjustment, consequently, allows the child to "walk" the bike and find his or her own balance.

The second step requires the child to "walk" the scooterized bike by using small steps. As the child grows accustomed to balance, the encouragement of increasingly larger steps ensues. "Your child won't notice," Roth points out, "that for brief moments, he or she is balancing on a moving two-wheeler."⁴⁷ As the child becomes more and more comfortable with taking larger and larger steps, he or she will eventually "experiment with different ways to push off and ride [which] means your child is 'feeling' the balance of the bicycle."⁴⁸

The child also learns to turn or steer during this step. Roth notes that as the child keeps his or her feet up longer, "the bicycle will begin to tip in one direction or another. At that point, tell your child to turn the handlebar in the direction of the tilt."⁴⁹ By the

end of step two, the beginning rider should be confident in keeping balance on a bike and turning.

Step three in Roth's progression finishes the tutelage by addressing stopping and starting. Pedals must be put back on the bicycle and the child must get used to coasting with them. The use of the brakes is then introduced. The skill of stopping and dismounting requires the child to place the right pedal in the six o'clock position, lift off the seat by standing on the pedals, and then place the left foot on the ground as the bike comes to a stop. The application of either foot or hand brakes to slow the bike down necessarily occurs simultaneously to these actions.⁵⁰

The simultaneous actions to start a bike moving require a performance similarly complex to that of stopping. Roth advises the learner to straddle the bike and put the right pedal in the two o'clock position with the brake activated. The rider should then release the brake, push hard on the right pedal, push off the ground with the left foot, and then continuously pedal while lowering him or herself into the saddle.⁵¹ Once the young rider masters starting and stopping, the bicycle seat can be raised slowly in accordance with the child's ability and confidence.

Roth's three steps in teaching a child to ride a bike – preparation, pushing off, and stopping and starting – can be slightly expanded to reveal a detailed sequence of progressive benchmarks. In order, Roth's method teaches balance, steering, stopping, dismounting, starting, and pedaling. Once again, these components do not appear to be much different than those skills highlighted by the inaugural cyclists in the late nineteenth century.

Roth is not the only cycling enthusiast who has a new-school philosophy of teaching the skills of riding a bike. Matthew S. Biskup, Jr. also published an on-line book delineating this progression. Biskup recounts how his mother taught him to ride a bike in his work, *Learn to Ride a Bike in Less than Two Hours and Nobody Gets Hurt!: The Definitive Guide for Teaching Yourself or Others to Ride a Bicycle*.⁵²

Biskup describes a slightly different pathway than the one outlined by Roth to successfully riding a bike. Biskup's first step places the learner at the top of a slightly sloped parking lot. The learner then coasts down the hill, using the feet as both brakes and support (if necessary.) "The further I got down the driveway without touching it with my feet," the author recalls, "the more I was overcoming the primary obstacle to riding a bike...balance."⁵³

While coasting down the gentle hill, Biskup's mom also encouraged him to keep his arms relaxed "like spaghetti" and "steer into the fall" whenever he started to lose his balance. This "felt wrong" according to Biskup's recollection, but eventually he understood that riding a bike involves "a series of corrections with the handlebar that keep the rider vertical." A tense upper body reduced responsiveness.⁵⁴

Once the young rider mastered coasting down the hill, turning, and looking out ahead of the bike (and not down at the front wheel), Biskup's mom instructed him on how to pedal. To learn this skill, the young rider needs to be at the bottom of the slight slope facing uphill. This not only limits speed but also forces the rider to keep pedaling in order to maintain balance. Learning to pedal and start off occurs in an identical method to Roth: right pedal at two o'clock, press down hard on the pedal, push off the ground hard with the left foot, and then begin pedaling. For Biskup, this starting off gave

him the most problems. Eventually he could do it, and he experienced a self-propelled balance going uphill similar to the gravity-propelled balance felt going downhill. Flagged as a turning point for Biskup, he described this “comforting” experience as being “reminded that you already know how to do something that you’re being challenged with.”⁵⁵

Biskup presents a slightly different pathway than Roth in learning to ride a bike. Roth’s steps, which require some modification of the bicycle, teach the learning progression of balance, steering, stopping, dismounting, starting, and pedaling on a relatively flat surface. Biskup’s steps, on the other hand, require little modification to the bike. He follows a progression of balance, steering, relaxed upper body, visual focus “way ahead, not down at the wheel,” starting off, and pedaling taught on a slightly graded hill. Merging these two new-school strategies, the pathway of skill development would progress through the following skills: balance, steering, relaxed upper body, visual focus, stopping, dismounting, starting, and pedaling. Combined, these two methods formulate analogous pathways. Comparatively speaking, this order appears considerably different than the progression of posture, pedaling, steering, balance, and breaking derived from St. John’s work. However, the foundational skill components from both the new-school and traditional methods of learning to ride a bike are the same and also parallel the original, nineteenth century authors’ descriptions.

Regardless of the strategy used, these methods recognize that one cannot ride a bike successfully without learning to simultaneously perform a group of eight skills. These foundational skills begin with achieving a continuous, dynamic state of balance on the machine. While in this state of balance, the additional foundational skills of visual

focus, steering and pedaling, starting and stopping, mounting and dismounting must be performed. Over one hundred years after Lallement first rode his invention, the foundational skills of riding a bike appear to remain unchanged.

Through the discovery of these foundational eight skills, we can now identify specific problems unique to the cycling activity. The primary challenge faced by beginners is the constant necessity of performing this skill set as they ride. In these early stages, however, beginning riders pay more conscious attention to each individual skill than performing all the skills in concert. Only as they progress in their development do riders begin to perform these eight skills simultaneously and unconsciously.

At the highest performance levels, cyclists embody these foundational skills. They find themselves paying minimal conscious attention to these necessary abilities. Even though these skills become incorporated into the performer, one simply cannot fail to perform certain skills at certain times without risking a crash. Both the beginner and the professional must, consciously or unconsciously, attend to balance and visual focus, steering and pedaling, starting and stopping, mounting and dismounting.

The need to perform these skills produces other unique problems for cycling. Some problems confronted arise from dividing attention among the eight skills. For example, riders must continuously pedal to keep the bike moving. This greatly aids in balance. However, this cannot be the only skill focused on. Rather, riders must remember to pedal constantly while also remembering to visually focus ahead and steer to avoid obstacles. Other problems involve compromising balance due to a fear of speed. More speed yields an easier maintenance of balance on the bike. However, beginners initially fear speed, and their hesitancy results in a wobbly situation. Similarly, in order

to mount a bike, one must go from a complete stand-still to a completely stable and moving position on the bike almost instantaneously. The reverse is true of dismounting and stopping. One must slow to a point of losing balance and then stop and dismount. Another challenge is the problem of holding on versus steering. Beginners who clung to the bicycle with a white-knuckled grip and a tense upper body proved counter-productive to steering the bicycle.

As noted before, these modern how-to writings, when combined with the historical writings, comprise much of the phase one preparation skills described in the jazz music and modern dance literature. Similar to these music and dance practices, the unique problems associated with cycling become more easily solved as the cyclist progresses and embodies these foundational skills. New skills, such as turning with speed, pedaling with perfect circles, and ascending and descending can eventually be added to the developing cyclist's abilities. However, the following section of literature reveals that these newly acquired, more advanced skills must be performed without eliminating the performance of any of the foundational eight skills. In fact, these new skills are often embellishments of or combinations of elements within this foundational skill set.

Recreational Perspectives

Balance and visual focus, steering and pedaling, starting and stopping, mounting and dismounting comprise the foundational eight skills necessary for riding a bike. Acquiring these skills does not assume mastery in the saddle, however. They only provide the ability to consistently, safely, and willfully ride along on two aligned wheels.

Writings of bike riders who have already embodied these foundational skills and moved on to learn and master the more advanced skills of long-distance endurance cycling build from these beginner perspectives. Still a long way from riding in the peloton, these mostly non-professional, non-competitive, non-racing riders explore their experiences on a bike. Their writings reveal parts of the pathways they traveled while fine-tuning and enhancing the foundational eight skills. Concurrently, they describe the development of new skills derived from the mastery and manipulation of the fundamental eight abilities.

The Ridings of the Masses

Two anthologies of bicycle quotations, thoughts, and essays contain a number of cycling perspectives from pedestrian to peloton. Bill Strickland's collection of bicycle quotations provides not only a valuable starting point in tracking down other cycling references but also some insights by both the editor and the contributors. *The Quotable Cyclist: Great Moments of Bicycling Wisdom, Inspiration and Humor*, contains over nine hundred quotations from over four hundred cyclists, writers, poets, politicians, physicists, actors, athletes, and other non-cycling professionals. It also includes short introductions to each chapter written by Strickland himself providing, at times, glimpses of his own personal experiences on a bike.

Some quotations in this collection speak directly to those experiences of first learning how to ride a bike. "I took a deep breath, looked for a final time at those comforting tires, pushed off and, to my amazement, actually went somewhere," one forty-six year-old contributor describes. "I was awkward. I was ungainly. I hadn't gone more than three or four feet, but by God I felt the balance and that was enough. I did

it!”⁵⁶ George Bernard Shaw, one of the more recognizable names quoted in the book, highlights the virtue of persistence necessary for learning to ride. “The cyclist has acquired a new habit,” Shaw notes, “an automatic unconscious habit, solely because he wanted to and kept trying until it was added into him.”⁵⁷ Quotations such as these make direct reference to the “ah-ha” moments of learning to ride a bike. Cyclists suddenly “get it,” and the sensation of being upright and balanced on two aligned wheels becomes part of them and is never forgotten.

Strickland categorizes other quotations by common experiences while riding a bike – or falling off it. Three quotations in Strickland’s section on this latter topic refer to the learning that arises from such mishaps. “You need to know why you fall. It’s how you learn,” Swiss stunt rider Hans Rey explains. “If you crash and you don’t know why, that’s the time to slow and relax awhile.”⁵⁸ Ron Kiefel, a United States professional racer notes a sort of learned adjustment embedded within crashes. “The way you learn, is you go around a corner and crash. Then you know that’s too fast so the next time you go a little slower.”⁵⁹ Even legendary professional women’s cyclist Juli Furtado chimes in on the educative value of crashing. “The secret is pretty simple,” Furtado explains. “The slower you go the more likely it is that you’ll crash.”⁶⁰ Crashing represents an extreme form of feedback to the cyclist. Reasons for crashing appear to point directly at a failure to properly perform one or more of the eight foundational skills. As noted by all three of these authors, after a crash the cyclist should regroup, determine the skill minimized or ignored, and then focus on the proper performance of that skill in similar future situations.

The numerous descriptions in Strickland's book support the current existence of the foundational eight skills. They also point to the creation of new skills, such as turning or descending with speed, through the manipulation of these eight skills by the more advanced rider.

A second anthology provides more personal and experiential cycling insight. The pages of *Bicycle Love: Stories of Passion, Joy, and Sweat* provide short, personal stories written mostly by common, unknown cycling enthusiasts. This work "tells of all aspects of bicycle love: not just the mad love we have for our bikes as objects, but also the love of cycling, the rides we do out of sheer joy, and the love that grows in our lives because of bicycles."⁶¹ It contains passages describing "the wondrous infatuation we have as children for our first two-wheeler, to adolescent cycle-mania, to more subtle, complex adult relationships."⁶²

Like the *Quotable Cyclist*, this work includes a plethora of details covering a variety of cycling topics that need not be completely covered here. However, a couple of passages specifically geared to one's first experience on a bike deserve highlighting. The first recalls a cyclist's experiences of learning to ride a bike at the age of seven. Like other new riders, this author held the belief that riding a bike was easy. "My older brother would hop on his bike and just go, supported by nothing, it seemed, but mysterious forces and dumb luck," the author recollects. "This gave me the impression that when you got on a bike, all sorts of random things could happen. How could a person move so fast – and so high off the ground – and not be terrified?"⁶³

Another author describes his initial frustration with the limits of training wheels. After having them removed, he tells the story of his first unassisted and surprisingly

successful ride. “I had seen the newspaper boy and I knew how to get started,” the author describes. “I held on to the handlebars and started running with the bike. Then, as the bike gained speed, I jumped onto the seat...I felt as if I was flying, as if at any moment, my bike would lift off and I’d head for the moon.”⁶⁴

This collection weaves a vivid description of what riding a bike means to both the youth first learning to ride and the passionate adult who performs miles upon miles every day for a variety of reasons. Like Strickland’s book, this compilation provides evidence of cycling skill development including the eight foundational skills and combinations of them.

Experiences Outside the Peloton

Stand-alone works that exude the more experienced perspectives of cyclists also exist. These advanced riders appear to operate with an unconscious attention to the foundational skills of the activity. Beyond the incorporation of these skills, these riders begin to make reference to a transcendent connection to the bike. Instead of a separation between themselves and the bike, advanced cyclists feel the bike as an extension of their bodies and confront their world as a cohesive bike-rider unit.

Paul Fournel, who never became a bike racer because he felt he “needed the bike more than he needed victories,” recently published a series of personal, descriptive observations from the saddle.⁶⁵ Covering a variety of subjects from learning to ride and crashing to descending and racing, this French translation provides a variety of short, often philosophical reflections of personal experiences while riding a bike.

In one musing he describes his first tremulous moments on a bike. Learning through the traditional method, Fournel characterizes his first encounter with balancing on a bike as a “miracle.” “I took to the field in front of our house,” Fournel recalls, “and followed its slope down, gaining momentum. I was looking for the magic moment that makes the duo stay up when it should go down...And then one morning I no longer heard the sound of someone running behind me, the sound of rhythmic breathing at my back. The miracle had taken place. I was riding...I’ve never gotten over this miracle.”⁶⁶ Fournel’s “miracle” once again makes reference to the “ah-ha” moment characteristic of riding a bike as well as the resilience of this skill over time.

Fournel relates other stories from his youth, depicting how the bicycle shaped his concept of space. “My world as a child was always more vast than my village,” the author explains. “As soon as I knew how to ride, I grasped the idea of a greater world.”⁶⁷ Fournel explains how the bicycle taught him more than just the sensation of sore legs. He describes how the transformation from pedestrian to cyclist changes a person in four unique ways. First, the rider confronts “a new language you’ll spend the rest of your life learning, and you transform every move and every event into a mystery for the pedestrian.” Second, you slowly become familiar with a history of cycling legends, or as he refers to them, “the breadth of the great cycling peloton.” Third, you will come to realize that when you get a bike and start to ride, it is not to forget a machine, but “to connect with it.” Finally, Fournel claims that to get on a bike is to “get a hold of the landscape,” to understand its nuances and details through the road’s textures, the terrain’s undulating soil, and the atmosphere’s ever-present wind.⁶⁸

Fournel's collection of reflections provides an insightful look at how a devoted recreational rider experiences and interprets his world through his bike. As this author points out, "the mounted cyclist is a different person," one who's *derriere* affords the "locus of a particular intelligible sensitivity" providing a "secret connection to the world."⁶⁹ Fournel connects to the landscape through his bike in such an intimate manner that he claims to know some parts of his world "by heart." "The pace of the landscape going by and the sequence of my sensations," he explains, "are enough to tell me where I am."⁷⁰

Fournel's work describes the experiences of a child who learns to ride a bike, becomes enthralled with its opportunities, and is transformed into a different person – a cyclist. Unlike the how-to books reviewed previously, this collection would not be of much benefit to the beginner. However, Fournel's insightful, honest, and often passionately described personal tales from the saddle reveal small segments of cycling knowledge learned through his experiences upon two wheels. His perspective carves a very unique niche within the cycling literature – a highly knowledgeable cyclist writing from a primarily recreational perspective.

Moving toward more competitive perspectives while in the saddle, yet still not racing, Paul Howard recounts his experiences of shadow riding the 2003 Tour de France in his published diary, *Riding High*.⁷¹ Shadow riding consists of cycling the exact stages of *Le Tour* on the same days it takes place (or, in some cases, the day before or the day after.) To accomplish this task, Howard plans to mount his bike often by four o'clock in the morning and ride each complete stage of the Tour before the professionals ride them

later that day. Apart from one stage missed due to illness and three stages not finished for other reasons, he succeeded in his quest.

Howard sought to test whether or not an ordinary cyclist could “take on the Tour itself.” This journalist and amateur racer explains his rationale for undertaking such a test: “I decided to see if it were possible to ride the Tour de France route; possible for a mere mortal like me, that is – each year hundreds of professionals prove it is quite within the scope of human achievement.”⁷²

Howard’s writings provide us with two perspectives on learning the more advanced skills of riding a bike for long-distances. First, they show what happens to a bike rider when he tries to act like a cyclist. He provides great insight into the logistical planning necessary to even attempt his project – booking hotels, finding adequate restaurants, and even staying on the Tour route in the grayness of the dawn all presented major obstacles for Howard during his trip.

More importantly, Howard delineates his thoughts, feelings, and physical sensations while spending four to eight hours on a bike every day for three weeks. During his training rides, he confesses that “staying out on the bike on your own can actually become a bit of a chore,” and that “the boredom of *having* to cycle a certain number of miles” could become quite tedious.⁷³ In the early stages of his shadow tour, he recalls the conscious part of his mind being taken up solely with the immediate concerns of moving forwards on his bike – “watch that pothole, keep a nice rhythm up this slight hill, enjoy the descent on the other side.”⁷⁴ During other stages he describes himself as “looking for something, anything, to enliven proceedings.”⁷⁵ On truly toiling days, he resorts to mind-games. “I try and deceive myself into thinking that I’m going well,”

Howard recalls through a fog of fatigue, “but I can only concentrate on one thing at the moment and that thing has to be keeping going.”⁷⁶

Such descriptions show how the embodiment of the foundational eight skills allows for the development of other cycling related skills. Howard pays close attention to developing his fitness level, getting appropriate sleep, and eating the proper amounts of calories just to accomplish the task. The ride forces Howard to pay close attention to the temporal and spatial dimensions of riding long distances – most prominently noted when riding uphill. Taken together, Howard’s insight reveals how cyclists must pay attention to the endurance and efficiency of their bodies as the engine for the cycling machine. This endurance and efficiency however begins with his mastering, embodying, and manipulating the eight foundational skills.

In one example, Howard describes his body’s adaptation to endurance and efficiency while riding the early stages of the Tour route. He documents how his preparation and performance on these early stages primed him for other, sometimes more difficult, future stages. “Although tomorrow may be the second-shortest road-race stage, it will still require considerable effort – it’s only just under 100 miles long, it will take a good six hours of riding, and it includes a category-three hill which climbs to over 600 metres – 2,000 feet in old money.” More confident than in the earlier days of his challenge, Howard then admits, “Until two weeks ago I’d have gone to bed apprehensive at the prospect of taking on such a ride; now I’m in danger of thinking it’s too easy.”⁷⁷ Note that Howard no longer concerns himself focally with performing any of the foundational eight skills during this scheduled ride. Rather, his concern is redirected to mustering the physical effort needed to complete the task.

Another author writes about her connections with her bike in achieving transcendent experiences. Diane Ackerman, author of *Deep Play*, a work that explores the more transcendent and intensified experiences associated with emotionally and physically vigorous activities, provides some wonderful descriptions of how riding a bike impacts her life.⁷⁸ “Few sports allow you to dawdle at speed while you savor and explore the world,” Ackerman explains, “thus biking has become an important axis for my life.”⁷⁹ Describing a bicycle as a “fretless instrument” upon which one needs to “be bold, guess fast, and finesse the rest,” Ackerman places a spiritual hue on her experiences while riding. In a more notable moment of enlightenment, the author finds herself being “one with the bike, intuiting gears in a Zenlike trance of muscle and power.”⁸⁰

While the everyday cyclist may raise an eyebrow at the mind-body-bicycle connection described here, such transforming experiences on a bike and a fusion of cyclist and cycle do not appear all that uncommon at the higher levels of skill mastery. The beginner biker may find delight in the initial success of a dynamic state of balance on two wheels, but invitations to these more integrated and transcendent experiences may be out of their reach. The beginner will first have to embody the fundamental skills of cycling and then manipulate the bicycle by intuiting combinations of the eight foundational skills.

Mike Magnuson’s work, *Heft on Wheels: A Field Guide to Doing a 180*, also explores the transformation of novice cyclists into a highly skilled riders. In this memoir, Magnuson transforms himself from an overweight, beer-drinking, cigarette-smoking lummoX into a healthy cycling fanatic. He changes from a non-cyclist to one who goes on regular groups rides with his local cycling club and participates in races and challenge

rides. Magnuson's honest and often humorous perspective on his life provides some unique details of someone who connects passionately with his machine.

At one point, the author delineates six steps to becoming a "better cyclist." Step one: quit smoking. Step two: "Go someplace where there's a really big mountain and see if I can ride up it." Step three: sign up for a one-hundred mile charity ride, a century ride. Step four: quit drinking. Step five: quit eating. Step six: "Survive all this, take the bike out, and kick people's asses [in races]."⁸¹

Magnuson's tongue-in-cheek steps to cycling success highlight what it initially takes to become a better rider – set goals, focus totally on the activity, practice and learn skills in demanding situations, and then utilize the new skills during future rides. His basic perspective on how one learns advanced cycling skills is similar to the advice given by those riding in the peloton. "We learn by getting our asses kicked," Magnuson asserts. "If you want to do this the simplest, least humiliating way, you must first learn how to kick your own ass."⁸² Magnuson, like most advanced cyclists, dwells in the activity's foundational eight skills. Once mastering this ability, he then works on his fitness, endurance, and efficiency while in the saddle. As his steps indicate, his method for achieving these skills revolves around miles upon miles and hours upon hours of riding.⁸³

Magnuson's ability to portray the trials and tribulations of an avid, advanced, non-professional rider provides a good link between recreational cyclists and those riders who have learned a large number of advanced and complex cycling skills. He transformed himself from someone who simply rode a bike to someone who speaks and behaves as a cyclist. Through his writings, Magnuson portrays himself as being very accomplished in unconsciously performing the eight foundational skills. His writing also reveal that his

skill development beyond the embodiment and fine tuning of these skills is largely based in the temporal and spatial considerations of fitness development and endurance training.

These non-professional perspectives provide us with some insight into the experiences of the more advanced rider. For a variety of reasons, they wanted to experience something more than simply riding a bike. They wanted each bike riding experience to be better than the previous one. Many chose to pursue more complex and specific cycling skills to achieve this goal. They proceeded to enhance and expand their abilities on a bike beyond the foundational eight skills of balance and visual focus, turning and pedaling, starting and stopping, mounting and dismounting. “Invariably, as people get into a sport,” one owner of nine bikes explains, “they start to get ‘in the know,’ and as more time went by, I realized that my bike was not cool. An upgrade was required.”⁸⁴

By seeking “upgrades” and learning the advanced skills of long-distance endurance cycling, these everyday riders uncovered additional pathways to experiencing their world through the bike. As noted, these upgrades include achieving higher levels of fitness and eventually becoming more efficient in the conduction of power from the body to the machine. The result of these upgrades includes a modified perspective of time and space (one hundred miles and six hours on a bike does not seem so long anymore.), and experiencing the sensations of connecting with the bike. Riders now seek to maximize their efficiency in performing the foundational eight skills so that they can attend to the other skills needed for extended travel on the bike and successful performance in bicycle races.

It appears that developing cyclists desire to successfully manipulate the foundational eight skills over longer periods of time and over longer lengths of road. This may be analogous to Sudnow's desire to produce long, full sentences of jazz. To keep the music, or the ride, moving constantly forward toward a performance goal becomes the focus of attention. In doing so, not only do the foundational skills become more and more fine-tuned and embodied in the rider, but cyclists now receive more invitations to activities on a bike previously unavailable to them.

Writings from the Peloton

Lance Armstrong's memoir, *It's Not About the Bike: My Journey Back to Life*, is an inspirational story of one man's successful fight against cancer and subsequent return to the winner's podium.⁸⁵ His follow up book, *Every Second Counts*, contains similar inspirational stories about cancer survival and life in professional cycling.⁸⁶ Through these books, Armstrong reveals some of the pathway leading to advanced cycling as well as a detailed explanation of the inner workings of the peloton.

Armstrong rarely details his first experiences on a bike. This should be unsurprising since he dwells in a world completely unlike that of the beginner. He does, however, provide an answer to the question "Why does any kid love a bike?" "It's liberation and independence, your first set of wheels," he explains. "A bike is freedom to roam, without rules and without adults." Armstrong spends little time with this type of discussion, noting that "Athletes don't have much use for poking around in their childhoods, because introspection doesn't get you anywhere in a race."⁸⁷

His experiences while riding his bike in the upper echelon of the practice do deserve some review, however. For example, he describes crashing as “the wheels disappearing out from under you.”⁸⁸ He explains the expansion of time on ascending slopes and characterizes the word “long” as a relative term. “A minute can seem like a month when you’re pedaling uphill,” he notes, “which is why there are few things that seem longer than the Tour de France.”⁸⁹ He also describes to his readers what he thinks about when spending six or seven hours on a bike. “I thought about cycling,” he explains with a lack of flare. “My mind didn’t wander. I didn’t daydream. I thought about techniques of the various stages. I told myself over and over that this was the kind of race in which I had to always push if I wanted to stay ahead. I worried about my lead. I kept a close watch on my competitors, in case one of them tried a breakaway. I stayed alert to what was around me, wary of a crash.”⁹⁰

Armstrong reveals a connection to the bike that beginners may not at first be able to experience. It echoes Ackerman’s description of riding as a “Zenlike trance of muscle and power.” “The physical familiarity you gain with a bike is something you don’t feel for any other vehicle, no matter how sweet the ride,” Armstrong professes. “There are times when I swear a bike is merely an extension of my arms and legs.” Further explaining this phenomenon of merging with his equipment, Armstrong notes, “A bicycle, no matter how elaborate the technology or how advanced the composite that it’s made of, remains driven by the body. There is something fundamental about a bike: a frame with a crank, a chain and two wheels, powered by nothing more than my own legs. On a bike, you are under your own power, directed by your own hand. Your motor is yourself.”⁹¹

Armstrong's inspirational stories of rebounding from a fight with cancer reveal some of the developmental stages he had to re-encounter on his way back to victory. He describes his hours upon hours in the saddle, his thoughts during that time, and the physical transformations and sensations he experienced while making his return. His insights confirm the fact that Armstrong and other competitive riders are masters of the eight foundational skills.

In contrast to the recreational rider, however, these competitive riders' intentions focus solely on going faster than other riders. Simply, these riders seek a high level of efficiency in the transfer of power from their working bodies to the bicycle. Strategies to accomplish this often include a heightened attention to balance on the bicycle. This allows the riders to focus their energy on moving the bike forward with as little wasteful side-to-side movement as possible. Another strategy is the idea of "perfect circles." "Stomping" describes how normal beginners pedal their machines. They apply force to the pedals in a downward motion only. In contrast, highly skilled cyclists seek the uniform application of force to the pedals throughout each revolution. This harnesses every possible watt of energy from the body and efficiently releases it to the machine. Both of these strategies are not often used outside the peloton. However, they both indicate a focus not necessarily on a completely new skill but on an improvement or embellishment of one or more of the foundational eight skills.

In another example, Michael Barry, former team member of the United States Postal Service professional cycling team and current team member of the Discovery team, recently released an account of his experiences in the world of competitive cycling. *Inside the Postal Bus* includes a variety of first-hand stories of life riding with the most

recognizable cycling team in the United States at that time – U.S. Postal.⁹² In this book, Barry explains not only what the cyclists actually do for a living but why they do it and how these actions affect the success of the team. Barry provides a penetrating look at the lifestyle of a professional cyclist from the cyclist's own perspective.

Barry covers a variety of cycling topics throughout his work including the strategies of time-trialing, climbing, descending, and the workings of the peloton. He also provides some descriptions of the professional cyclists' body as well as their traditional habits and duties. For example, Barry notes that one can recognize a truly fit rider by their actions in the peloton. "Riders who are fit and fresh can accelerate quickly and pedal smoothly," Barry explains. "Their bodies remain motionless while their legs turn over the pedals comfortably, and they breathe without laboring."⁹³ He further explains the relationship between an acute attention to balance on a bike and its manifestation in performance. "On a bike it is crucial to be balanced and well positioned," he notes, "so that the rider can comfortably produce as much power as possible for hours."⁹⁴

These details of the life of a professional cyclist reveal abilities and actions possible at the highest levels of performance. Barry makes no attempt at guiding pedestrians in learning these skills but he does provide a portal through which non-cyclists and novices can view these end products and gain an appreciation for the skills of the competitive cyclist. His writings reveal that advanced cyclists pay astute attention to the manipulation of the eight foundational skills with the goal of winning as many races as possible.

Bruno Schull's work, *The Long Season*, and Tim Krabbé's book, *The Rider*, also provide windows through which readers can see the ins and outs of competitive cycling. These two authors also make little effort to explain the process of learning to ride a bike. However, they do describe actions, strategies, and experiences while participating in bike racing.

Schull's book tells the story of how one cyclist attempts to move up in the California amateur racing circuit rankings.⁹⁵ Spanning one full season, this competitive memoir describes the efforts of the author as he pursues this goal. Although much of this book explains the strategy of racing within the peloton and first-person descriptions of the author's thinking while riding in races, Schull does provide some good descriptions of skilled cyclists. "Watching the professionals was always beautiful," the author recalls, "the way they pedaled so smoothly on the high gears and moved through the peloton...they had honed their skills through years of training, hours of hard work, and monomaniacal obsession with their sport."⁹⁶

Schull at one point recalls how he felt on the first ride of his season. "For a moment the bicycle seemed unfamiliar," he recollects, "and then I sat down, the pedaling smoothed, and I rode away."⁹⁷ His brief unfamiliarity with his bike reveals something that professionals at the highest levels of cycling would most likely never experience. "Real cyclists" ride virtually all year long and would never get a chance to become "unfamiliar" with their machines.

Krabbé's work, *The Rider*, further removes us from any beginner's perspective on cycling.⁹⁸ This Danish translation describes the first-person account of a specific professional bike race held in France. A quintessential cult classic, it assumes that the

reader knows a great deal about cycling. Kilometer by kilometer, Krabbé details the tactics, positioning, thoughts, and strategies in riding a one hundred thirty-seven kilometer half-day race. In doing so, he reveals details of how a professional cyclist acts, or as he puts it, the “five thousand hours of training and three hundred nine races (competed in) just to play the cyclist.”⁹⁹

Like the other highly skilled cyclists previously reviewed, Krabbé also explains how riders’ skill level allows their bodies to join with their bikes and become one complete unit. “My muscles were able to fit themselves to my bike,” the author describes, “they actually liked it: muscles are tractable and learn tricks fast.”¹⁰⁰ He also provides insight into the sensations that a competitive rider feels during a race. For example, he highlights how the rider controls the degree of suffering experienced on the bike through the action of shifting gears. “Shifting is a kind of painkiller,” Krabbé notes but further clarifies that such an action may also be interpreted as “the same as giving up.”¹⁰¹

The competitive cyclist’s perspectives contrast somewhat from that content found in the historical, how-to, and recreational literature. This should not indicate that these competitive memoirs have no value to an improvisational cyclist. On the contrary, they provide abundant details of the actions within the peloton, the experiences associated with membership in that group, and the continuous focusing and fine-tuning of specific skills that further increase performance. In addition, these works provide descriptions of certain skills that can only be performed by the experts of the field. While these books do not supply the specific “steps to success” that the others may provide, they do provide what may be interpreted as descriptions of the end points of highly skilled performances.

Summary

This review of the cycling literature spans the evolution of man from pure pedestrian to true cyclist. Beginning with a historical look at pedestrians first learning to operate a new invention – the bicycle – we uncovered the experiences of those who desired nothing more than staying upright on two aligned wheels. Seeking no other performance related skills than balance and visual focus, turning and pedaling, starting and stopping, mounting and dismounting, these early riders were the first to explore an experience shared by millions of people today.

More recent literature reveals the more complex actions one can potentially perform on a bicycle. These writings include a sample of modern “how to ride a bike” texts. These methods add to our growing knowledge of what skills are needed in order to successfully ride a bike. The skills highlighted in the modern texts are much the same as the eight foundational skills sought by those inaugural riders of the late 1800s. It appears that no matter what skill one wishes to perform on a bike, one must always, consciously or unconsciously, pay homage to those requirements that together constitute riding a bike – balance and vision, turning and pedaling, starting and stopping, mounting and dismounting.

We then moved beyond the foundational skills of riding a bike and discovered literature written by those already proficient in the saddle. Reviewing the writings of recreational cyclists revealed descriptions of skills learned by those who sought richer experiences on a bike. Cyclists at this level easily and simultaneously perform the foundational eight skills without paying much conscious attention to them. Only during newly encountered experiences, such as increases in speed or steering through unfamiliar

territory, does the cyclist appear to revert focal attention to these basic skills. Under most circumstances, the cyclist comfortably manipulates these eight skills to achieve other more advanced experiences on the bike.

More transcendent experiences of bike and rider connections also begin to form during this stage. While skillfully and often times unconsciously manipulating the foundational eight skills during long rides, cyclists begin to find themselves connecting with their bikes. The bike begins to become more of an extension of the body than an instrument used by it. Riders begin to feel the slightest undulation and the varying consistencies of the roads through the bicycle. They begin to intuit changes in gear, the correct posture of the body, and the amount of force applied to the pedals necessary to negotiate ever-changing challenges. Again, these challenges, largely determined by the terrain and the rider's abilities, do not force the rider to ignore one or more of the foundational skills. Rather, they force the rider at times to live from these skills, sometimes certain skills more than others, to solve a continuous flow of problems without incident.

Competitive cyclists also continue to pay homage to the foundational eight cycling skills. At this highest level of cycling skill, riders usually pay only unconscious attention to the basic skills of riding a bike. To use Polanyi's language, these skills have become well-engrained subsidiaries. Even more so than recreational riders, racers feel their bicycle as an extension of their body. They are also vastly more familiar with a variety of terrains and obstacles encountered on long rides. They anticipate obstacles much like Sudnow anticipated the next notes to be played when he improvised at his piano.

A racer is a different creature than a recreational cyclist, however. Instead of focusing simply on performing some combination of the basic skills for a longer period of time, the racer seeks to maximize the energy production of the body and, as efficiently as possible, transfer this energy to the bicycle. To accomplish this goal, the racer manipulates the foundational eight skills to produce new skills on the bike. For example, pedaling perfect circles is an enhancement on the skill of pedaling. Turning with speed is an enhancement of the cyclists' ability to steer around a corner while pedaling and not losing balance. The braking skills required to negotiate fast, winding downhill descents is a coordination of slowing the bike, remaining balanced, and keeping a wide visual field. These three examples identify some of the more developed skills of the advanced rider. However, they are not completely new skills, but rather are enhancements and combinations of the foundational eight skills addressed by every rider since the 1800s.

Upon mastering the basic demands of the foundational eight skills needed to ride a bike, riders appear to acquire four additional sets of skills as they develop into long-distance endurance cyclists. First, riders continuously seek to fine-tune the foundational eight skills. Fine-tuning these skills allows the rider to anticipate, live further ahead, and make smooth transitions to the constant and varied flow of problems that arise during longer periods of time, over varying terrain, and through constantly changing conditions. Riders seek to piece together longer and longer successful manipulations of the foundational eight skills without making any errors in judgment that may result in poorly negotiated turns, shifting into inappropriate gears, or a critical loss of balance punctuated by a crash.

Second, riders set out to increase their bodies' fitness and endurance capacities. This is accomplished by addressing components of time and space. Specifically, to increase their abilities to go longer distances on a bike, they must ride progressively longer distances for longer durations. Additionally, advancing riders have been known to seek out more strenuous conditions, such as riding uphill, to accomplish this goal.

Third, as cyclists advance in skill, they begin to experience a connection with their bikes and with the roads they ride. Rather than rider plus bike experiencing the world as three separate units, skilled cyclists acquire sensations and abilities to manipulate the bike as an extension of their bodies that informs them of their world. This appears to be only accomplished with an unconscious attention to the foundational eight skills.

Fourth, and especially at the competitive levels, cyclists seek the enhancement and manipulation of the foundational eight skills to maximize power generation by the body and the efficient transfer of that power to the bicycle. These advanced riders' goals are largely to go faster and longer than their competitors. Through their superior fitness levels, their connection with their bikes, and their ultra-fine-tuning of the foundational eight skills, they are able to accomplish this goal.

The presentation of this literature delineates an evolution of cycling skill development transforming the pedestrian into the cyclist. The pedestrian, taking brief jaunts on the new machine, learning only the basic skills necessary to ride, and striving to overcome a constant feeling of disconnectedness with the bike, constitutes the beginning point of this journey. At a contrasting pole are cyclists who consistently experience their world from the saddle, seek out and embody advanced performance-related riding skills

based in the foundational eight skills. Over time, these riders connect with their bikes to such a degree that they often refer to their machines as extensions of their bodies.

This presentation of the literature also reveals the stark contrast between pedestrian and cyclist worlds. For example, cyclists often seek to reduce simple pedestrian actions, such as walking, within their daily routines. “Never stand when you can sit; never sit when you can lie down; and never walk” is the first rule of energy conservation that cyclists accept as part of their lifestyles.¹⁰² Michael Barry echoes this rule when he notes that cyclists are “not great walkers.”¹⁰³ Lance Armstrong, whose apartment in Spain is on the second floor, has been noted to frequently take the elevator rather than the stairs. Floyd Landis, in contrast, simply shrugged off this rule, to the horror of his fellow cyclists, by routinely walking to and from his apartment to the town square.¹⁰⁴

This final example indicates how the learning and embodying of cycling skills and the acceptance of the rules, histories, and traditions of the cycling practice can often transform pedestrians into a fundamentally different way of being, a different way of meeting the world. Yet we still need to see if the pathway that the pedestrian travels on the way to becoming a cyclist is similar to that which the musician or dancer experiences on the way to improvisational conduct. Does the mastery of a complex array of bike riding skills stimulate improvisational conduct in a similar fashion to mastery of jazz music and modern dance skills?

One additional form of evidence will be examined before this question is answered. The following chapter describes my own experience of learning to ride a bike and my transformation from pedestrian to one more “of the peloton.” The examination of

this personal account will provide another look at the skill progression, the subsidiary acquisition, and, most importantly, the evolution of focal awareness of one learning to ride a bike.

Chapter Five

Personal Reflection: Stages of Development in Long-Distance Endurance Cycling

Introduction

A review of the cycling literature reveals the developmental stages one encounters in the transformation from pedestrian to cyclist. This transformation occurs with the development of skills needed to meet the bicycle's inherent demands of balance, an elevated center of gravity, and constant forward motion. It includes a progressive unification between bicycle and cyclist. At the end of the transformation, cyclists no longer experience their world from two feet on the ground. Rather, they find themselves interacting with their world through their hands delicately steering the handlebars, through their feet dancing on the pedals, and through the seat of their pants elevated above the earth on two aligned wheels.

In the tradition of David Sudnow's work, *Ways of the Hand*, I will now describe the evolving experiences I encountered when changing from a beginner to an advanced long-distance endurance rider. Beginning with mounting the bike for the first time, I will describe the qualitative changes I experienced as I developed the skills of more advanced cycling.

This description will support the skillful progression revealed through the previous cycling literature review. This journey will highlight many of the subsidiary acquisitions described by the other riders in the previous chapter. My first-person description will also reveal the evolution of my focal awareness while in the saddle. As a beginner, when I am first learning the foundational skills of riding a bike, I focus primarily on using the machine properly. My attention is largely fragmented among the

various activities I need to perform in order to keep the bike upright and moving forward. As I advance in skill and begin to take on the challenges of long-distance riding, my focus changes. Rather than perceiving my rides as short, separated segments, I now take the opposite perspective. My rides become one large effort of getting from Point A to Point B. My sole focus is simply arriving at the destination. I haphazardly solve each challenge en route to this objective with little consideration given to how current solutions will produce future problems or affect the overall ride.

As an advanced rider, my focal awareness now balances between the challenges of here and now and the over-all challenge of completing the ride. Rather than performing the ride focusing on one small segment at a time or performing the ride focusing only on getting to the final destination, the ride at this level is best described as a connected and balanced intermingling of both. It is a ride where all actions are coherent, appropriate, and efficient within the overall project of arriving at Point B. The ride is accomplished by focusing on it as a comprehensive whole. Each problem confronted is skillfully solved in such a way that the solution also aids in (or at least does not detract from) solving any future challenge confronted in the journey.

In the end, the rides I seek are best characterized as higher states of balance that transcend the skills required to remain aloft on two wheels for long distances. My rides become *the ride* – the gestalt, comprehensive creation of the entire project which balances the solving of the challenges of the here and now with the accomplishment of the overall project of arriving at Point B. This advanced focal awareness will later be shown to be analogous to the focal awareness found in the improvisational projects of jazz musicians and modern dancers.

Playing the Notes

The first bike that I remember owning was an orange department store “kids” bike. I, like many others, learned the basic skills of riding with the aid of training wheels. It was not until later in my youth that I graduated from these aids. It was also not until I ceased using these aids that I experienced many of the same problems described by the beginning riders highlighted in the previous chapter.

The learning-to-ride-a-bike experience that I remember most vividly occurred when my parents presented me with my second new bike. It was a yellow upright three-speed. My parents frugally bought the bike with the idea that I would “grow into it.” Consequently, when in the saddle my feet would not even touch the pedals – or the ground for that matter. My father was forced to attach wooden blocks to the pedals in order for me even to use it.

He was also the one who helped me mount this giant steel horse for the first time. My lessons took place on the sidewalk directly in front of my house. It divided the various yards and plots of undeveloped woods, uncut grass, and stands of milkweed from the shoulder of New York Route 28, which in turn provided its own treachery of regularly placed telephone poles. My father hoisted me up, grabbed the saddle and the handlebars, and started walking me forward. I was filled with anxiety. My fight for balance upon the two wheels was compounded by the fact that I was elevated too far off the ground for my comfort. I was at an age where tripping and falling to the ground often produced tears. If I fell off this bike, it would be like tripping and falling from three or four feet off the ground! Even if I wanted to stop and take a break (or save myself from harm), I knew that my feet would not be able to touch the ground in time to rescue me. I

would have to come completely off the bike. From the time my butt touched the saddle, I feared for my safety. Perhaps this experience is comparable to those who learned to ride a high-wheel bike in the later 1800s.

As my father slowly rolled me forward, I remember jerking the handlebars left and right in an effort to keep the bike balanced. I was largely relying on my father to keep me on the sidewalk. My intense focus on turning the handlebars constituted only a constant effort to keep from falling over rather than staying on the path. The ability to focus on both simultaneously was simply unavailable to me. However, when I did need to turn, I would often turn strongly in one direction, away from the outstretched tentacles of the milkweed, and then strongly in the opposite direction, away from the telephone poles and traffic. Back and forth in this zigzag motion I continued down the sidewalk while in between this “steering” I spastically jerked the handlebar left and right in an effort to maintain my tenuous balance at the speed of a crawl.

Strangely, the consistency of the sidewalk remains a very clear memory for me. The sidewalks in our town were made of concrete and segmented into square yards. Apparently because of the way they were constructed, these pathways had a two inch wide groove between each segment. Not only did these groves add to my trepidation of keeping balance and steering, but they also became indicators of my speed and traveled distance. As my speed increased, the pitch and the time between each subtle bump increased. I would count each crack to determine how far I had traveled. My early success as a cyclist was literally measured one yard at a time. Although this may seem to be an odd memory, it indicates that when I first learned to ride a bike I spent a great deal

of time looking at the ground immediately in front of my bike and not out toward my path of travel.

I simply had trouble looking out away from the bike. My attention focused primarily on operating the machine and not falling the three or four feet from the saddle to the sidewalk. Looking up to see where I was going forced me to look away from where the front wheel was pointing, what it was going to run over, and how I was going to turn the handlebar to avoid any obstacles. Gradually, I would be able to look up for short periods of time. When I did do so, I often found the bike traveling in the direction I gazed. If I looked to the left, the bike would bend to the left and vice versa. Further, I would easily become distracted when I needed to operate specific parts of the machine such as turning the handlebar or applying the brake. My visual focus immediately shifted to operating those parts. Much like steering, my visual gaze resembled a jerky, irregular oscillation between what the ride immediately demanded and the path of my travel.

Going fast or traveling long distances never entered my mind when I first learned to ride a bike. The Point A and Point B of my rides did not extend beyond my field of vision. Simply getting from one end of the property to the other (about fifty sidewalk cracks) was enough to keep me occupied. I recall having the specific problem of remembering to pedal as I negotiated this distance. Even when my steering became completely spastic and erratic as I struggled to keep the bike upright at a crawling speed, I did not understand that a quick power-stroke that increased my speed would straighten me out. I had great difficulty performing all of the skills simultaneously. Later I realized that pedaling and traveling with some speed actually aided in my balance although they compounded the problems associated with turning and braking.

My need to stay within the confines of the sidewalk initially produced a gross, jerky, and sharp turning of the handlebars. Eventually, my growing ability to constantly pedal throughout my ride eliminated many of my spastic actions. It did not, however, keep me from continuing to make a large, curved path from one side of the sidewalk to the other. I often wandered to the fringes of the sidewalk or toward the road as I pedaled. I would then find myself turning the handlebar in the other direction to avoid meandering off the other edge of the walkway. This over-compensation continued through much of the ride. Simply, smoothness began to characterize my steering ability but it took some additional time before I could hold a straight line.

Attached to my new skill of pedaling constantly was the requirement to learn braking and dismounting. Braking came easy – my bike had hand-brakes. However, I often did not look carefully enough at my path of travel to gauge the appropriate time to brake. Skidding to a stop was common. I often squeezed the brakes in a quick and jerky fashion. Eventually, I learned to apply a steady pressure to the hand brakes and come to a slow, measured halt.

Since the bike was much too big for me, getting off proved challenging. I cannot say that I fell off the bike a lot, but there were times when the combined actions of braking, stopping the pedaling, steering, and negotiating balance at slow speeds overwhelmed me. My first solo attempts at this can best be described as chaotic, awkward, and downright daredevil. Instead of the couple of feet I need today to stop and successfully dismount the bike, getting off my old three-speed required several square yards. Depending on how hard I squeezed the brake levers and which way I was leaning

or turning, I could have ended up dismounting anywhere in the general vicinity of my desired endpoint.

My recollection of learning to ride a bike reveals a step-by-step segmented approach to acquiring this skill. I had a difficult time focusing on multiple skills at once. I performed large, lunging motions when a specific skill was needed in certain situations. My over-zealous performances of one skill, turning to the right for example, often necessitated an equally over-zealous motion in the opposite direction, turning to the left. My attention jumped from one facet of riding the bike to another with few indications that I was able to perform one skill while simultaneously remembering to perform another.

I was concerned primarily with the immediate implications of my actions. If I started to lose balance to the left, I would turn the handlebars with a quick jerk to the left in order to put the bike back under my center of gravity. Upon doing this, I would notice that I would be pedaling to the left of my targeted line of travel. I would then steer the bike back to the right. This would often force me to feather my turn back into a straight line of travel – something at which I was not at all skilled. This type of on-the-spot decision-making in response to previous solutions occurred regularly during my early rides. My solutions to the immediate problems I encountered were often reactions to solutions for previous problems. They were reactions, not logical connections. In addition, I did not connect the solutions I was presently making to any future obstacle that I might encounter. My focus remained solely on the here and now.

My intentions motivating my decisions were simple. I desired to stay upright, move forward, and avoid any obstacles that could result in harm. Due to my lack of

experience, I had few options available for accomplishing my goals. My solutions were simple and packaged. If I made an error in my decision-making – turning too sharply, forgetting to pedal, or braking too quickly, for example – it would often be catastrophic for my project. I would put my feet back on the ground and my ride would end. I did not have the subsidiary knowledge needed in order to create spontaneous solutions to the problems created by my errors nor did I have the foresight to see how my errors would affect future decision-making down the road.

I was essentially seeking to operate the machine properly and maneuver it through my environment. I unfolded the plan in steps and segments rather than looking at the entire project as a comprehensive whole. As I progressed in my skill development, I discovered that learning to ride a bike is not merely learning each of the foundational eight skills as separate items. Rather, I ultimately learned to ride a bike when I was able to utilize these skills to greater or lesser degrees as I pedaled through my world. It occurred when I skillfully created the proper solution to given cycling problems utilizing the foundational eight skills in concert – stressing some skills at certain points while reducing the emphasis on others. The proper recipe for descending a hill may require a pound of visual focus out ahead of the bike and a cup of braking but only a tablespoon of steering and a teaspoon of pedaling. In contrast, the recipe for starting may require a pound each of balance, pedaling, and steering but absolutely no braking.

I also realized that learning to ride a bike required me to create solutions on a spur of the moment basis. I needed to constantly shift from recipe to recipe smoothly, always starting with the recipe required during the previous problem and moving on to the next in a logical fashion. As I became a better rider, these logical connections between each

presented solution began to produce something like a musical score – a score that might be found in a beginning pianist’s lesson book.

The score presents a series of notes to be played with the appropriate fingerings. If this is accomplished, then a song is produced. The beginning pianist gives little attention to the playing of a complete song. Instead, his or her attention is limited to notes, chords, measures, and correct hand positions.

My early experiences of learning to ride a bike were similar. I focused on performing the individual skills necessary to mount the bike, pedal down the sidewalk, and then dismount. If I could perform each part correctly, I was “riding a bike.” If I did not perform any one of these skills at any point, the project was destroyed. I was no longer playing the score of riding a bike. The music was gone.

The musical score I was playing was far removed from improvisational behavior. On occasion, I created solutions to problems spontaneously and I made decisions on the fly, but I experienced very little coherence between each decision or note played. Further, my solutions to problems were simplistic and uniform. I solved given cycling problems as they occurred but my solutions were of a general nature and stereotypical. They often addressed large segments of cycling problems rather than specifically targeting the given problem in the most efficient method possible. Improvisation on a bicycle was still well out of my reach.

During these early experiences in the saddle, I rarely considered anything beyond the operation of the machine. My actions were driven by the necessity to keeping the bike upright and moving forward. My destination was always a few feet ahead of me. I had little awareness beyond these two goals. I also encountered a limited array of options

in creating solutions to certain problems. If I was confronted with a challenge – making a hard left turn for example – and I did not set myself up for the corner through appropriate braking and steering, I saw no other avenues for rescuing the project. My bicycling project would end, and I would roll off the sidewalk and onto the lawn.

As I advanced as a cyclist, I further developed my on-the-fly decision-making to include an eye toward the future. I further acquired more cycling knowledge that I could use in future decision-making situations. The “mistakes” that I made became less catastrophic. Finally, I began to see my ride as a composite of the many decisions that constituted the whole. Eventually, the notes I played while in the saddle became the music of the ride. But first, I went through a phase where only getting to Point B mattered.

Playing the Sounds to Get to Point B

The wood blocks came off the pedals of my three-speed when my legs grew long enough to touch the ground. By this time, I was quite accomplished at riding my bike and my world expanded beyond the fifty sidewalk cracks in front of my house. One and two-mile trips to and from the schoolyard or the movie theatre became regular occurrences. My bike became my transportation around my town for visiting friends and socializing. Beyond getting from here to there, however, the bike had no purpose. My concern was only getting to “there” wherever “there” might be.

My first road bike was a hand-me-down from my cousin Jimmy. It was not anything “of the peloton,” but it was a legitimate road bike with curved handlebars and a sleek design. It was blue and had brakes and gear levers on top of the handles – not on

the hoods or the drops as they are today. At that time, I felt pretty special with this bike. It was different than all the other kids' BMX bikes. Unfortunately, I learned quickly that there was much I could not do with my new bike. The other kids would ride their two-wheelers on trails, dirt paths, and over man-made jumps – pretty much anywhere they wanted. My road bike did not work well in all of these places. Actually I could take it there, but I quickly found out that the only place it performed better than the other kid's bikes was on the open road.

My blue bike produced speed and provided the benefits of ten gears – something I exploited during the occasional races around the block. Yet the addition of gears and speed complicated my riding. More speed meant quicker decision-making. As a beginner, I was not always prepared for this acceleration of mental processes.

Additional gears also gave me more options when I confronted slopes and, when used properly, allowed me to utilize less effort to overcome them. However, when I had to negotiate traffic or stop and go regularly, I often found myself in gears that were inappropriate for getting started again. I had to get off the bike, shift the gears, lift the back tire off the ground, and circle the pedal with my hand to change gears before starting again. I rarely remembered to shift into lower gears while I was braking in order to facilitate my future restarts. Of the early complications I initially encountered with operating a ten-speed bike, this one challenged me the most.

In high school I bought my own bike. It was a black Peugeot twelve-speed road bike. It was at this point that I started paying more attention to skills that allowed me to go faster and travel greater distances. I started exploring the back roads of my town. A couple times a summer, I would visit a friend who lived just over ten miles away. Of

course, I did not “train” for this twenty mile lap nor did I bring any food or repair kit with me for the ride. I simply saw the Point B of my trip. I gave little thought to what would happen on my way there or on the way back.

My longer trips did, however, provide me with some experiences that forced me to develop as a cyclist. Specifically, these trips forced me to confront some of the challenges associated with longer distances. One example of this development stems from having twelve gears at my disposal. Rather than haphazardly shifting gears as I was prone to do on shorter rides, I had to learn to make logical connections between my gearing solutions as I confronted the hilly terrain of my now expanded world and accomplished the goal of getting to Point B. I had to learn to employ the cycling adage, “shift early – shift often.”

As a beginning rider, I often approached a climb by staying in a higher gear as long as possible. I theorized that if I could crank and crank and crank to maintain the highest possible speed into the bottom of the hill that my momentum would significantly help me through the climb. What occurred was largely the opposite.

I would see the incline approaching but I would not shift until I could feel the extra burden of the hill in my legs. I would then shift down a step. Realizing that the hill was quickly eating up my momentum, I would shift again and again and again in rapid succession. The chain and my legs would jerk and protest under the hurried changing of gears. My speed would continue to decrease rapidly. I would then realize that I was still in my big chainring and needed to abandon it quickly before I came to a complete stop. Now that my cadence had decreased significantly, shifting into my lower chainring became more of an audible “thunk” than a smooth transition. At this point, I would take

my eyes off the road. I would look to my cassette to see exactly what gear I was in and how many remained for use. I would usually find that I had already bottomed out and that looking at the rear sprocket was superfluous. I felt as if I were running in space. My legs were spinning far too quickly and my speed continued to decrease. I found myself with very few recovery options. I was now stuck completing the incline by either straining to shift up to a more powerful gear or cutting my losses at a lower speed.

As I became more experienced, I learned to recognize, judge, and respond to hills more quickly and in a more logical fashion. I noticed an instinctive reaction of my hands on the shift levers, knowing, somehow, how far to shift without needing to look down to do so. Now, even before I feel the hill in my legs, I will shift into a different gear. In fact, I will most likely shift through a variety of gear combinations before even experiencing the brunt of the uphill grade. The bike will rarely groan under the stress of these transitions as I work the gears smoothly through small steps. Utilizing these progressive steps, I efficiently increase my revolutions per minute (RPMs) while minimizing the differences in strain on my legs. This smooth transition will allow me to maintain a higher speed and higher RPMs for a longer period of time.

By fine-tuning my ability to recognize the grades and needs of inclines, I eventually found myself with more gear options to use throughout the hill. This resulted in a decrease in overall exertion needed to accomplish the slope. Eventually, my transition into and out of the hill became so fluid that shorter, less steep hills, approached in the past with dread and significant trepidation, were encountered as “just another bump in the road.”

Ironically, even today when I occasionally make an erroneous decision on a hill, I find myself acting as I did as a beginner – getting lost by shifting quickly through the gears, looking at the cassette for guidance, and finding myself bottomed out without any easy or fluid direction to go.

It was not until the past five years that I began to make a conscious and dedicated effort to become a long-distance endurance rider. Beginning in my Schwinn years and now with my Trek, I read several performance “how-to” books, acquired and regularly used a heart rate monitor, and suffered through regimented training programs. My cycling knowledge base grew and my learning experiences on the bike intensified. However, five years ago, when I first decided to officially “train” for long-distance cycling, mantras such as “shift early – shift often” were still not the focus of my attention. My attention was directed primarily on traveling to distal points as quickly as possible.

The first new problems I encountered in my quest were related to my fitness and endurance abilities. Specifically, I had to develop appropriate fitness and endurance capacities to accommodate my new long-distance challenges. My focus shifted to developing my bicycle’s “motor” – my body. I still needed to keep the machine balanced and moving forward, but the development of the engine that allowed me to continue this task for longer distances and periods of time took center stage. To develop my endurance capacity, I ultimately needed to adjust my pedestrian perception of time and space.

Several years ago, I made the decision to ride my first century (one hundred miles in one day). I had not been riding much at the time. In other words, I was still essentially a pedestrian. My first training ride for this event consisted of twenty-five miles on a nearly flat “Rails-to-Trails” bike path. I started out with a full head of steam, going hard

– too hard. About thirty minutes into the ride my legs burned, my breathing was labored, and I began to question the sanity of doing one hundred miles in one day. An hour into the ride, my eyes focused about twenty feet ahead of my bike. My legs went up and down unenthusiastically. My body seemed heavy, and I felt like I was pedaling through two feet of snow. I focused solely on keeping the bike moving forward. My eyes began to find the bike computer more often. Instead of watching the road pass underneath the wheels, I watched and begged for each tenth of a mile to register on the odometer and every second of time to pass a little faster.

I completed the twenty-five miles and arrived back at my house exhausted. Stumbling into my kitchen, I looked at my wife and lamented, “This isn’t going to be as easy as I thought it would be.” My normal rides on a bike had usually been under one hour in length. However, this training ride of twenty-five miles had taken me two and a half hours to complete. I suddenly realized that by deciding to ride a century, I had committed to pedaling for ten hours in one day! Clearly, my concept of time as a pedestrian did not match the concept of time I needed to survive in long-distance endurance cycling.

Multiple training strategies for long distance riding exist – not all of them include bouts of long distances and durations on a regular basis. However, nearly all the training programs I have seen involve some sort of weekly endurance ride that pushes cyclists past their normal hours and minutes in the saddle. Training the body and mind to become accustomed to the long hours in the saddle is a necessary component in solving many of the problems that arise during this activity. I simply could not hop on my bike and perform longer rides without training myself in this manner. I needed to experience and

get adjusted to the longer durations in the saddle in order to solve the new problems of fatigue and to become skilled in the creation of longer, organic connections among the foundational eight skills.

Over time, I became familiar with the distance of twenty-five miles. My legs became stronger with each ride, but I also became smarter, learning that a quick, fast pace was not productive in completing a century. I learned to control my efforts so that my rides emulated consistency of effort throughout rather than a massive push at the beginning and a fleeting struggle at the end. As my fitness level increased, I became less and less conscious of my body working on the bike. My heart rate and breathing, while still elevated with the exercise, became less audible and less noticeable throughout my rides. As the date of the ride approached, I eventually started to use the point when I did notice my heart rate and breathing cadence as my training pace. The time it took me to complete the rides steadily decreased. My lamentations to my wife changed dramatically into stories of accomplishment and plans for future rides. In the days before my first century ride, I was able to ride twenty-five miles in about ninety minutes. I eventually completed the century ride in slightly less than seven hours of pedaling.

Hand in hand with my change in perception of time was a change in my perception of space or distance. A different ride on the same Rails-to-Trails path will provide the example. I was twelve to thirteen miles into my now routine twenty-five mile ride, making the turn at the far end of the trail and returning home. A mother flagged me down in the first two miles of the return trip. She asked me if I had seen a young boy dressed in red with a red bike on my travels. I had not but assured her that if I did see him on my ride, I would send him in her direction (which would be opposite of my route

home.) I pedaled on, keeping my eyes open the child. I rounded a turn several miles from his parents and there he was – a ten-year-old dressed completely in red with a red BMX bike and a red helmet.

The boy had just deposited himself on a bench at the side of the trail. I stopped and asked, “Are you Timmy?” He said “yes.” I said, “You know, your parents are looking for you at the other end of the trail.” His eyes widened. He immediately hopped back on his BMX bike and began pedaling furiously back toward his mom opposite of my destination. I watched him go, churning out huge RPMs. He did not seem to realize that he was eight or nine miles from his parents. I turned around and pedaled up next to him. “Are you going to be alright riding back by yourself?” I asked. He said “yes.” Unconvinced, I asked another question. “Do you want me to ride back with you?” Holding back tears, he said “yes” again. Averaging five miles per hour, for the next nine miles I was asked at least thirty-six times “How much farther is it?” and “Are we there yet?” Timmy clearly had no concept of distance.

My perspectives on time and distance changed dramatically as I progressively became more skilled at endurance riding. Training my body to confront the rigors of riding long distances provided this new outlook. When I first started riding consistently on the road, my routes would be roughly ten to twelve miles in length and about an hour in duration. In my second year, I usually doubled that distance in ninety minutes time. Currently, thirty miles and two hours of pedaling comprise my standard rides. To the pedestrian, one hour on a bike may seem extreme and thirty miles absurd. Now, given the condition of my bike’s “engine” and my adjusted perspective on time and distance, one hour is merely a warm-up and thirty miles is commonplace.

I was once telling a pedestrian colleague about how my times and distances have changed over the years. He replied, “That’s all you guys are about. Going more and more miles, spending more and more time on your bikes.” This statement is mostly true. I, like all endurance riders, must put in the miles and the time in order to develop my skills. However, there are limits to the abilities of the human body, and there are also limits to how much time a non-professional cyclist can fit into a schedule of family, work, and school. To counteract these restrictions, cyclists often seek distinctive combinations of time and distance within rides by varying the terrain covered. The most common variation is the seeking out of hills.

Rarely can long-distance riders find significant stretches of road that are not undulating to some degree (especially in central Pennsylvania). Being practiced at going up and down hills cannot be overlooked as an important skill to acquire. Riding both up and down hills helps solve the problems of fatigue by increasing strength and endurance abilities. It also gives riders practice in negotiating the eight foundational skills over this terrain. One of the eight skills more prominently utilized when riding these hills is visual focus – a skill thoroughly entwined with new perceptions of distance and time.

Locals call it “Mile-Long Hill.” From the bottom to the top, it is exactly one mile long and varies between ten and fourteen percent grade. It is a regular hill that I program into my rides. When I first rode it, I did not know what to expect other than its difficulty. After riding it several times, I noticed a change in my perspective of its distance and the perceived time it takes me to ride over it. This change in perspective is now commonplace when I find solutions to any hill.

My thought processes and actions generally proceed in the following manner. I gear down at the bottom and immediately begin to divide the mile-long space into segments. Staying in the saddle, I pedal for about thirty yards to where a white line is painted across the road. I gear down again and stand on the pedals. My visual focus alternates between the road just in front of the bike and a white fence that marks a left hand turn about one-third of the way up the hill. The former keeps me informed of any obstacles in the road I may need to avoid at the snail's pace of five or six mile per hour. The latter marks the remaining distance and time in the first segment of my suffering. I focus on that fence as if it is my final destination – cranking slowly. I can almost feel each muscle in my legs make their individual contractions. My breathing fills my ears in a rhythmic series of inhales and exhales. My heart pounds in my chest at a sprinter's pace. The ride seems to last forever.

Arriving at the white fence, I get back in the saddle. The change in position is refreshing, yet this is only a short reprieve. My legs quickly protest this less powerful position, but I stay in the saddle, hunched over the handlebars, watching the pebbles and the insects pass slowly by my wheel on the road. Making the gentle left hand turn, I am now in the shade of the trees. I continue the slow, laborious cranking, creeping up and up and up. It seems like forever.

Emerging from the trees, I stand up again. The consistency of my heart rate and breathing cadence tells me that I have enough left to get to the top. My legs, on the other hand, are screaming for a break. I cannot see it yet, but the fourth mailbox on the left marks the top of the hill. As I steer up a right hand turn, the mailbox comes into view. I

focus on it intensely. “Not long now,” I tell myself. “You only have to get to the mailbox then it’s all down hill.” Laborious cranking. Slowly ascending.

As I approach the top, I am distracted by my body. My heart and lungs burn. My legs are turning into jello. My eyes are slits and are watering. My shoulders and arms ache from pushing and pulling on the handlebars. So acute is my attention to my body’s condition that I often (and oddly) notice my nostrils flaring as my body desperately seeks just a little more oxygen. It seems like forever. I finally arrive at the fourth mailbox, heart pounding, breathing heavily, and legs throbbing. I sit back in the saddle, hunch over the handlebars, and gear up in preparation for the descent.

As shown in this example, time expands considerably during uphill rides. Riding that one mile seems noticeably longer to me. In addition, distance uphill becomes vastly different than distance over flat terrain. When going uphill, I focus on segments of the climb, not simply the targeted summit. My visual focus narrows in these segments to the pavement just ahead of the bike and to the intermittent goals. Rarely do I look to the left or the right away from these landmarks. My ultimate goal is to get to Point B and end my suffering.

Going downhill provides me with different challenges. Visual focus, braking, and steering move to the forefront of my attention. Unless I apply the brakes, going downhill usually means greater speeds. With greater speeds, my visual focus tends to remain straight ahead and far out in front of me. Instead of peering ahead to divide the distance into slow, uphill segments, I look deeply into my line of travel to negotiate hazards on the road and plan for turns and braking.

Wopsy Mountain is another hill that I frequently ride. It includes about a four mile descent that varies from ten to fourteen percent grade. Unfortunately, it is not very straight and presents significant challenges, particularly when I reach speeds over fifty miles per hour. When I arrive at the top of this decline, I prepare myself for what lies ahead. I get into my highest gear. I get into the drops, slide my butt back on the seat, loosen my legs so they act as shock-absorbers, and lower my chest to the bike. I then place my visual gaze as far out in front of the bike as possible. Between that distant point and my bike, I plan an intended path of travel that will allow me to steer gently around the corners with as little breaking as possible. I take a deep breath and try to relax my body.

When I streak down this mountain, my visual focus is glued as far out in front as possible. While I am always curious about my speeds, I dread taking even a quick peek at my bike computer to see how fast I am moving. The world is simply rushing by too quickly. I have to stay aware of what is coming up next or risk a delayed reaction that could result in a crash. Even though my gaze is far out in front, my eyes dart from one potential hazard to the other – a crack in the pavement, a patch of gravel, a tree branch near my path. My intentions are focused solely on what is ahead of me. Things passing me to the left and right mean little and those already behind me even less.

My body begins to protest my attempt at an aerodynamic position. Instead of my legs burning, now my arms are on fire from supporting my body weight in the tuck. As I roll over the dips and humps in the road, the weight of my body floats on my arms and legs which act as springs that connect me to the bike. I go over a small hump and my

body and the bike seem to smoothly take off then land softly as if we are only hovering over the subtleties of the road.

When I approach the turns, I regularly talk myself into trusting that the wheels will stick to the road. On some days, I am more convinced than others. While I try desperately to avoid using the brakes, the speeds and the turns usually overpower my confidence in the bike. I find myself feathering the levers in an effort to slow to a manageable speed. As soon as I squeeze the brake levers, I immediately feel as if my hind-quarter wants to come up over my head. My attention becomes directed to my spinning wheels. Too much braking can result in a loss of control or, even worse, the bike sliding out from under me. Releasing the brakes on the straight-aways directs my attention back into my forward motion and pathway. While I am no longer fearful of my wheels locking up, my speed once again continues to increase, and my gaze falls on the descending hill before me.

Descending, like climbing, provides opportunities to develop new skills. Descending forces me to make more rapid decisions. I am forced to create combinations of the foundational eight skills at an accelerated rate. Descending also forces me to further develop the skills of braking and steering. Ideally, both of these skills are performed without a significant loss in speed.

It should be noted through these examples of modified perceptions of distance and time that speed plays an important role in developing cycling skills beyond the basics of the foundational eight abilities. This should not be surprising since speed is defined as the amount of time it takes to cover a certain distance. However, perceptions of speed differ in this second stage compared to the first. From my beginner's perspective, speed

caused anxiety related to my fear of crashing. I lacked confidence in controlling the bike and speed forced me to make decisions much more rapidly than I was able to do – even at five or ten miles an hour. My body tensed, my hands gripped the handlebars forcefully, and my responses to the road became spastic and jerky.

In contrast, as an advanced rider I now seek out speed. Obviously, those in the peloton look to speed for victories, but even as a non-racer I realize that speed is both a stabilizing force and a challenge. When I was a child, going down simple grades that allowed me to coast for long periods of time was exhilarating. Zooming downhill with the wind in your ears and your eyes watering can become something that I, like many children, actually sought out as one of the freedoms of riding a bike.

As an advanced rider, I now know the upper and lower limits of my comfortable speed zone. My ride with Timmy back to his parents at five miles an hour was much too slow for me. Ten to fifteen miles an hour is a comfortable conversational pace. Over relatively flat ground, I can push my limits and power myself to twenty or twenty-five miles an hour and still be able to look around without too much fear of encountering problems.

However, when speed increases and the wind in my ears blocks out all other sounds, I begin to adjust to the challenges of speed. As my speed increases, the sound emanating from my chain moving over the cogs increases in pitch. The wheels rolling over the road do the same and the vibrations from the bike blend together in one continuous hum rather than discernable segments. My RPMs increase until I finally cannot crank the pedals fast enough to provide any energy for the machine. As I pass thirty miles an hour I feel stable and in control of the bike. When I reach forty miles an

hour my gaze goes further out in front of the bike. My grip on the handlebars increases slightly. The wind in my ears takes center stage as the landscape screams by me. The sound coming from my free-wheel continues to rise in pitch.

At fifty miles an hour I am in a place where I rarely venture. Anxiety builds in my body, and I am completely focused on the task of safely continuing forward. The sound of the wind, the gears, and the tires on the road all reach a feverish pitch. I feel as if one slight turn of the handlebars or one tap of the brake will send me flying. Yet when the speed decreases and I return to a comfortable pace, I begin to plan future trips to experience it again.

In both climbing and descending, the foundational skill of visual focus comes to the forefront. Other foundational skills, such as pedaling, steering, and braking, are also further developed while tackling these conditions. Hills objectively create variations on the eight foundational skills. In addition, hills create new subjective skills needed to be learned by the cyclist such as remaining focused on critical tasks while in a state of anxiety at high speeds or exhaustion during significant climbs. As such, these sloped opportunities allow me to develop and fine-tune the application of cycling skills to my changing environment. Uphill segments force me to manipulate riding skills at a slower pace but with added physical suffering to the point of collapse. Downhill rides are the opposite. I develop the skills associated with rapid decision-making with an anxiety-filled state of mind. The uphill and downhill environment force this fine-tuning upon me by making the impact of my decisions more significant. Shifting into a wrong gear that causes excessive physical strain during climbs can result in a failure to complete the hill.

Similarly, failure to keep a visual focus far out ahead of the bicycle while descending could end catastrophically.

When I dedicated myself to becoming a long-distance endurance cyclist, the focus of my rides dramatically changed. Rather than focusing on the proper use of the bicycle, my attention now switched to using the bike to get from Point A to a significantly distant Point B. Addressing this new focus required the expansion of my attention away from using the bike. I now had to focus on the development of my endurance and fitness capacities that would allow me to power the bike over those great distances. My rides became numbers on a scorecard each representing the lengths and arrival times at my designated Point Bs. My sole concern became those numbers. Was I riding enough miles to increase my endurance capacities? Was I riding with enough intensity to tax my physiological systems?

What happened en route to Point B was generally not a concern. Those happenings, whether they were hills or flats, curves or straight-aways, headwinds or tailwinds, were obstacles to overcome. I confronted each one of them in turn with specific strategies, but they did not “define” my ride per se. They did not constitute the important characteristics of the ride nor did they constitute significant portions of the ride evaluation. I was only concerned with getting to Point B and whether or not the numbers representing that arrival indicated an increase in fitness.

At this stage in my development, I perceived my rides as one large segment of activity. However, the manner in which I completed my rides remained fragmented. I took on each challenge as it confronted me along my ride. Each climb or descent was bracketed from all other activities in my ride and solved individually. I gave little

consideration to the next challenge apart from how completing each one moved me one step closer to Point B.

Improvisation on the bicycle also continued to elude me. I was beyond the simple ability to “play notes,” but I was not making my own “jazz” either. I was simply following somebody else’s plan – the Lance Armstrong training program, The Carmichael Training System, the advice from the writers and columnists in *VeloNews* and *Bicycling Magazine*. These sources and others were guiding my actions. I was simply trying to sound like them.

Even the terrain over which I rode essentially dictated to me how I was to perform. With growing experience and base of cycling knowledge, I developed plans to solve the challenges that confronted me during my rides. Once I found a solution that worked, I stuck with it. This facilitated meeting the challenges of both decision-making and performance. I was not particularly interested in solving any of these intermediary problems with any creativity. I only wanted to get past each hurdle and remain focused on getting to Point B. Similar to following the plans of the Peloton, I was simply trying to do whatever the terrain wanted me to do. I made the sounds that got me through the challenges, but I was definitely not making the ride my own. My arrival at Point B was a product of another’s plan.

By developing my body physically and continuing to fine-tune my ability to perform the foundational eight skills in more diverse settings, I eventually began to connect with the bicycle. I become more attuned to the nuances and changing grades of the roads as I rolled over them. I became more skilled at quickly planning and applying solutions to the constantly changing problems I confronted. I began to consciously think

less and less about changing gears or applying the brakes. My designed and repeated solutions to hills, flats, and turns evolved not necessarily into new plans to be repeated, but rather into a vision of invitations to a variety of solutions to the same cycling problem. My on-the-fly solutions became more unconscious responses to the conditions of the road I experienced through the bicycle.

My developing bike-rider connection allowed me to see a problem, create a solution through a combination or embellishment of the foundational eight skills, and perform that solution without losing any speed, power, or energy. I slowly developed the ability to see a hill, determine its challenges, and predict the time and energy needed to climb or descend it well before I experienced any change in grade. I began to see connections between my current actions and what was required of me further down the road. I began to seek efficiency in problem solving over long distances and cohesiveness in all segments of the ride. Armed with a more efficient cycling ability, a new appreciation for the concepts of time, distance, and speed, and a strong, fit body, I now sought to become ultimately connected to the bike. Entering the final stage in my progression, I looked toward this unification of body and machine as a means of “going for the jazz” of cycling.

Going for the Jazz of Cycling

As an advanced cyclist, I currently find myself addressing the challenges of the road in a quicker, more decisive, and efficient manner. I shift, brake, and steer with an almost unconscious attention to the physical manipulation of the bike. I experience a connection to the bike that allows me to bypass conscious attention to controlling the

machine. Instead, I focus on the subtleties of the terrain, adjusting the machine fluidly, smoothly, and easily to its fine undulations. I see cycling challenges well in advance of experiencing them, intuit multiple solutions to these problems, and perform these solutions by organically connecting them within the total ride. From a spectator's perspective, I look completely at ease and provide an impression of effortless operation of the machine through subtle adjustments in gear, cadence, and position. The bicycle and I appear naturally connected, gliding across the landscape as one.

These short transcendent segments in which I confront the world as a single bicycle-rider unit entices me to seek permanent connections to my machine while riding. To do so, I further develop the use of the foundational eight skills. I continue to fine-tune these skills to create an efficient transfer of power from my pumping legs to the bike and ultimately to the terrain. It is now the efficiency of energy production, the simultaneous transference of this energy to the bike, and efficiency in decision-making over long-distance rides that I seek.

Seeking an efficient connection of the bicycle's "motor" (my body) and any combination of the foundational eight skills needed in given situations begins with a precise performance of cycling skills. Skills performed simply because they were needed to keep the bike upright and moving forward now become intensely focused upon to catalyze my connection with the bike. For example, as an accomplished rider, I no longer have to consciously worry about minutely steering the bike into the fall in an effort to maintain the dynamic state of balance needed to ride a bike. While I realize that these minute adjustments continue to occur, I now attend to them only unconsciously. I am

quite natural in the saddle and my unconscious attention to my elevated center of gravity on two wheels is similar to the unconscious attention I pay to standing on two feet.

However, I now focus on extracting the benefits reaped from an acute attention to steering and balancing the bike for different reasons. Focusing on finding the best line of travel during my rides exemplifies this precision. I seek to turn the handlebars as little as possible, keep a smooth path when going around turns, and almost never brake. I attempt to follow a natural line in the road of similar fluidity to the natural path water would follow when flowing downhill. Focusing on the minute details of this skill reduces any unnecessary turning of the front wheel. This unnecessary turning could cause a reduced transfer of power into forward motion by displacing that momentum to the left or right. To make these fine adjustments in balance more efficiently, I now shift my weight delicately into and out of the turns without using the handlebars. This achieves a smoother and more flowing result. At times, when I have found this liquid path, I feel as if the bike and I fuse in our intentions like a couple intimately dancing – feet placed in exactly the proper locations, the grace and flow of action unimpeded by conscious thought, and the rhythm of movement perfectly in tempo.

I have also learned to minimize any extraneous body movements when dancing on the pedals. Any extraneous movement in my upper-body, such as swaying the torso or rocking the shoulders or hips to the left and right, wastes energy and is ultimately detrimental in my quest for a flowing and stable state of balance. Often, when I am riding with the sun at my back, I will examine my shadow on the path ahead of me to see if any motion is apparent in my upper body. When I first started reviewing my shadow, I responded by tensing my upper body in an effort to limit its movement. This tension

became uncomfortable and it affected my breathing. In time, I realized that a more relaxed upper body that flowed with the bumps, dips, and turns of the bike over the changing terrain yielded a dynamic stability that not only minimized my upper body movement but also did not require any additional energy or effort to do so. Similar to my attempts to be water flowing naturally downhill, in these efforts I try to be a natural extension of the bicycle.

In addition to the subtle shifts in weight that more efficiently address dynamic balance on the bike and moving forward, I also focus on the transfer of energy from my legs to the bike through a fine attention to pedaling. Rather than “stomping” or “mashing” the pedals by simply applying force in the downward motion, I now seek the efficient transfer of energy through “perfect circles.” Since the pedals are connected, if I were to “stomp” on one pedal I unwittingly work against the “stomping” I apply to the other pedal. I end up working against the opposite leg which is essentially dead weight being pushed upward on the other side.

In contrast, if I perform “perfect circles” energy is applied to the pedals throughout the entire revolution not only in a downward motion, but also in a pulling back motion, an upward motion, and a kicking over motion. This yields more energy transferred to the pedals resulting in more speed and, ultimately, more efficient travels over the varying terrain.

The difficulty in this pedaling skill arises from the necessity to coordinate a perfect circle with one foot while simultaneously performing another perfect circle with the other foot at exactly the opposite part of the revolution. My right foot at the twelve o’clock position would need to be kicking over and pushing down while my left foot at

the six o'clock position would need to be pulling back and up. Due to the difficulty in this essential coordination, I will often practice perfect circles during the off-season through one-legged pedaling on an indoor trainer.

One winter on my indoor trainer, I started to practice perfect circles using the one-legged method. Picking a comfortable gear, I clipped out with one foot and kept pedaling with the other. Within ten pedal strokes my fluid cadence had folded into a choppy limping motion. I could perform the skill smoothly from the top position pushing down. However, I experienced major problems when I pulled the pedal back, up, and over the top. My leg would begin to fail on every pull as if it were waiting for the other leg to push it through that part of the circle. When help did not arrive, my leg would slow considerably, causing a pause in the circle. When my leg finally did catch up to the pace of the circle, it did so with a quick, jerking kick. The result was far from perfect. Instead, I felt like I had a broken leg and was limping along slowly by moving my leg two-thirds the required distance and then stabbing my leg forward to finish the circle. As opposed to the smooth, fluid transfer of energy resulting from perfect circles, my stroke characterized a work of inefficiency – what cyclists describe as “pedaling squares.”

Using a smaller gear and focusing on that “limping” segment, my single-leg skills improved. When cycling, both my legs are now more or less coordinated perfect circles. On occasion, I still consciously focus on the trouble spot when riding. Usually I find myself repeating the skill cue “back...back...back” with each stroke to help me perform it properly. More often than not, these perfect circles are now apart of my unconscious attention to pedaling. So fluid is the motion that the efforts of each individual leg merge through the cranks, and I feel as if I am effortlessly running through air with an endless

source of energy. Only when I become fatigued do I revert back to my old “stomping” habits and find one leg working against the other. The simple erosion of my perfect circles into inefficient mashing, and the gradual shift in attention to the actions of one specific part of my working body provide one of the first cues telling me that I am disconnecting from the bike. This noticeable breakdown in my pedaling is comparable to my realization that my nostrils are flaring during strenuous efforts.

I also seek efficiency in my decision-making processes. As I progressed in skill level, my ability to construct solutions to the constant challenges of long-distance cycling became more diverse. Options in action became more numerous. For example, I know that there is little difference between the effort I need to pedal the gear ratios 52x16 and 42x14. The effort needed for me to continue a higher RPM, comfortable rhythm, and efficient transfer of power between these two gears is minimal. My experience on the bike has revealed this similarity and has created a natural step between my large and intermediate chainring. This allows me at least two pathways to take when confronting a hill or other obstacle on my rides. If the hill is slight, I may choose to shift down progressively from 52x16 to 52x18 to 52x20 to make it easily over the challenge without a significant loss of power. I would then quickly gear back up to resume my higher speed. In this option, I never leave my 52 chainring. On steeper hills, however, I may choose to shift down from 52x16 immediately to my 42x14 to allow for a smooth transition to my smaller gears. This will allow me to efficiently reach the smaller gears needed to negotiate the steeper hill.

It is common yet critical decisions such as the selection of gearing ratios through hills that often dictate whether or not I will stay connected to the bike or will be distanced

from it. At my current skill level, the erroneous selection of a choppy path remains a possibility and, when it happens, results in a highly very frustrating experience.

One hill on Moser Road seems to provoke decisions that result in a choppy pathway. It is only a quarter mile segment of back road. Its treachery lies in its deep plunge into a hollow, a sharp left hand turn at the bottom and an equally steep emergence on the other side. From the starting ridge I can see my destination of comparable elevation across the valley. Descending into the hollow, I am in my highest gear and I pick my line of travel. I know I have to brake for the corner. I know I have to gear down significantly after the turn. I know I will have to stand up to complete the hill. I have a well-conceived plan of how to negotiate this challenge.

When I hit the corner at the bottom of the hollow, however, my rhythm and flow disappear. The turn to the left is sharp, and I often get stuck in a “brake or do not brake” dilemma. I am anxious of the speed I am taking into the corner and my line begins to waver. Just before I hit the corner, I usually end up braking to some degree. This decrease in speed does not help with the impending hill. I am quickly through the sharp left turn and into the climb out of the hollow. I frantically shift through gears – big chainring to middle and down through the cassette. The chain rattles. The bike protests. My legs desperately try to bull their way through the inconsistent intensities the gear combinations fire at me. To no avail, I end up losing most of my power, my RPMs have decreased significantly, and I am slowed to a crawling pace.

While this experience comprises only a short segment of my ride, any unity I had with my bike is lost for the moment. The unconscious attention that I may have developed through smooth, rhythmic and simultaneous pedaling, steering, shifting, and

braking has degenerated into segmented and conscious attention now paid to individual skills performed one at a time. As I arise from the hollow, I have to regroup and find ways to put the pieces back together. It is uneven, discontinuous, and fragmented activity, such as this, that tends to disrupt any unity I have with the bike. As a more advanced rider, I seek to avoid such disruptions – not through avoiding those challenging segments of road – but rather through a constant incorporation of new cycling skills to meet these problems more successfully.

The challenges I confront during my long-distance rides are not always as neatly packaged as those found on Moser Road, Mile-Long Hill, or Wospy Mountain. A lot of road exists in between these perhaps more obvious cycling problems. One of the more frequent challenges to maintaining a connection with the bike is the constant negotiation of flat or relatively flat terrain. A false flat (or *faux plat* using the peloton's lingo) is a segment of road that visually looks flat but actually has a subtle uphill or downhill grade. Built on abandoned railroad beds that vary between zero and three percent grade, the Rails-to-Trails system exemplifies this type of terrain. For much of the Trail, several hundred-yard segments of completely straight paths are encountered, and they look completely flat. This is the illusion of the false flat. In order to expose the illusion for what it is, new sensibilities are needed. Rather than relying on the initial visual cues that are so useful to the rider when approaching a steep climb or decent, I have to trust kinesthetic cues – that is, the subtle changes in resistance in my legs and the changing rhythm of my heartbeats and breathing when experiencing a false flat.

The false flat represents both a blessing and a curse to the rider. As a curse, it can produce a very demoralizing state of affairs. A few years ago, I was riding a century on a

Rails-to-Trails pathway going “uphill.” It was my first attempt at performing the century in this continuous uphill direction. Even though I knew it would be a two to three percent uphill grade for the entire one hundred mile ride, I had convinced myself that no significant adjustments to my strategy would be required.

The first forty miles went well. I was smooth and efficient, rarely shifting, braking, or steering. The one good thing about riding on the Rails-to-Trails system is that it allows the rider to find a comfortable gear and pace and stay there for very long periods of time. Fewer distractions and challenges usually mean more opportunity to connect with the bike. I remained convinced that going uphill for one hundred miles would not be a problem.

However, as I entered the next forty miles of my uphill century, things began to unravel. The grade increased during this segment to roughly three percent. Stubbornly, I stayed in a higher gear and forced myself to keep my previous pace of fifteen or sixteen miles an hour. The pleasure I was feeling through my smooth connection with the bike on the previous forty miles left me, and my efforts became laborious. My visual gaze stopped surveying the surrounding scenery and instead focused on the trail about twenty feet ahead of the bike. My head drooped, my body slumped. I found myself watching the numbers turn over on the odometer. My upper body started rocking back and forth in an effort to generate more power. I scanned possible solutions to my dilemma. Should I put my hands in a different spot on the handlebars? Attempt a more aerodynamic position? Focus on perfect circles? Gear down? At mile fifty I finally admitted to myself that this measly two to three percent uphill incline had beaten me. I was

desperately close to getting off the bike. Ironically, this experience of bankruptcy was the best thing that could have happened to me.

I yielded to the demands of the bicycle and the trail. Without looking at the gears, I shifted down. I found the place where my legs could pedal at the rhythm they desired. Sometimes I had to shift up and down several times in a single stretch of trail to achieve this. I put my hands on the handlebars in a place where my upper body could relax. I stopped looking at the computer to check my progress and speed and started, once again, enjoying my surroundings. Throughout the remainder of the ride, I shifted, changed position, and changed cadence whenever asked to do so by my body and the bike – responding unconsciously to the visually imperceptible changes of the false flat. Almost miraculously, I reconnected with the bike and, even though I averaged almost five miles an hour less than my initial pace, I felt as if I was effortlessly humming along – smooth, uninhibited, floating.

The next day, I performed the same century ride in the downhill direction. Downhill is definitely a blessing. The long-term speed one can enjoy without any need to turn or brake creates an environment highly conducive to fusing with the bike. As I started out on this century, I immediately shifted into a higher gear. I continued my strategy of shifting whenever I felt it necessary, and I made no conscious attempt to increase my pace or pedal in an uncomfortably high or low gear.

Again, the illusion of the false flat aided my unification with the bike. Regardless of the fact that I knew I was riding downhill, the trail looked flat. My speeds and cadence were elevated and my effort to keep that pace seemed minimal. I still had to do some work, but gravity helped me along and that little extra assistance contributed greatly to

my connection with the bike. Things just seemed to roll along. With every ounce of effort I put into keeping the bike moving forward I seemed to be rewarded with a pound of performance. Visually, my reward seemed to be grounded in nothing more than my own efforts. I rarely acknowledged the trail's slope. It seemed as if my efforts flowed from me into the bike and cleanly into the forward direction without any help from the terrain.

These sensations of unassisted doubling and tripling of effort can also be found when riding in the wind. Cyclists, apparently unwilling to acknowledge the natural forces of gravity and atmosphere, have the saying, "There is no such thing as a 'wind in your back.' It is either in your face or you're having a good day." But wind, of course, is occasionally at one's back. Riding under these conditions, I experience many of the same sensations I do when riding a downhill false flat. It seems as if my minimal efforts are multiplied into higher levels of performance. This added assistance, whether through gravity or wind, allows me to focus even less on being the engine for the machine. My body becomes more relaxed under the less-taxing conditions, and I am free to focus on other things.

Cyclists who achieve this seemingly effortless transfer of energy often refer to it as "no chain." "No chain" is characterized by a sensation of endless energy stores in the body. Riders perceive the ability to pedal the bike to consistently high speeds with little effort in any situation. This includes riding up false flats as well as strenuous uphill climbs. "No chain" is the sensation that the chain on the bike has been removed from the drive-train and the bike is seemingly powering itself through the landscape.

A deeper connection with my bike often spurs on the experience of “no chain.” Riding a bike on the open road or trail forces the rider to confront a constant and ever-changing stream of challenges. I sense many of the challenges I confront on my rides – like negotiating hills, dodging potholes, or steering through corners – primarily through vision before I feel them in my hands, arms, feet, legs, lungs or heart. However, rolling countryside or false flats regularly comprise a large portion of my rides. These terrains require me to rely less on visual feedback and more on my changing cadence, my increasing heart rate and breathing cadence, the change in pitch reverberating from my tires against the road, the decreased tug of the wind at my jersey, and the vibrations of the bike felt through the seat of my pants. Often, therefore, I find myself confronting the world through the sensations I pick up through the bike and not primarily through my visual gaze. When my connection to the world through the bike functions at its most efficient level, I become one with the bike. It is this oneness with the bike that I cannot simply see in the terrain. I must feel it with my entire being. When this occurs, I achieve the sensation of “no chain.”

When I encounter this state of “no chain,” I confront the world with an entirely different way of being. I am able to perform the foundational eight skills and advanced cycling skills unconsciously. I am extremely comfortable dwelling in a state of dynamic balance. I have the visual focus to see approaching challenges on the road far before I ever confront them. I also have the highly attuned ability to receive sensations and feedback through other body parts in an effort to survey my changing environment and make appropriate and efficient cycling decisions. I have a stockpile of skills and skill

combinations that I can draw from to solve these problems. Each time I solve a certain type of problem, the knowledge gained is added to my collection for future use.

Most importantly, I have the ability to spontaneously address these challenges by composing and performing solutions to these problems on the fly in the face of my constantly changing environment. In this sense, my cycling has become improvisational in nature. I have developed over the years into a cyclist who views the subtle differences of the open road and the steep slopes of the back streets with a perspective from aloft two wheels. The skills I have learned while developing this perspective have been embodied in me. Their functions as both stand-alone and coordinated skills allow me to transform my rides into a series of actions that mimics improvised musical scores. I now see more opportunities and ways of getting around approaching challenges. I see more invitations to solving the cycling problems in multiple ways. When I select and perform a solution to any of these problems, my actions are logically connected to the actions before it. In addition, with my high level of skill and ability, I am able to see multiple pathways around the next problems in the road.

Ironically, my greatest experiences of fusing with my bike occur when I am not consciously thinking about how to ride the bike at all. I hum along at a quick pace with my legs making effortless circles. As I steer through corners, my line does not waiver nor does my speed decrease. I shift up and down in response to the changing terrain. When my legs begin to strain, I shift down. When I feel that I am not contributing enough power, I shift up. My hands move about the handlebar depending on the needs of the bike. I raise and lower my chest to the bike as I play with various aerodynamic positions. I stand up, I stay in the saddle, and I hover over it with my legs acting as shock

absorbers. And all the time that this is going on, I never once have conscious thoughts of “now shift to 42x16” or “put your hands in the drops” or “turn into the fall.” I am riding the bike and the bike is riding me. Riding the bike occurs automatically, unconsciously, fluidly, and smoothly to such a degree that I am able to almost fully concentrate on the wholeness of the experience without fear of the ride degenerating quickly into fragments.

Beyond playing the notes or simply arriving at Point B, I now go for the jazz of cycling by seeking coherence, efficiency, and balance throughout my ride. By connecting each of my decisions to every other decision, both past and future, I create a cohesive ride with similar intentions and levels of awareness to those of the improvisational musician or dancer.

I remember trying to explain to a pedestrian one day my experience of “no-chain.” I tried to explain the smoothness and effortlessness of my ride. I tried to tell her how everything just fit together from beginning to end and that it did not seem to matter what challenges the road presented to me. I took on every one with almost a nonchalant attitude and my resulting performance seemed to be far greater in measure. But I failed in my communicative attempt. In contrast to the fluidity of my ride, I fumbled over my words. I could not find the language to describe it. I could perform the ride, but I could not explain it.

Summary

My rides have evolved considerably since I out-grew of my orange kids’ bike, my yellow three-speed, my blue ten-speed road bike, and my Schwinn racer. On my orange bike and yellow three-speed, I experienced only the fragmented, inconsistent ride of a

beginning cyclist. I had no flow to my actions. I made decisions and performed general solutions to a variety of riding problems as I encountered them. I gave little consideration to how my present decisions and actions would affect my future decisions and actions. I grabbed solutions to problems, performed them and then moved onto the next. My focal awareness hovered on the here and now. My rides were fragmented into maintaining balance and performing the skills of steering, braking, and pedaling separately. Eventually, I could play each of these “notes” individually, but I could not produce any cohesive music connecting all parts of my ride.

Later I became enamored with long-distance endurance riding. My focus changed from learning how to ride a bike to using the bike to travel great distances. In order to become a successful long-distance cyclist, I had to adjust my attention to the functioning of my body. I had to intensify the problems I had been experiencing when riding a bike by adding the additional complications of fatigue and suffering. My rides became conduits to experiencing these characteristics. My outings began to be defined primarily by their Point Bs – specifically how far away it was from Point A and how long it took to get there. Less fragmented than my beginner experiences, I now only evaluated my rides based on my arrival at Point B. Everything encountered on the way to Point B were simply obstacles to be overcome. I could play the “music” that took me to Point B, but I did not create the music myself. I was still playing a “song” defined by the landscape and the destination. I simply played the notes that would play the music in the most efficient method possible.

Today, upon my Trek, I seek *the ride*. Completely competent at riding my bike for long distances, I now seek experiences that incorporate both the arrival at Point B

with those actions and decisions I make en route. I seek to connect each action in my ride to the over-all project. I do not wish to perform solutions to given problems as if they have no relationship to those in my past or implications for those in my future. I seek to perform and remember my actions, consciously or unconsciously, through a blending of one decision into the next, creating a comprehensive whole from the first pedal stroke to the last.

I seek *the ride* in which everything I do is appropriate. I seek *the ride* in which I feel in my legs, arms, heart, lungs – my total being – a connection with how my present actions will affect my future actions. I seek *the ride* in which the manipulation of my bicycle transcends the simple operation of a machine and instead becomes a unification of bike and rider. I seek *the ride* in which I improvise effortlessly through my ever-changing environment in a fashion similar to David Sudnow's "going for the jazz" at his piano.

Chapter Six

Improvisation in Learning to Ride a Bike

Introduction

Improvisational conduct is generally thought of as the simultaneous composition and performance of solutions to various problems. Jazz musicians and modern dancers support this claim, although they would add some key components to this definition. They would suggest that improvisational conduct is closely tied to skill development. Lesser skilled individuals simply lack the ability to intuit and quickly create multiple solutions to given problems. However, those who have prepared themselves by mastering the skills and abilities necessary for higher levels of performance find pathways around, over, and through these challenges.

Musicians and dancers would also point out that improvisational conduct is not a “do what ever you want to do” phenomenon. Significant constraints accompany this type of behavior. These can be determined by examining the rules, histories, and traditions of each particular practice. These rules appear to be very specific to each practice. In other words, following them outside the unique contexts of jazz music or modern dance would make little sense. In addition, breaking one of these rules while in a specific context has significant consequences for the performance – consequences so detrimental that it has been likened to cheating in sport.

The organic unfolding of action is also a prime component of improvisational conduct. Jazz musicians and modern dancers highlight how instances of improvisational conduct must be logically linked to previous actions and to actions yet to follow. The previous and succeeding actions do not necessarily have to be improvisational in nature.

However, genuine instances of improvisational behavior must flow logically and naturally toward the completion of the project and with all other actions occurring en route to that goal. Without this organic relationship to preceding and succeeding activities, the improvisational behavior would make little sense and most likely be in violation of the rules of the given practice.

Ironically, a key component to improvisational behavior, spontaneity, is also the one component that jazz musicians and modern dancers have trouble explaining. The paradoxical command to “Be spontaneous!” puzzles lesser skilled improvisers into responding “How do I do that?” Skilled jazz and dance improvisers readily acknowledge an ability to perform spontaneous actions but have great difficulty explaining to others how they are able to do so. They simply cannot describe how to set the spontaneity of the behavior into motion. “I can’t explain what I’m doing,” they often admit. “I just do it.” As inexplicable as it is, however, jazz music and modern dance practitioners agree that spontaneity resides at the root of improvised action.

With the addition of these essential characteristics, our definition of improvisation can be stated as follows: To improvise means to skillfully and simultaneously compose and perform actions that spontaneously provide solutions to specific problems. Individual actions are constrained by the rules of a given practice, are guided by the theme or idea of the project, and must be logically linked to preceding and succeeding activities.

Armed with an understanding of improvisational conduct, we can now address the primary question of this dissertation. What promise does improvisation hold for informing us about sports in general and cycling in particular? In this chapter, I will

draw attention to some of the important similarities between the developmental benchmarks experienced by those learning to play jazz music and perform modern dance, on the one hand, and those benchmarks experienced by myself and others when learning the skills of long-distance endurance cycling, on the other. In doing so, I will identify several senses in which bicycling can be regarded as improvisational behavior. I will show how riding a bike can transcend what Polanyi terms a “technical activity” – a fixed, deliberate effort to exercise a skill toward a determined, clear ending. Cycling can be experienced as something more than going from Point A to Point B. It can also take on meaningful, symbolic qualities more analogous to works of art – where the performer has only vague anticipations of indeterminate outcomes.

Analogous Benchmarks in Improvisation and Cycling

Several important similarities can be found in the benchmarks experienced on the way to becoming a skilled long-distance endurance cyclist and the benchmarks experienced by musicians and dancers along the path to performing improvisational jazz and modern dance. Most of these similarities can be couched within one of the unavoidable and necessary goals of both improvisation and cycling. Performers in both activities seek to move fluidly forward through a constantly changing and partly unpredictable environment.

When playing jazz piano, the pianist negotiates the terrain of the keyboard by making decisions about the next placement of the fingers based on the present position of the fingers and where they need to be in the future. The music that unfolds can never be erased and done over in the course of the song. The musician simply must keep moving

forward, working from the previously played notes to those being played now and finally on to the next logical series jazz improvisations.

The modern dancer moves the body to develop illusions in force, time, and space by initiating a new movement from the existing position of the body. This new movement, in turn, becomes the launching pad for the next movement. The modern dancer creates and sustains these meaningful illusions through her ability to connect these body movements fluidly and in an organic fashion. Failure to keep the dance moving forward and correctly destroys this illusion.

The cyclist must pedal the bike forward simply to perform the bike riding activity. To keep the bike constantly moving forward riders must continuously make meaningful progressions by shifting the gears, braking, and turning the handlebars – all of which place the bike-rider unit in new configurations of activity. These progressive configurations must also be organic in nature similar to the dancer's and musician's decision-making. Riders must make their next coherent move from these new configurations. The cyclist must move, like the jazz musician and modern dancer, ever forward in a meaningful progression or the bike riding activity ceases to exist.

In all three of these examples, the performer constantly seeks to move forward creating an organic relationship between past, present, and future actions. The confrontation of a constantly changing environment is a hallmark of these activities. Consequently, the important similarities in the developmental benchmarks shared by both improvisers and long-distance endurance cyclists are motivated by the desire to create and maintain coherent, problem-solving actions in a constantly changing milieu. These similarities have been gathered together to fit into the three separate developmental

phases of improvisation extracted in Chapter Three: preparation, risk and responsibility, and dwelling.

Phase One: Preparation

In the initial preparation phase, jazz musicians and modern dancers learn and embody practice specific skills, grow connections between their bodies, their equipment, and the terrain, and develop a keen sense of the rules, histories, and traditions of the practice.

Learning practice specific skills is the first requirement for both improvisational disciplines and cycling. Jazz musicians indicate that knowing the general foundations of music – fingerings, chord structures, melodic principles, scales, modes and arpeggios – is foundational in performing any type of improvisation. Modern dancers note a similar need for these specific skills. They highlight the development of a movement vocabulary. This would include not only the skills of jumping, turning, balancing, and other physical movements but also the skills learned through classical dance training in ballet, ballroom dance, and other genres.

The practice specific skills of cycling are the foundational eight skills identified by pedestrians and experts since the late 1800s. Balance, visual focus, pedaling, steering, starting, mounting, stopping and dismounting constitute the skills that every cyclist must master before they can become proficient at the more advanced skills of long-distance endurance cycling. Not only must they be able to master each of these skills individually but they also must be able to perform several of these skills simultaneously throughout the course of a ride. These eight skills, performed alone and in concert, are foundational

to the cycling practice in a similar fashion to the movement and music vocabularies identified in the fields of modern dance and jazz music, respectively. Developing competence with these practice specific skills appears to represent the first steps taken by all budding improvisers.

Becoming familiar with the “field of engagement” also represents a developmental benchmark found during the preparation phase of all three practices. The jazz pianist, already familiar with the general concepts of the keyboard, struggles to become familiar with this terrain through the new perspective of jazz-seeking eyes. As noted by Sudnow and others, the beginner jazz pianist focuses primarily at the center of the keyboard and only occasionally ventures outward with their play away from the interior, middle keys. The pianist also notes a lopsidedness of perspective characterized by a divided attention between right and left hands and a difficulty in “place-finding” on the keyboard.

Novice dancers need to become familiar with the anatomical limitations of their bodies and the performance space they utilize. These beginner dancers act similarly to the jazz pianists as they tend not to use movements that extend their bodies into elongated, outstretched positions nor do they grasp the concept of using all of the space provided to them for their dance. They tend to stick to formalized blueprints of movement learned during classical dance training. They struggle to see beyond these choreographed steps and seek to develop the “modern-dance seeking eyes” essential in guiding their new intentionality. Both the beginner jazz musicians and modern dancers tend to focus on limited places rather than move freely about their entire terrain or milieu.

Beginning cyclists must also become familiar with their equipment. The narrow and limited focus of the budding rider's attention on the bike is consistent with the narrow and limited focus the jazz pianist has on the piano keys and the modern dancer has on his or her body. Novice riders tend to focus directly on using the machine rather than the more complete skill of manipulating it through the landscape. When I first learned to ride, I often looked down at the sidewalk instead of out into my intended path of travel. I would also look at the brakes when I needed to apply them, the pedals when I needed to keep the bike moving, and the handlebars when I needed to steer through a corner. I had a very narrow focus on each part of the machine as each part was put to use. My visual gaze rarely ventured out away from the bicycle or the environment immediately in front of the bike.

As the jazz musician, modern dancer, and cyclist progress in skill, they expand their abilities to utilize their equipment to its full potential. Pianists find and incorporate into their music keys out and away from middle C. They begin to recognize the functional distance between keys and become more accurate in their key striking. The lopsidedness of focusing on the left and right hands independently transforms into an ability to focus on both simultaneously. The keyboard becomes symmetrical. In a similar fashion, dancers begin to extend their movements away from one fixed point on the floor to a variety of locations found in their space. They break away from choreographed blueprints and standardized steps. They further note how to identify the immediate positions of their bodies at any given time as well as what motions they can make from those positions. They also develop a more highly attuned sense for the anatomical limitations of their bodies.

Similarly, a cyclist's visual gaze moves out and away from the bike and into the landscape. They begin to use more and more gears during their rides rather than skipping chunks of them at a time. Instead of focusing on one part of the machine or performance of one skill at a time, the cyclist learns to focus on multiple skills simultaneously. Similar to pianists becoming familiar with the keyboard and dancers becoming familiar with their bodies, cyclists begin to become attuned to the machine's limitations and capacities. Cyclists begin their progressive unification with the bike in a similar fashion to the jazz musician's unification with their instruments and dancer's unification with their bodies and spatial-temporal allowances.

These beginners cannot simply explore their environments and equipment in a haphazard fashion. Rather, they must recognize, learn, and follow the histories, rules, and traditions of their given practice communities. These rules come in two primary forms – natural and cultural. First, beginners must confront the natural rules of their practice. Rules of physics, biology, homeostasis, and the like frame performers' actions. Jazz pianists are constrained naturally by the reach of their fingers and the speed at which they can practically move from one note to the next. Modern dancers are obviously limited by the anatomical constraints of their bodies. Cyclists are limited by their physiological capacities of oxygen consumption, endurance, and strength.

Beginners must also address another set of rules – the traditional conventions of the practice. Jazz musicians and modern dancers strive to avoid unduly repeating themselves. They further strive, when playing or performing in groups, to flow within the context of all others rather than selfishly take center stage. Cyclists have other conventions such as riding single file with traffic, using appropriate hand-signals,

stopping to aid other riders with mechanical problems or sharing the duties of pulling (leading) the paceline during extended trips – cultural etiquettes that count as good riding or good riding form. These specific rules define the scope of appropriate activities allowed within a practice. They guide the logic in the unfolding of behavior. Consequently, both the jazz musicians and the modern dancers recognize the important constraining value that these rules place upon improvisation. These rules provide significance to the activity by placing it within the context of the social practice.

A review of the authoritative texts of the practice reveals the rules, basic styles, and expectations of each community. Another avenue for gaining this knowledge is through repetition and mimicry of those already skilled in the practice. Both the following of practice-specific rules and the learning of those rules through mimicry and repetition are characteristic of all three practices. Budding jazz musicians copy and memorize the short motifs, clichés, and phrases of successful jazz musicians in an effort to experience improvisational behavior. Modern dancers similarly copy the movement phrases of those more experienced than they. Cyclists look to the peloton for training methods and practices best suited to develop their long-distance endurance skills. All three demonstrate persistence in practice and repetition in an effort to steadily accumulate the skills necessary to perform their activities with a high degree of skill.

Developing practice specific skills, becoming familiar with equipment and terrain, performing within the rules, traditions, and histories of the practice, and learning all of these through the strategies of repetition, mimicry, and persistence are found in jazz music, modern dance, and cycling. These important similarities between the jazz and modern dance practices and that of riding a bike for endurance constitute the first set of

comparisons that show these skills in a similar light. All three build a foundation on which to make instantaneous decisions in an unfolding, partly unpredictable environment.

However, students of these practices are not done learning when they leave phase one and move on to phase two. The learning of practice specific skills and the progressive unification of performer, equipment, and terrain continue throughout all three developmental stages. Phase one is best interpreted as a period for accumulating clusters of skills that are increasingly embodied throughout the entire learning process. It represents a foundational phase, one that functions as the undercurrent for those to come. As the learner proceeds to acquire more skills and abilities throughout their progress, those new items are stockpiled for future use in a similar fashion to the incorporation of foundational skills and concepts.

However, at some point in their development, learners reach a critical point. Their continual growth begins to produce new experiences. Learners find themselves operating with a new perspective and in a more advanced stage. The focal point changes. No longer is it enough to mimic another's actions or do what a teacher says. No longer is it merely *a song, a dance, a ride*. Performers must strike out on their own to make it *their* song, dance, or ride.

Phase Two: Risk and Responsibility

Scholars in both jazz music and modern dance agree that improvisation is not something that can be copied, duplicated, or replicated. Simply reproducing the notes that another jazz musician previously played or miming the bodily motions of another modern dancer does not constitute improvisation. These scholars contend that

improvisation must be a personal creation. Simultaneous composition and performance must be acted out by the individuals themselves on the spur of the moment.

In addition, the decision-making that creates the logical, organic flow in improvisational behavior must be personal in nature. Choice in action becomes the responsibility of the performer and not any external teacher or text. Performers must accept responsibility for their actions. By doing so, musicians and dancers ultimately accept the risk that their best intentions may fall short and their efforts to move forward through an ever-changing environment may fail. It is this acceptance of a path of risk and responsibility that, at least in part, separates those pursuing improvisational behavior from those content with the road maps and blueprints of others.

Three commonalities between jazz music, modern dance, and cycling comprise this second phase of risk and responsibility. The first requires the performer to step away from the aid of teachers, ready-mades, and designed pathways. Sudnow and the other jazz musicians all arrive at a point in their development when they realize that a teacher's instruction no longer benefits them. Scott, the ballet dancer turned modern dancer, after realizing that following her teacher's advice actually limited her ability to explore movements in modern dance, also liberated herself from any further tutelage in her progression to becoming a modern dancer. These performers chose to minimize these support structures from their lives. By personally accepting the responsibility in decision-making to create a unique, logical flow of activity, those who would find improvisational conduct move closer to achieving their goals.

The second benchmark is closely associated with the acceptance of responsibility in action. Performers must accept the risk of making mistakes through their on-the-spot

decision-making. Since improvisation arises from a constantly moving forward activity, mistakes – illogical decisions in action from the point of view of the practice and what the performance is about – cannot be taken back and, as previously noted, the performer is forced to make one of two choices. The first is to simply stop performing and view the mishap as causing a catastrophic destruction of the project. The second is to view the mistake as an opportunity to follow a new pathway. This new pathway must be handled in the same manner as previous pathways. The mistake simply becomes the new launching pad for the next action. Ideally, this next action logically connects with the previous actions and to those yet to come. In this case, instead of the mistake ending the project, the project continues to move forward – albeit down a different path.

Riders also make the decision to accept the risk and responsibility inherent in long-distance endurance cycling. Beginner riders often follow endurance training programs designed by those working within the peloton. As they gain knowledge of cycling, they begin to take more responsibility for the designing and performing of those training programs. Only the riders themselves can put in the long hours and miles upon miles in the saddle – not those who teach them. Consequently, riders must become solely responsible for the development of their fitness and endurance capabilities.

Perhaps behavior that is more analogous to Sudnow's and Scott's stepping away from their teachers occurs when riders take the responsibility for their stream of actions while performing those long hours and miles. Each decision made while on those rides – cadence, effort, gear, etc. – are all left under the riders' control. Riders must come to terms with being completely responsible for those actions.

Riders must further accept the risks inherent in traveling over long distances for a great deal of time through an ever-changing environment. These considerations to time and distance place riders in a position of forced decision-making. Any mistakes in the decisions of route, gear, cadence, effort, and the like that affect the progressive, logical flow forward of the bike-rider unit can result in actions similar to those found in the jazz music and modern dance literature. The rider can either voluntarily stop (as would be in the case of exhaustion, “bonking”, or crashing) or view the erroneous action as part of the organic outpouring of their ride, intuit the next coherent course of action, and proceed forward from that point.

These two benchmarks of risk and responsibility depict the acceptance of a self-sufficient lifestyle. This change in lifestyle appears to be the major turning point during this second phase of development. Musicians, dancers, and cyclists seeking further development toward their goal of improvisation and long-distance endurance skills, respectively, confront the fact that they alone must be responsible for their actions and decisions while performing their activities. In addition, they must accept the risk that any mistake made along the way is not only their own, personal fault but may also jeopardize the continuation of the forward-moving project. These performers must realize that their progress through their respective constantly changing environments does not allow for “going back,” “doing over” or “erasing” illogical actions. Instead, the musicians, dancers and cyclists must refocus with a positive perspective and see these mishaps not simply as threats but also as opportunities that must be dealt with as their unique characteristics allow. The acceptance of a self-sufficient lifestyle helps the performers see practical applications to things often viewed as detrimental and demoralizing.

Cyclists, musicians, and dancers also accrue one additional benefit as they pass through phase two. They experience a deeper connection to their equipment. By continuing to refine and embody practice specific skills and by taking responsibility for their personal manipulation of their equipment, these performers continue to become more attuned to their capabilities and limitations in performance with their bikes, instruments or bodies. These performers now live toward the world from a different perspective, with “new eyes.” They sense changes in their environment through their equipment, almost *as* their equipment. They explore their landscapes not as separate bike and rider units, but now as one working unit – the bike-rider.

Through their developing decision-making abilities, musicians, dancers, and cyclists compose and perform solutions to the variety of problems that confront them. Furthermore, they begin to see a variety of invitations and pathways around specific challenges. They find themselves able to pick any one of these pathways at the spur of the moment, perform it, and then flow to the next challenge that emerges from the previously selected invitation. It is this consistent, logical, and progressive unification of action in conjunction with a joining of body and equipment necessary for highly skilled performances that these performers experience next in the third and concluding phase of development, dwelling.

Phase Three: Dwelling

Jazz musician and improvisation scholar Bruce Ellis Benson characterizes this final stage of dwelling as an internalization of practice-specific capabilities to such a degree that one consistently acts as a musician acts. Sudnow provides a more concise

description of dwelling, characterizing it simply as having surety in places to go. Both claim, as do others, that dwelling deeply in the skills and sensations of a practice creates a new intentionality in which the equipment, the landscape, and the performer unite to confront an ever-changing environment. This new intentionality comprises the heart of this final phase. It is a new intentionality in which the performer is trying to do something different than playing a song, dancing a dance, or riding at bike. It is Sudnow “going for the jazz.” It is Sheets-Johnstone creating an “illusion.” It is my search for *the ride*.

Musicians, dancers, or cyclists who dwell within their respective areas must be highly skilled and knowledgeable about their practice. Armed with this constantly growing base of knowledge and skill, they intuit multiple solutions to a variety of specific problems arising in their environment. These performers see multiple invitations and pathways around these problems. They simultaneously compose solutions to these problems, select one, and perform the solution at the spur of the moment. Further, they intuit subsequent actions that can be launched from the most recent decisions creating and sustaining a regular and efficient organic line of action.

Musicians who dwell within the practice of jazz piano see multiple places to go as they progresses through a piece of music. Without conscious thought or hesitation, jazz pianists flow from finger position to finger position following the dynamic musical line to where it takes them over the keys. Unconsciously selecting and performing simultaneous skills from their stockpile of subsidiary knowledge, the pianist puts together a constant stream of “ready-set-gos” moving about the keyboard in a logical progression.

Dancers who dwell within the practice of modern dance similarly intuit multiple invitations to action with their bodies. Dancers dwelling within the rules, histories, and traditions of modern dance unite their past, present, and future actions into an indivisible wholeness and illusions of force, time and space. They create a condition in which a moment-to-moment, non-stop flow of motion and decision-making specific to the illusion at hand occurs. This state constitutes the pinnacle of the dancer's quest to perform improvisation.

Long-distance endurance cyclists also experience a dwelling while in the saddle analogous to that experienced by musicians and dancers. Cyclists experience this dwelling on two different levels. At its most fundamental level, cyclists progressively learn to function within an activity that requires continuous balance, an elevated center of gravity, and a constant forward motion. Cyclists must become comfortable dwelling within this environment. They must internalize the skills necessary to maintain this condition to such a degree that they can attend to this riding environment unconsciously through much of their rides.

When they are able to attend unconsciously to this triad of conditions, cyclists can then dwell more deeply in the skills of long-distance endurance cycling. Responses to the problems of false flats, climbs, descents, curves, road consistency, and bodily conditions require a confrontation with multiple potential solutions. These solutions manifest in the cyclists' personal decisions to increase or decrease factors such as cadence, gear, or physical exertion. It can also be found in a change in the riders' posture on the bike – hand position, standing up, sitting down, or moving forward or backward in the saddle.

I often find myself sensing these challenges primarily through the visual stimulus of seeing nuances in the road. But I also sense the challenges through the vibrations of the bike, the sounds of the drive train and the wheels against the road, the tension in my legs, the pounding of my heart, and the depth of my breathing. I unconsciously put these different sensations together to get a feel for what needs to come next. Is it a shift in gear? Is it a series of power-strokes? Is it a more aerodynamic position? My mind intuitively provides multiple coherent responses to the challenges I sense through the bike that has now become an extension of my body. I see multiple invitations and pathways for actions to solve the given problem. I then perform one of these solutions spontaneously placing me in another set of sensations and feedback delivered to me through the bike. From here, I make my next decision continuing an efficient and organic line of action through the constantly changing demands of my ride.

Through the development of cycling skills, the connection with the bike, and a new intentionality of approaching the landscape as a bike-rider unit, I regularly find myself dwelling in the cycling experience. I unconsciously attend to staying upright and balanced on the bike. I unconsciously attend to the subtle changes necessary to continuously and fluidly move forward through my world. My focal attention is normally not aroused by one gross stimulus entering the body through sight, sound, or touch. Rather, I focus on the totality of subtle changes sensed through my feet, legs, buttocks, chest, arms, hands, eyes, and ears delivered to me through the bike. When changes are necessary, I make them efficiently flowing smoothly and quickly into a new state of being.

Similar to the jazz pianist, I simultaneously compose and perform a stream of activities as I roll along on my bike with very little preconceived planning. I simply ride through my landscape intuiting the demands of the ride with my bike. I adjust to those demands in the most efficient manner possible. I compose a sort of musical score as I ride. I select certain gears at certain points that help me play the “notes” necessary to overcome given obstacles. I play these notes with varying degrees of intensity – pressing harder on the pedals at times, coasting during others – as I move ever forward over the macadam. On some days, the physical limitations of my endurance and strength will force me to play certain notes more than others. On other days, the conditions of my environment – road consistency, weather conditions, climbs, descents, and false flats – will challenge me to create a different score.

I confront so many corporal and environmental variables during my rides that it would seem unlikely that any “musical score” created would be the same score played on any previous ride. Each time I head out, even over the same roads and pathways, I make different music. A unique musical score, within significant cycling constraints, is almost always created.

When performing jazz music, Sudnow made the claim that he knew what the next note he played would sound like because he knew it was the next sound. When riding my bike, I often know what the next gear will feel like because I know it is the next gear. Much like modern dancers kinesthetically attuned to the positions of their bodies at any given time, I too am highly cognizant of my body’s condition and the efficiency of my actions that drive the bike forward. Much like jazz pianists who consistently and logically work through an improvisation using multiple finger placements and hand

positions, I too am able to maintain a logical flow of action by working through gears, pedal cadences, postures, and intensities.

If Benson's claim is true – that improvisational conduct arises from being so engrossed in certain skills that one acts as a musician acts – then my current activities in the saddle are analogous. I experience improvisational conduct by knowing cycling things to a high degree of skill, by confronting my world with a new intentionality, by merging with the bike, and by being able to continuously and simultaneously compose and perform spontaneous and logical solutions to given cycling problems. When I ride my bike, I dwell in the cycling experience. I have, like Sudnow, found surety in places to go. I act as a cyclist acts.

Dis-analogous Benchmarks in Improvisation and Cycling

Long-distance endurance riding appears in several ways to be analogous to the standards of improvisational behavior set forth by jazz musicians and modern dancers. However, some notable dis-analogies between endurance cycling and these traditionally improvisational practices exist. First and foremost, performances of jazz music and modern dance are usually categorized as aesthetic projects. These performers approach the problems of their practices with the intention of creating something of beauty – something that others will enjoy as works of art. In the end, the final products are evaluated based on their aesthetic qualities captured by the sound, cadence, and organization of the music or by the meaningful illusions created by movements of the body through force, time, and space.

In stark comparison, cycling is a very practical project. Cyclists rarely set out on rides with the intention of creating a beautiful, aesthetic work of art. They are not necessarily concerned with creating anything of beauty. Although some aficionados of the practice will recognize and comment on the qualities of the performance, the most common evaluation of cycling is measured by markers of efficiency – namely space and time. Did the rider get from Point A to Point B? How many miles were covered in how many minutes?

Still, cycling sometimes transcends its practical parentage. Trips turn into “rides.” Efficient pedaling turns into “no chain.” The ride becomes significant in ways that transcend the markers of mere transportation. Just as jazz pianists find “melodying” and dancers enter the world of “forcetimespace,” cyclists encounter experiences of beauty that no script could ever produce. Thus, cycling – while not an artistic project per se – is not precluded from producing comparable products of beauty.

It could further be argued that jazz musicians and modern dancers often create their improvised works in ensembles in contrast to the solo performances of the non-competing cyclist. Intuitively, it would seem that the inclusion of other improvising performers in the problem-solving process may open more pathways through, around, and over certain challenges. However, jazz musicians and modern dancers also have solo performances that are viewed by their respective practices as no less improvisational. Solo and group performances simply allow for different experiences and skillful demands. Within the cycling world, riding in a group or alone would appear to be comparable. It would appear that musicians, dancers, and cyclists, solo or in group performances, can experience improvisational conduct at significant levels.

A third difference deserves attention. While all three practices utilize some sort of equipment (musical instrument, human body, bicycle), degrees of freedom in using this equipment may not be analogous. The limitations dictated by the bicycle combined with the physiological limitations of the rider appear to severely hamper the ability to perform improvisationally on a bicycle. Cycling moves are highly repetitious and severely constrained. It would seem that these limitations would greatly reduce the rider's ability to see and perform multiple invitations to pathways around given cycling problems. Possible solutions to cycling problems would seem to be limited both in number and scope.

In contrast, jazz musicians and modern dancers appear to be less limited in the same manner. Musicians can work with the number of tones or combination of notes that the instrument can actually produce on its own. The ability of performers to "hit the high notes" adds to their possibility of sounds. Blending notes together, chord combinations, and other performance capabilities further add to these possibilities. Modern dancers are even less limited by their equipment given the number of possible positions, movements, and combinations of movements available for the human body. Typically, no apparatus or equipment constrains their movement vocabulary.

In addition, jazz pianists still have options available to them when they work up the keyboard and eventually run out of keys. They can effortlessly "turn around" and head back into a lower range. Similarly, when modern dancers reach the maximum extension of their arms, they have the option to flow gracefully back into a contracted position. These options appear to always be possibilities.

But cyclists are limited to considerably fewer notes to play. Bike gearing normally ranges from three to thirty speeds – the latter being more of the norm in long-distance endurance cycling. These speeds assist in the riders' ability to constantly and meaningfully turn over the pedals. At times, however, riders find themselves moving along so quickly that they cannot spin fast enough to apply more energy to the bike. At other times, riders can find themselves on a steep climb in their bottom gear without the physical ability to continue pedaling at the strenuous and low RPM. Moving back up or down through the cassette, like a musician moving to a lower octave or the dancer contracting instead of expanding, is either physically not possible or does not contribute to the project. In both cases, riders appear to have run out of gears and places to go.

Cyclists, however, have other solutions to the problems of running out of gears. On long, fast descents, the riders seek more aerodynamic positions and smooth lines of travel to increase their speed rather than applying force to the pedals. In this case, riders choose different approaches to milk energy and speed out of the descent in the absence of pedaling. From their base of cycling knowledge, they create a solution that confronts the problem through a different strategy.

During uphill climbs when riders “bottom out,” they can choose to attack the hill in a curved fashion rather than straight on. Cyclists ride parallel across the road followed by a series of angled ascents up the hill creating brief rest periods in the strenuous climb. By doing this, riders can continue to pedal and move forward confronting the problem in less of a head-on fashion. They now approach the problem from (both literally and figuratively) a different angle.

These scripted plans appear to be analogous to the “goodies” referred to by the modern dancers or the clichés and riffs acknowledged by the jazz musicians. They also constitute a third dis-analogy that deserves attention. “Goodies” are short sequences of activity repeated from time to time in a variety of performances. They form bridges often used to connect different parts of the activity. While those in improvisational practices frown on the overuse of “goodies,” they do allow for their use on occasion. The danger lies in their overuse – an activity directly linked to diminished improvisation.

It can be argued that riders who do run out of gears regularly and excessively follow scripted and preconceived plans designed to eventually lead them back to a greater number of options. I earlier used the example of One-Mile Hill in this dissertation. Due to its steep incline and length, I often find myself falling back to a preconceived plan of attack after bottoming out. When descending Wopsy Mountain, I always find myself running out of gears due to the speeds. My focus turns to creating the most efficient line of travel and finding the most aerodynamic position. The plan is similar each time.

I concede that when I ride up One-Mile Hill or down Wopsy, my preconceived plan to negotiate these segments may be similar each time. However, the actual performance of that plan varies considerably for a variety of reasons. I may be having a “strong day” and experience “no-chain” going up One-Mile Hill. It may be a very hot, oppressive day, and I may bottom out more quickly than normal. I may arrive at the base of the hill with forty strenuous miles in my legs or early in the ride with fresh legs. I may be mentally more prepared on some days to face the challenges of this ride. On others, I may be completely unfocused. I may be descending Wopsy early in the season when the roads are wet and gravelly – conditions that strike at the heart of the nerves needed for

speed. It may be later in the season when my confidence level in descending has grown, and I am more apt to attempt different aerodynamic positions. I may simply be in a reckless mood and find myself cutting the corners more and feathering the brakes less.

Unlike the jazz musician who can throw a cliché into their improvisation or the modern dancer who can use a “goodie” any time it logically fits, cyclists often have little choice of when to use their preplanned or more stereotypic strategies. They usually arise during the more specialized segments of the ride. This is primarily where the dis-analogy arises. However, as described above, even these preconceived plans are not inalterable while the rider is engaged in the doing. In fact, these extreme conditions may separate those able to function with more improvisational behavior – riding through the difficult problems by seeing various invitations to unplanned solutions – from those who’s deficiency in cycling knowledge and lack of physical ability limits them to fewer pathways. From an outsider’s perspective, these segments may often appear to be performed the same way, but a closer interrogation of the personal experience reveals that the musical score is composed and played differently each time.

One final dis-analogy may actually be the catalyst that mitigates much of rigidity and inflexibility that seems to characterize long-distance endurance cycling. Riding a bike automatically puts one in a physical state of constant, dynamic change. Playing jazz music and performing modern dance do not require the same physical conditions. Riding a bicycle requires one to constantly move forward balanced on two thin, aligned wheels with an elevated center of gravity. The demands of this condition automatically place one physically in a constantly changing environment – one of the key components of improvisational conduct. Riders must regularly make subtle adjustments

within this environment to maintain their balance or the project ceases completely. Riders either fall off the bike, or they voluntarily dismount to rejoin the non-cycling world supported by two feet and a lower center of gravity.

Jazz music and modern dance do not automatically require reactions to a similarly unstable environment. When Sudnow sits down at his piano with the intention of playing jazz, he most likely does so in the same manner each time. His feet are relatively flat on the floor, his bottom stabilized on the bench, and his hands placed delicately on the keyboard. At no time during his performance does he have to worry about maintaining this stable position. He does not have to worry about falling off the piano. The starting point for his improvisations would not be characterized as a constantly changing physical environment analogous to that of the cyclist.

Scott and the other modern dances are also relegated to more stable positions when performing their art. At times, modern dancers put themselves into positions of tenuous balance to create their desired illusion. However, these positions differ from the initial and automatic instability inherent in cycling. Any unstable balances or positions performed during their dance compositions are most likely parts of the performances themselves rather than any automatic and unavoidable starting point that is steeped in instability. Clearly, the inherent physical environments in which these three activities take place are not the same.

Could it be that the requirement to dwell in the constantly changing environment of dynamic balance is the catalyst that allows for improvisational conduct to flow from the rigid and inflexible requirements of the bicycle? Jazz music and modern dance practices do not automatically require their performers to assume a similar dynamic

position. Those activities, by their nature, are already more open to improvisational conduct. Their products – the moving music or flowing dance – constitute the creation and maintenance of unstable terrain. They need no additional constant change to create their improvisations.

However, as noted in the dis-analogies above, cycling seems to be more restricted in invitations and pathways than the other two practices. Being balanced, upright, and moving forward on the bike only puts the cyclist “at the keyboard.” In order to “make the music” or experience *the ride*, cyclists must perform additional actions on the bike while in this milieu. With the added characteristic of always being in a constantly changing physical environment, the dictations of the bicycle may be softened somewhat, creating fertile soil for the blossoming of improvisational behavior.

This is not an assertion that cycling is more improvisational than basketball, football, soccer, or any other activity. I only wish to show that it is this characteristic of riding a bike that allows this rigid activity to be more improvisational. Take that characteristic away and cycling becomes an entirely different, more stable, and highly un-improvisational project. It would be the difference between riding a stationary exercise bike and riding a road bike on the varying pave. Take away the necessary dwelling in the constantly changing environment and the possibility of improvisation significantly decreases.

Some obvious dis-analogies exist between the practices of long-distance endurance cycling and those of jazz music and modern dance. However, these incongruencies do not appear to be factors that eliminate the possibility of improvisational behavior in any one of them. Within each of their respective practices,

performers are still able to “go for the jazz,” create an “illusion,” or experience *the ride*. These differences simply appear to be certain characteristics of each practice that are more or less conducive to the creation of improvisational conduct.

Making Music in Different Places

The analysis shows clear analogies between the personal experiences of those seeking improvisational conduct and those learning to ride a bike for distance and endurance. It reveals a similar progression of benchmarks confronted and overcome along the way to improvisational conduct. These benchmarks can be generally organized to form three phases: preparation, risk and responsibility, and dwelling. In the final phase of dwelling, jazz musicians and modern dancers find themselves composing music and creating choreography on the fly and without scripted preparation. It is also during this final phase when cyclists find themselves spontaneously constructing the scores for their rides creating them through a continuous adaptation to a constantly changing environment.

Even though improvisation requires a high degree of skill mastery, it would appear that the making of such music on a bike is not limited to those riding in the peloton. Intuitively, it would seem that the preparations of professional cyclists limit their abilities to experience improvisational behavior. Their vast expertise in confronting the problems of slopes, turns, and false flats may actually reduce the necessity to create spontaneous solutions to certain problems arising within competition. These professionals would be so experienced with cycling challenges that a set of designed solutions would almost always be applied to categories of confronted problems. Yet the

same processes experienced by myself and other non-professional riders on the way to a “no-chain” phenomenon is also reported by those of the peloton.

In the inaugural Tour of California, Levi Leipheimer described his prologue win with words that ring strongly of improvisation. The prologue, slightly less than two miles long, consisted of mostly flat road but ended with a very steep kilometer climb up Telegraph Hill in San Francisco.

Before the race, Leipheimer claimed to have been nervous about the chainring set-up on his machine. Eventually he decided on a 54 – 42 package. This mechanical preparation for the race did not make much difference, however, as Leipheimer accomplished most of the final climb in his 54. “I turned the corner with 1km to go in my 54-tooth,” Leipheimer explained, “and I thought, I can go a little further in my big chainring. I went all the way up to the next left, and I thought I still had some gas left, so I kept going.” He did eventually switch to his 42 while in the climb. As much as Leipheimer acknowledged the risk of keeping a higher gear into a climb, he also notes the risk of shifting from a big chainring to a smaller one while tackling such a demanding section of road. “I looked down...and my RPM’s were at 77,” Leipheimer continued. “I thought this was a little low, and so I’d better switch, which was a bit of a risk on a steep climb.”¹

This little narrative reveals several of the key components of improvisation. Leipheimer prepared for his race by making sure that his equipment was set-up properly. He was also prepared with a high degree of skill and endurance or he would not even have qualified to ride in this race. Next, while he may have had a general plan to attack Telegraph Hill, in the end he admitted to spontaneously creating a solution to this

problem. His decision to stay in a higher gear longer and shift between chainrings while in the climb exhibited a high degree of risk in choice-making by the rider. Finally, Leipheimer described his overall experience as “having some gas left” and being genuinely “surprised at how fast [he] was going and how quickly the last bit (the climb) went.” He prepared, he took a risk, and his improvisation paid off. “You never know what could happen,” Leipheimer concludes, “but it worked.”²

While the musical score created by this professional rider most likely arose from a well-defined plan of attack, those of us unconcerned with race results may or may not preemptively develop such strategies for our rides. However, I only have a limited number of options around my workplace to cycle. Consequently, my regular daily rides consistently cover the same roads. Using these available roads, I have developed several training routes. I select one of these designed routes mentally before I head out each day. Some of the routes cover the same segments of roads. Others are more specific and unique (such as my “Wopsy” route.) In any event, I generally select from only six or eight routes each day and normally ride each one of these routes several times a year. Even my commute to and from work rolls over the same roads, as few safe and efficient paths exist covering the thirty miles. How does the music I make when I repeatedly ride over the same terrain compare to Leipheimer’s limited experience up Telegraph Hill?

My experience tells me that the repetition in my routes rarely leads to the same music being played each time. I am not saying that it has not occurred to some degree, but I simply cannot recall an overwhelming number of experiences in which one ride over one route was identical to a different ride on the same route. In fact, the few times

that this has happened, I recall being genuinely bored with the entire project that day. At the end of the ride, I felt as if I simply went through the motions.

The reason for these variations in experiences can be traced to the fact that I often use my daily cycling experiences to develop my skills. I try to take corners with more speed and efficiency. I try to hold a more aerodynamic position for longer periods of time. I try to beat my time in completing the ride. I try to use different gears to accomplish the same challenges on different days. I rarely go out for a ride with the mindset that I will simply be doing the same thing each time.

However, I also rarely go out with the mindset that I will be practicing corners, tucks, or gearing. I simply pick a route that logically fits between what I rode yesterday and what I plan on riding tomorrow and ride it. As the challenges of the ride come up in a predictable succession, I make a decision whether or not to practice the solution. Some days I have good legs and will attack the corners. Other days I will not be so energetic and make no effort to beat my course record. At other times, factors completely out of my hands, such as road construction and traffic, will force me to focus on other tasks.

Rolling over completely new terrain also offers its benefits and restrictions to the improvisational nature of the project. When I go exploring on new roads, I often find difficulty in taking into account the demands found down the road. For example, choosing to go hard up a hill early in the ride may affect my ability to go up a hill later in the trip. My inexperience with the route does not afford me such foresight. In addition, my inexperience with the terrain often makes me hesitant on descents and cautious when cornering. Usually after I gain some familiarity with the routes I can tinker with the

skills needed to perform it at a higher level. During my first few rides over new terrain, however, my music is often repetitious and predictable.

Yet my unfamiliarity with these rides also allows for a considerable amount of improvisation. As I confront hills, turns, roads, and scenery unfamiliar to me, I must rely on the messages delivered through my eyes, ears, hands, feet, rear, heart, and lungs to an even greater capacity. My intuition must gather information from these sources to devise on-the-spot solutions to the newly-experienced problems of the ride. My body must then perform these solutions with the hopes that they will be organically connected to my previous actions and to what lies around the next corner – only on these occasions I do not know what actually is around the next corner.

I recently explored a small section of road that connected two parts of one of my normal routes. I knew that it contained some regular climbs because other roads parallel to it have these characteristics. I knew that it was truly a back-road since there were no lines painted on it, nor were there any shoulders. I expected the consistency of the road to vary considerably. As I traveled through the segment, I found myself eagerly chewing up the rolling terrain, standing often when going uphill and swooping down the descents with some caution. It was different than my routine rides because I did not know what I would confront around the next corner. I had to address each challenge based on my previous experiences but could not foresee how these decisions would affect me later in the ride. I truly had to rely on my skill and the multiple sensations delivered to me through the bike. The music I produced may not have been perfect, and I may have fallen back on “goodies” occasionally, but it appeared to be no less improvisational than those experiences found in the other two examples.

In fact, riding in a race, taking repeated trips over the same terrain, and riding over new roads all have analogous music making components. Professional riders, who plan to cover a distance as fast as possible, still rely on the feedback from their bodies and bikes to make their next move. Recreational cyclists, who ride similar routes each day, use the same types of feedback to accentuate different segments of their rides. While both of these riders are well versed in the routes they are covering, riders who are exploring new segments of road are not. However, these latter riders still rely heavily on their intuitions, abilities, and previous experiences to accomplish the task. Again, while cycling, from an outsider's perspective, may appear to be a very inflexible and rigid activity, these three examples show that improvisational behavior regularly crops up in multiple cycling venues.

The beauty of riding a bike for long-distance and endurance is that it often exacerbates problems confronted in an ever-changing environment. The heat of a summer's day may comfort a rider in the first few miles of an outing yet scourge them later in the ride. The regular endurance training that a rider goes through may allow the rider to participate in long-distance cycling practices, yet too many days of too many miles in a row may come back to haunt them at any given moment. Both the external factors of terrain and machine and the internal, physical factors of the riders' abilities are so complex that even the preparation for a race, the repeated riding over the same terrain, and the unfamiliarity with a given route would not necessarily eliminate the making of newly improvised music each time.

Conclusion

Comparisons between the journeys of jazz musicians, modern dancers, and long-distance endurance cyclists have revealed analogous benchmarks along these developmental pathways. It seems apparent that those pursuing skills in endurance cycling would experience many of the same types of challenges that jazz musicians and modern dancers experience when pursuing improvisational outcomes. Does this mean that long-distance endurance cycling can be considered improvisational conduct in the same respects as jazz music and modern dance?

This question can be answered in two ways. The first would be to liken riding a bike to activities that Polanyi characterized as steeped in “technical inventions.”³ “Technical inventions” are practical, fixed, deliberate efforts to acquire a determined, clear outcome. The decisions made while riding a bike are very much like these inventions. When I leave my house for a ride, I know the route I will be riding. I have the goal of going from Point A to Point B. I make practical and deliberate decisions along the route to achieve that clear goal, and I know the skills that I will need to accomplish the ride. I simply “invent” solutions in a purposeful fashion to known problems as they occur throughout my trip.

Undoubtedly, having such clear, distinct end-products directly contrast with the jazz musicians and modern dancers’ experience of improvised behavior. Their projects usually lack any such defined outcomes. How can cycling be improvisational if it includes such obvious planning? Simply, cycling can be considered an improvisational activity due to the absence of blueprints or set plans for many of the decisions and actions

that make up the journey. Decisions made en route from Point A to Point B are often instantaneous and spontaneous – two key characterizations of improvisational behavior.

Cycling, from this perspective, can be better described as a flowing or improvisational inventiveness. Riding becomes an instantaneous intuiting of new means to solve known problems. Riders, while knowing the route to be traversed, create the plan for accomplishing their rides as they ride it. Riders feel the plan unfolding before them and their immediacy in decision-making along that route is analogous to that decision-making experienced by the jazz musician and modern dancer. Because of these characteristics of long-distance endurance cycling – the absence of blueprints to complete the ride and the immediacy in decision-making – this type of bike riding can be viewed as more than simple, practical, goal-driven technical invention. It is at least roughly analogous to the improvisational projects of jazz music and modern dance performances.

However, riding a bike can also take on mythic characteristics. Cycling can become a meaningful ritual that transcends the activity of moving from Point A to Point B. The ritual of riding a bike for long-distances and endurance can evoke coherent stories providing detachment from day-to-day affairs.⁴ Polanyi describes this detachment from the common concerns of the day as a myth. Experiencing a myth, according to Polanyi, is “what happens when we listen to great poetry or a great play or view a great painting. We are overcome by it and carried away into its own sphere, away from the sphere in which we lived a moment ago and to which we shall presently return.”⁵ Experiencing of myths fills its subject with “inexhaustible significance” in contrast to other humdrum duties of the day.⁶ In this sense, riding a bike moves beyond mere technical activity or improvisational inventiveness.

To perceive riding a bike as a mythic activity, one must suspend certain realities. One must adopt an artistic “frame” which Polanyi defines as an artificial pattern in which isolated artistic experiences are separated from the “accidents and irrelevancies of everyday existence.”⁷ One must imagine the bike riding experience separate from the task of traveling from one place to another. Instead, the creation of a storyline, one with its own plot, suspense, ritual, and ending must take precedence. By doing so, one must be willing to integrate certain incompatibles such as the practical planning associated with going from a known Point A to a known Point B (premeditated repetition) with the artistic qualities of spontaneously creating something new, fresh, and unrepeatable during every outing (improvisational behavior). If one is willing to adopt the artistic frame of long-distance endurance riding, then the invention of a storyline becomes coherent even in the light of the fact that the underlying project of getting from Point A to Point B has not changed. However, if one is unwilling to adopt such a frame, then riding a bike remains an exercise in human-powered transportation.

If riding a bike takes on this mythical hue, then cycling as improvisation becomes much like Polanyi’s works of art. “To produce a work of art,” Polanyi explains, “is to make something never before seen but grasped in a vague way by powers of anticipation.”⁸ The creation of works of art, according to Polanyi, occurs as a blend between the discoveries of scientists and the practical activities of inventors. The artist’s project is not completely that of a scientist who discovers things hidden in nature, but the artist does create something “never before seen.” In addition, the artist’s project is not completely one of invention, for the outcome of his or her efforts is largely indeterminate. However, the artist does have a “vague anticipation” of the product sought.

In this sense, long-distance riding becomes less characterized by intuitively correct, instantaneous and skillful adjustments in a dynamic sport setting where the objective is known. Rather, it expands to become instantaneous and skillful thrusts toward an uncertain conclusion. Instead of a “flowing inventiveness,” it becomes a kind of “flowing creativity.” Riding a bike becomes a mythical storyline where tales of suffering and elation, challenge and defeat, triumph and failure unfold as the ride emanates from the bike-rider unit. Riding for long distances is comparable to the projects of jazz musicians’ who vaguely know what the outcome of their work will be but do not know how the “storyline” of the music will be played out. Cycling, like jazz music, becomes the creation of a mythical score whose future storyline can only be created through the constant forward motion of the bike-rider.

When I ride over One-Mile Hill or down Wopsy, what storyline will I create? How is the music going to go? Will it be a day of suffering or one of “no-chain?” Will it be a day of “good legs” with a strong performance? Or will it be one of uneventful normalcy – simply a few more miles logged into the record books? These questions are left unanswered until I participate in the ritual of the ride and live the myth as it unfolds before me. I cannot answer these questions until I compose the music of each ride as I ride it.

This deeper sense of how riding a bike can move beyond the realm of “technical activity” would most likely not be popular within the peloton. The peloton, largely interested in getting from Point A to Point B as quickly and efficiently as possible, shows little interest in pursuing riding a bike as a mythical activity or as improvisational conduct. These racers rarely look past their deliberate efforts to accomplish their pre-

determined goals. The training goals of target heart rates and watts or the competitive goals of winning *Le Tour* are of primary importance.

While the improvisational behavior that occurs through the spontaneous and instantaneous decisions of the professional (as in the Leipheimer example) remains unplanned, these decisions are typically not thrusts in an indeterminate direction. Rather, they are more calculated in nature with the motive of reducing the amount of risk associated with the improvised decisions – risk that could ultimately be detrimental to the fixed project of getting to Point B quickly. Simply, those in the peloton would appear to be more comfortable with the description of riding a bike as improvisational inventiveness – only marginally similar to those benchmarks found in jazz music and modern dance. They desire determined endings and clear, practical outcomes not the suspension of that outcome to catalyze the creation of a mythic storyline. The only storyline they are usually interested in is the one that ends happily atop the victory podium.

It would appear that this assertion opens a door for my conclusions to spill over into ethical dimensions. The non-competitive, middle of the pack, improvisational rider may have greater access to the intrinsic rewards of the ride than the cyclist. The rider's perspective of balancing the need for the bike with the other demands of family, work, and school may also allow for the flourishing of internal goods in other aspects of their lives. These intrinsic rewards may not be as important or available to those single-minded, focused competitors in the peloton. Consequently, the competitive cyclist's decision to pursue the *maillot jaune* may not only limit their ability to experience

improvisational behavior, but may also limit the possibility of living an ethically sound and intrinsically rewarding “good life.”

Yet as I stated before, I am not a cyclist. For podiums and pacelines, I have no appetite. I am not a cyclist because my rides do not necessitate going faster than someone else from Point A to Point B. I am not interested in limiting the spontaneous and instantaneous decisions of my rides for the defined purpose of winning races. I do not want the cold, repetition of riding between Point A and Point B in a planned, albeit intuitive and inventive, fashion each time.

In fact, I want my rides to be more discoveries, more creation of experiences I have not yet experienced, and more mythical storylines of inexhaustible significance that transcend the common concerns of my day. I want to write a different storyline and play a different song each day and each mile. I want to discover each storyline through the seat of my pants, the rhythmic pumping of my legs, and the spinning of my two aligned wheels over the pave. I want to take risks, to try different routes, gears, and cadences to see what new pathways are made available to me and what new music I can create from these invitations. I want to intuit my way through my constantly changing environment, thrusting into the paradox of knowing about Point B but only indistinctly knowing what musical score will be created on the way to that destination.

French cyclist Paul Fournel, purveyor of cycling observations, once wrote, “Hell is the rhythm of others.”⁹ Following the direction of other cyclists, for whatever reason, detracts from my ability to create something that no one has ever seen before. It poisons my ability to compose my own music and tell my own story. I cannot be carried away by it. Yet if I persistently seek to advance my skill level, if I courageously accept the risk

and responsibility for my actions along the road, and if I connect to my machine to confront my constantly changing environment as a bike-rider unit, the improvisational behavior I experience from the saddle will be an impression of my own rhythm. My ritual rides become my own unique mythic creations and discoveries.

Similar to Sudnow at the piano, I do not wish to find myself on the bike playing another's melody. Rather, I desire to float upon two spinning wheels simply "melodying."¹⁰

Coda: Speculations

My analogies between cycling, jazz music, and modern dance raise an interesting question: Is cycling art? I would answer that it is not. The primary project of getting from Point A to Point B remains intact whether the rider's perspective is one of technical invention, improvisational inventiveness, or flowing mythic creativity. I am still confined and guided by the rules and traditions of the cycling practice – not those of jazz music or modern dance. I do not get on my bike (nor do those of the peloton) and go for a ride with the intention of writing a mythic story, let alone creating a work of art. My bike rides address my personal questions of physical ability, endurance, persistence, and fortitude. They do not consistently answer any aesthetic questions that I may have.

However, it can be said that riding a bike is a physical activity that incorporates some of the artistic qualities of the modern dance and jazz music practices. When my rides rise to the level of myth, they become very much like art. This raises a further question: Is cycling a better physical activity than other sports for experiencing improvisational conduct? I would answer both "yes" and "no" to this question.

As shown in this analysis, cycling can be experienced as only loosely analogous to the improvisational projects of modern dancers and jazz pianists. But, it can also be more clearly analogous to the creation of works of art if the cycling project takes on mythical qualities. However, cycling remains a fairly rigid activity that does not allow for complete freedom of motion. Intuitively, it would seem that activities that allow for greater freedom in movement and greater interaction among multiple participants would be more conducive to episodes of improvisation than an activity that requires the performer to constantly serve as the engine to a machine. Would not traditional team sports, such as American football, baseball, basketball, or ice hockey, provide more fertile ground for improvisation?

I would agree that team sports allow for more freedom of individual movement. In addition, I would agree that team sports allow for more interaction between participants that, in turn, would create an environment more conducive to spontaneous responses. The defensive back in football reacts spontaneously and intuitively to the unpredictable actions of the wide receiver. The offensive player in basketball reacts to the opportune opening in the defense and drives to the basket. The spur-of-the-moment decisions found in these games would appear to be somewhat improvisational in nature – that is, unplanned, intuited, and logical. Further, these types of multi-team, multi-player interactions give the impression of unrepeatably game storylines. The complexities of five-on-five or eleven-on-eleven human interactions would be nearly impossible to duplicate. No two games could ever be played in exactly the same way.

However, *competitive* long-distance endurance cycling is a team sport. In fact, Lance Armstrong could not have won seven Tour de Frances in a row without the help

from his team. Teams work together as units and strategize against other teams in the peloton. Teams react to each other on the fly. One team attacks and the other responds. Riders launch off the front of the peloton and others chase them down.

Additionally, it is commonplace for opposing teams and team members to actually *cooperate* with each other within the context of the race. Riders from one team will pull for other competing riders at certain points with the understanding that the favor will be returned somewhere down the road. Working together in this fashion, smaller, hodge-podge groups of riders can move faster when breaking away from the peloton or chasing down an attack. The additional intricacies of helping another team gain advantage is not something found in American football, baseball, basketball, or ice hockey.

This often over-looked team component of competitive cycling appears to place this sport on the same playing field as the four traditional team sports identified. Clearly, the team dynamic in sport aids in the possible creation of improvisational episodes. However, this does not seem to be a significant marker that guarantees an activity's potential to create such behavior.

The more potent similarity between cycling and the practices of modern dance and jazz music – the notion of constant forward motion – seems to be a better indicator of improvisational potential. Like playing jazz piano or creating illusion in modern dance, cycling does not normally include pauses, breaks, or designed stoppages in the middle of the performance. Riding a bike is a continuous motion that allows for continuous spontaneity in decision-making just like jazz piano or improvised dance. Is the same characteristic found as prominently in traditional team sports?

It does not seem that traditional team sports exhibit this continuous motion to the same degree that cycling does. American football and baseball divides play into short segments between snaps and downs, pitches and outs. These divisions seem to be quite dissimilar from the continuous motion characteristic of improvisation. The games of basketball and ice hockey allow for less stopping but can still be very herky-jerky in nature depending on the skill of the players and the degree of officiating. Simply, team sports such as those identified would appear to provide for short, brief episodes of what has been described as improvisational behavior. However, team sports do not give the impression of being as conducive to the “long, full sentences” of improvisation that Sudnow found himself performing at the piano. Cycling would be. Obviously, this is only speculation and a more thorough interrogation of these traditional sports would be needed to solidify such a conclusion.

Perhaps it is the continuous demand to maintain the repetitive motion of pedaling that makes cycling more conducive to improvisational behavior. Perhaps it is the riders’ reliance on the bicycle as their contact point to the ground – as a surrogate pair of legs joining them to the earth. Perhaps it is the sensations of floating that riding a bike creates. Or perhaps it is the physiological demands of endurance, the stripping away of strength, the embattlement of fatigue, and the humbling of one’s corporeal ability against long-distance activities that force one to look inward to triage through the constant onslaught of physical challenge.

In fact, the arduous and often grueling nature of the cycling project may point to the primary reason for cycling and other endurance sports’ promotion of mythical stories. It is these long-distance and endurance activities that generate suffering, severe physical

challenge, and pain – phenomena that are often associated with unique transcendent experiences.

On her bicycle, Diana Ackerman often seeks to “become one with the bike” and “intuit gears in a Zenlike trance of muscle and power.”¹¹ Through this activity, Ackerman seeks to be in the presence of an “other” – a presence that can be a person or a god but can also be “a war, a mountain, or a bicycle” in whose presence one feels exaltation. According to Ackerman, our devotion and obsession to this “other” results in a “worshipping of life, a full force of energy, surprise, growth, mystery, creativity and power.” “We discover how life expresses itself in (the other’s) words and in (the other’s) ways,” Ackerman continues. “When we hold hands with what we worship, we touch and explore the sacred.”¹² Perhaps the suffering and arduousness experienced while riding a bike allow riders to delve deeper into life to experience a mythic sacredness less attainable from the pedestrian perspective.

Other endurance athletes have found that arduous athletic experiences develop pure expressions of the self reaching beyond the simple technical performance of the skill. Craig Lambert, a competitive rower, noted that “in the heat of a race . . . oarsmen do not aim to capture any ideal form of technique. Rather, they are in a state of abandon, most vehemently expressing themselves.” Lambert further characterizes strenuous endurance activities, such as long-distance endurance cycling, as “disciplined expressions of the self.”¹³ Perhaps overcoming the demanding qualities of endurance activities reveals pure expressions of the self as well as personal storylines undiscoverable without such strain.

The mythic storylines created while participating in endurance sports may also lead to spiritual enlightenment of the highest order. The Marathon Monks of Mount Hiei participate in perhaps the most strenuous and grueling human endurance practice on record. One thousand days of marathon running are required over a seven year period. For the first three years, the monks run one marathon (30 km) each day for one hundred days in a row. The monks run two of these one hundred day long segments in year four and again in year five. In the sixth year, the monks run double marathons (60 km) each day for one hundred consecutive days. In the final seventh year, the monks run triple marathons (about 84 km) each day for one hundred days followed by one hundred days of single marathons.¹⁴

At the end of this journey, these “Saintly Masters of a Severe Practice” run around forty thousand kilometers. More importantly, they are “awakened to the Supreme” and acclaimed a “Buddhist saint of the highest order.”¹⁵ One monk describes his change in attitude upon completion of his spiritual quest as “gratitude for the teaching of the enlightened ones, gratitude for the wonders of nature, gratitude for the charity of human beings [and] gratitude for the opportunity to practice.”¹⁶ Participation in this ritual activity “brought out the best in each monk, pushing to the surface the wonderful Buddha-nature we all possess deep within but rarely manifest.”¹⁷

These three examples point to a connection between long-distance endurance activities and deep, transcendent, mythic storylines. Perhaps it is the arduousness, the suffering, the highly uncomfortable nature, and the long bouts of mental discipline needed to accomplish these activities that set them apart from traditional team sports whose literature is largely void of such transcendent experiences. It appears that there is

at least some evidence that points to the notion that long-distance endurance cycling may be more conducive to the creation of mythic storylines than other non-endurance activities.

Riding a bike, that ubiquitous activity that we often take for granted, is an untapped activity for the study of human behavior. The paradigm of improvisational conduct could possibly be the window through which the study of cycling and other physical activities could flourish in a variety of yet un-traveled directions.

Notes

Chapter One: Introduction

- ¹ This is his pre-cancer perspective. Lance Armstrong with Sally Jenkins, *It's Not About the Bike: My Journey Back to Life* (New York: Berkley Books, 2000/2001), 144.
- ² Tim Krabbé, *The Rider* (New York: Bloomsbury, 1978), 60, 65.
- ³ *Ibid.*, 1.
- ⁴ Other than perhaps some psychological perceptions, aerodynamics is not the primary reason for this ritual. Armstrong, *It's Not About the Bike*, 2.
- ⁵ Paul Fournel, *Need for the Bike* (Lincoln: University of Nebraska Press, 2001), 52.
- ⁶ Lance Armstrong with Sally Jenkins, *Every Second Counts* (New York: Broadway Books, 2003), 7.
- ⁷ *Ibid.*
- ⁸ Modified from "I have abandoned the non-running world" quoted in Hal Higdon, "Is running a religious experience?," in *Sport and Religion*, ed. Shirl Hoffman (Champaign, Illinois: Human Kinetics, 1992), 78.
- ⁹ "The Buyer's Guide," *Bicycling Magazine*. April 2005, p. 65.
- ¹⁰ I immediately upgraded to clipless pedals and my wife found me a new seat on EBay later that year. Other than that and the replacement of worn-out tires, my bike is whatever came with it at the factory.
- ¹¹ Quoted in William James, *The Varieties of Religious Experience* (Centenary Edition) (New York: Routledge, 1902/2002), 262.
- ¹² Fournel, *Need for the Bike*, 95.
- ¹³ David Herlihy, *Bicycle: The History* (New Haven: Yale University Press, 2004), 2.
- ¹⁴ "Translator's Introduction" in Fournel, *Need for the Bike*, vii.
- ¹⁵ Mark Twain, "Taming the Bicycle," in *The Complete Works of Mark Twain: What is Man?* (New York: Harper, 1917), 287.
- ¹⁶ *Ibid.*, 296.
- ¹⁷ Frances Willard, *How I Learned to Ride the Bicycle: Reflections of an Influential 19th Century Woman* (Sunnyvale, California: Fair Oaks Publishing, 1895/1991), 76.
- ¹⁸ *Ibid.*, 49.
- ¹⁹ Fournel, *Need for the Bike*, 26.
- ²⁰ Bill Strickland, ed. *The Quotable Cyclist: Great Moments of Bicycling Wisdom, Inspiration and Humor* (New York: Breakaway Books, 1997), 172-173.
- ²¹ Twain, "Taming the Bicycle," 285-286.
- ²² *Ibid.*
- ²³ Willard, *How I Learned to Ride the Bicycle*, 49-50.
- ²⁴ *Ibid.*, 22.
- ²⁵ Bruce Benson, *The Improvisation of Musical Dialogue: A Phenomenology of Music* (Cambridge: Cambridge University Press, 2003), x.
- ²⁶ David Sudnow, *Ways of the Hand: The Organization of Improvised Conduct* (Cambridge, Mass.: Harvard University Press, 1978), 25.
- ²⁷ Maxine Sheets-Johnstone, *The Phenomenology of Dance* (London: Dance Books LTD, 1966/1979), 11.
- ²⁸ Andee Scott, "Dialoguing Dance: A Personal Narrative of Discovery" (M.F.A. thesis, Texas Woman's University, 2001), 3.
- ²⁹ *Ibid.*, 4.
- ³⁰ Quoted in Mark Wheeler, "Nature, Improvisation, and Organic Process in Dance Education: Isadora Redux," *Journal of Dance Education* 3 4 (2003): 132.
- ³¹ Sheets-Johnstone, *The Phenomenology of Dance*, 93.
- ³² Benson, *The Improvisation of Musical Dialogue*, 20.
- ³³ Lee B. Brown, "'Feeling My Way': Jazz Improvisation and Its Vicissitudes – A Plea for Imperfection," *The Journal of Aesthetics and Art Criticism* 58 2 (Spring 2000): 114.
- ³⁴ "Translator's Introduction" in Fournel, *Need for the Bike*, vii.
- ³⁵ Sheets-Johnstone, *The Phenomenology of Dance*, 133.
- ³⁶ Scott, "Dialoguing Dance," 2.
- ³⁷ Brown, "'Feeling My Way'," 115.

- ³⁸ Sudnow, *Ways of the Hand*, 26.
- ³⁹ Vijay Iyer, "Improvisation, Temporality and Embodied Experience," *Journal of Consciousness Studies* 11 3-4 (2004): 163.
- ⁴⁰ Benson, *The Improvisation of Musical Dialogue*, 142.
- ⁴¹ Quoted in Strickland, *The Quotable Cyclist*, 177.
- ⁴² Benson, *The Improvisation of Musical Dialogue*, 142.
- ⁴³ *Ibid.*, 142-143.
- ⁴⁴ *Ibid.*, 141.
- ⁴⁵ Sudnow, *Ways of the Hand*.
- ⁴⁶ *Ibid.*, xiii.
- ⁴⁷ *Ibid.*
- ⁴⁸ *Ibid.*, xiv.
- ⁴⁹ *Ibid.*, xiii.
- ⁵⁰ *Ibid.*, xiv.

Chapter Two: Improvisation in the Jazz Music and Modern Dance Literature

- ¹ Michael Polanyi and Harry Prosch, *Meaning* (Chicago: University of Chicago Press, 1975).
- ² *Ibid.*, x.
- ³ *Ibid.*, 15.
- ⁴ *Ibid.*, 28-29.
- ⁵ *Ibid.*, 38.
- ⁶ *Ibid.*, 34.
- ⁷ *Ibid.*, 28-37.
- ⁸ *Ibid.*, 41.
- ⁹ Strickland, *The Quotable Cyclist*, 172-173.
- ¹⁰ Polanyi, *Meaning*, 38.
- ¹¹ *Ibid.*, 40.
- ¹² *Ibid.*, 43.
- ¹³ *Ibid.*, 42.
- ¹⁴ *Ibid.*, 57, 60, 96-97.
- ¹⁵ *Ibid.*, 96.
- ¹⁶ *Ibid.*, 60.
- ¹⁷ *Ibid.*, 96.
- ¹⁸ *Ibid.*
- ¹⁹ Sudnow, *Ways of the Hand*, xiii.
- ²⁰ *Ibid.*
- ²¹ *Ibid.*, 10.
- ²² *Ibid.*, 15.
- ²³ *Ibid.*, 26.
- ²⁴ *Ibid.*, 28.
- ²⁵ *Ibid.*, 30.
- ²⁶ *Ibid.*, 36.
- ²⁷ *Ibid.*, 41.
- ²⁸ *Ibid.*, 45.
- ²⁹ *Ibid.*, 65.
- ³⁰ *Ibid.*, 68.
- ³¹ *Ibid.*, 83.
- ³² *Ibid.*, 84.
- ³³ *Ibid.*, 143.
- ³⁴ *Ibid.*, 146.
- ³⁵ *Ibid.*
- ³⁶ *Ibid.*, 85.
- ³⁷ *Ibid.*, 143.

- ³⁸ Benson, *The Improvisation of Musical Dialogue*, x.
³⁹ Ibid., 25.
⁴⁰ Ibid., 24.
⁴¹ Ibid., 32.
⁴² Ibid., 136.
⁴³ Ibid.
⁴⁴ Ibid.
⁴⁵ Ibid., 45-48.
⁴⁶ Ibid., 141.
⁴⁷ Ibid., 133.
⁴⁸ Ibid., 141.
⁴⁹ Ibid., x.
⁵⁰ Ibid., 142.
⁵¹ Ibid., 137-140.
⁵² Ibid., 139-141.
⁵³ Ibid., 147.
⁵⁴ Stephen Nachmanovitch, *Free Play: Improvisation in Life and Art* (Los Angeles: Jeremy P. Tarcher, Inc., 1990), 5.
⁵⁵ Ibid., 10.
⁵⁶ Ibid.
⁵⁷ Ibid., 12.
⁵⁸ Ibid.
⁵⁹ Ibid., 17.
⁶⁰ Ibid., 18.
⁶¹ Ibid., 21.
⁶² Ibid.
⁶³ Ibid., 23.
⁶⁴ Ibid., 26.
⁶⁵ Ibid., 73.
⁶⁶ Ibid., 48-49.
⁶⁷ Ibid., 73.
⁶⁸ Ibid., 149.
⁶⁹ Ibid., 151.
⁷⁰ Ibid.
⁷¹ Ibid., 191.
⁷² Ibid., 30, 51.
⁷³ Ibid., 185.
⁷⁴ Sheets-Johnstone, *The Phenomenology of Dance*, 129.
⁷⁵ Ibid., 8.
⁷⁶ Ibid., xi.
⁷⁷ Ibid., 12.
⁷⁸ Ibid., 88.
⁷⁹ Ibid., 95.
⁸⁰ Ibid., 93.
⁸¹ Ibid., 98.
⁸² Ibid.
⁸³ Ibid., 133.
⁸⁴ Ibid., 136.
⁸⁵ Ibid., 130.
⁸⁶ Ibid., 117.
⁸⁷ Ibid., 93.
⁸⁸ Scott, "Dialoguing Dance," v.
⁸⁹ Ibid., 1.
⁹⁰ Ibid., 2.
⁹¹ Ibid., 3.

- ⁹² Ibid., 4.
⁹³ Ibid., 5-6.
⁹⁴ Ibid., 6.
⁹⁵ Ibid., 7-8.
⁹⁶ Ibid., 9.
⁹⁷ Ibid., 15.
⁹⁸ Daniel Nagrin, *Dance and the Specific Image: Improvisation* (Pittsburgh: University of Pittsburgh Press, 1994), ix-x.
⁹⁹ Ibid., x.
¹⁰⁰ Ibid., 157-176.
¹⁰¹ Ibid., 168.
¹⁰² Ibid., x.
¹⁰³ Ibid., 158.
¹⁰⁴ Ibid., ix.
¹⁰⁵ Ibid., 157-158.
¹⁰⁶ Ibid., 163.
¹⁰⁷ Ibid., 164.
¹⁰⁸ Ibid.

Chapter Three: Benchmarks Experienced Along the Pathway to Improvisational Conduct

- ¹ Curtis L. Carter, "Improvisation in Dance," *The Journal of Aesthetics and Art Criticism* 58 2 (Spring 2000): 181.
² David Schroeder, "Four Approaches to Jazz Improvisation Instruction," *Philosophy of Music Education Review* 10 1 (2002): 36.
³ Nachmanovitch, *Free Play*, 151.
⁴ Sheets-Johnstone, *The Phenomenology of Dance*, 14.
⁵ Sudnow, *Ways of the Hand*, 2.
⁶ Ibid., 26; Benson, *The Improvisation of Musical Dialogue*, 139; Scott, "Dialoguing Dance," 24.
⁷ Scott, "Dialoguing Dance," 2; Sheets-Johnstone, *The Phenomenology of Dance*, 133.
⁸ Judith Woodruff, "Improvisation for the Inhibited: Approaches for Teaching," *Journal of Physical Education, Recreation, and Dance* 56 1 (1985): 37.
⁹ Sudnow, *Ways of the Hand*, 17, 26; Benson, *The Improvisation of Musical Dialogue*, 45, 140; Scott, "Dialoguing Dance," 2.
¹⁰ R. Keith Sawyer, "Improvisation and the Creative Process: Dewey, Collingwood, and the Aesthetics of Spontaneity," *The Journal of Aesthetics and Art Criticism* 58 2 (Spring 2000): 157.
¹¹ Sudnow, *Ways of the Hand*, 3, 10, 12, 51.
¹² Sheets-Johnstone, *The Phenomenology of Dance*, 95; Woodruff, "Improvisation for the Inhibited," 37.
¹³ Brown, "'Feeling My Way'," 115-116.
¹⁴ Sheets-Johnstone, *The Phenomenology of Dance*, 98; Scott, "Dialoguing Dance," 3; Nachmanovitch, *Free Play*, 10.
¹⁵ Nachmanovitch, *Free Play*, 26.
¹⁶ Benson, *The Improvisation of Musical Dialogue*, 42.
¹⁷ Sheets-Johnstone, *The Phenomenology of Dance*, 93.
¹⁸ Quoted in Wheeler, "Nature, Improvisation, and Organic Process in Dance Education," 132.
¹⁹ Nagrin, *Dance and the Specific Image*, 158.
²⁰ Benson, *The Improvisation of Musical Dialogue*, 42.
²¹ Sudnow, *Ways of the Hand*, 19-20, 23, 26.
²² Scott, "Dialoguing Dance," 3-5.
²³ Sudnow, *Ways of the Hand*, 23.
²⁴ Brown, "'Feeling My Way'," 116.
²⁵ Nagrin, *Dance and the Specific Image*, x.
²⁶ Ibid., 158.
²⁷ Polanyi, *Meaning*, 188.

- ²⁸ Nachmanovitch, *Free Play*, 160.
- ²⁹ Sudnow, *Ways of the Hand*, 37.
- ³⁰ Nachmanovitch, *Free Play*, 151.
- ³¹ *Ibid.*, 12.
- ³² Schroeder, “Four Approaches to Jazz Improvisation Instruction,” 36.
- ³³ Benson, *The Improvisation of Musical Dialogue*, 142-143.
- ³⁴ *Ibid.*, 5.
- ³⁵ Brown, “‘Feeling My Way’,” 119.
- ³⁶ Benson, *The Improvisation of Musical Dialogue*, 134; Nagrin, *Dance and the Specific Image*, 164.
- ³⁷ Nagrin, *Dance and the Specific Image*, 163.
- ³⁸ Brown, “‘Feeling My Way’,” 114.
- ³⁹ Benson, *The Improvisation of Musical Dialogue*, 134.
- ⁴⁰ Quoted in Nachmanovitch, *Free Play*, 88.
- ⁴¹ Nachmanovitch, *Free Play*, 91.
- ⁴² Nagrin, *Dance and the Specific Image*, 161.
- ⁴³ Sudnow, *Ways of the Hand*, 55.
- ⁴⁴ Nachmanovitch, *Free Play*, 21.
- ⁴⁵ Sudnow, *Ways of the Hand*, 34.
- ⁴⁶ Scott, “Dialoguing Dance,” 7.
- ⁴⁷ Nagrin, *Dance and the Specific Image*, 158.
- ⁴⁸ Sudnow, *Ways of the Hand*, 57, 59, 136.
- ⁴⁹ Scott, “Dialoguing Dance,” 6.
- ⁵⁰ Brown, “‘Feeling My Way’,” 120.
- ⁵¹ Benson, *The Improvisation of Musical Dialogue*, 139.
- ⁵² Sudnow, *Ways of the Hand*, 77, 83, 87, 95-96, 118, 119-127, 128-134.
- ⁵³ Polanyi, *Meaning*, 37.
- ⁵⁴ Benson, *The Improvisation of Musical Dialogue*, 141.
- ⁵⁵ Brown, “‘Feeling My Way’,” 114.
- ⁵⁶ Sheets-Johnstone, *The Phenomenology of Dance*, 14, 18, 140.
- ⁵⁷ Benson, *The Improvisation of Musical Dialogue*, 51, 149.
- ⁵⁸ Sudnow, *Ways of the Hand*, 102, 106.
- ⁵⁹ Nagrin, *Dance and the Specific Image*, 164.
- ⁶⁰ Carter, “Improvisation in Dance,” 189.
- ⁶¹ Nagrin, *Dance and the Specific Image*, 164.
- ⁶² Linda Chaplin, “Teaching Dance Improvisation Creatively,” *Journal of Physical Education and Recreation* 47 4 (1976): 42.
- ⁶³ Benson, *The Improvisation of Musical Dialogue*, 142-143.
- ⁶⁴ Sudnow, *Ways of the Hand*, 136.
- ⁶⁵ Nagrin, *Dance and the Specific Image*, 159.
- ⁶⁶ Chaplin, “Teaching Dance Improvisation Creatively,” 43.
- ⁶⁷ Benson, *The Improvisation of Musical Dialogue*, 141.
- ⁶⁸ Nachmanovitch, *Free Play*, 18, 48-49.
- ⁶⁹ Nagrin, *Dance and the Specific Image*, x.
- ⁷⁰ Sudnow, *Ways of the Hand*, 83.

Chapter Four: Writings about Riding a Bike

¹ Lallement was the first to patent the basic bicycle design in the United States in April 1866. There is some discussion of who actually “invented” the concept of the bicycle, but Lallement is generally credited with its invention due to this patent. See Herlihy, *Bicycle*, 86-87 and Strickland, *The Quotable Cyclist*, 292-293.

² The boneshaker design looked similar to today’s bicycle design. Both wheels were of similar size and the seat was positioned above and in between them. However, different from the modern bike design, the pedals were attached directly to the front wheel’s axel. See Herlihy, *Bicycle*, 72-155.

- ³ Charles E. Pratt, "Pierre Lallement and His Bicycle," *Outing* 3 1 (1883): 4-13.
- ⁴ Twain rode a fifty-inch high wheel bike (the front wheel was fifty-inches in diameter while the trailing wheel was only about eighteen inches in diameter.) The seat of this design was located almost directly over the front wheel and the pedals were still connected directly to this wheel's axle. The change in design allowed for superior speed during races. See Herlihy, *Bicycle*, 156-221. Twain, "Taming the Bicycle," 285-296.
- ⁵ Twain, "Taming the Bicycle," 287.
- ⁶ *Ibid.*, 290.
- ⁷ *Ibid.*, 288.
- ⁸ *Ibid.*, 288-289.
- ⁹ *Ibid.*, 292.
- ¹⁰ *Ibid.*, 294, 296.
- ¹¹ Paul Pastnot, "My First Wheel," *Outing* 4 2 (1884): 138.
- ¹² *Ibid.*
- ¹³ *Ibid.*
- ¹⁴ *Ibid.*, 139.
- ¹⁵ *Ibid.*, 138.
- ¹⁶ Chris Wheeler, "My Initiation to the Bicycle: A Tale of the Tavern Talkers," *Outing* 10 4 (1887): 370.
- ¹⁷ *Ibid.*, 373.
- ¹⁸ *Ibid.*
- ¹⁹ The safety bicycle design remains as the universal bicycle design. It includes two equally-sized wheels, a seat partially over the rear wheel and a drive train connecting an independent pedal crank to the rear wheel axle. See Herlihy, *Bicycle*, 222-305; Grace E. Denison, "How We Ride Our Wheels," *Outing* 19 1 (1891).
- ²⁰ Denison, "How We Ride Our Wheels," 52.
- ²¹ *Ibid.*, 53.
- ²² *Ibid.*, 54.
- ²³ Jean Porter Rudd, "My Wheel and I," *Outing* 26 2 (1895): 126.
- ²⁴ *Ibid.*, 127.
- ²⁵ *Ibid.*, 126.
- ²⁶ Ernest Ingersoll, "My First Bicycle Tour: The Adventures of a Learner," *Outing* 26 3 (1895): 206.
- ²⁷ *Ibid.*
- ²⁸ *Ibid.*
- ²⁹ Initially, three men held the bike in place while she got in the saddle. Then two women held the bike in balance. Then one person walked beside her as she rode. Finally, she set off on her own but continued to require someone to stand-by if needed. Willard, *How I Learned to Ride the Bicycle*, 27.
- ³⁰ *Ibid.*, 28.
- ³¹ *Ibid.*, 30.
- ³² *Ibid.*, 50.
- ³³ *Ibid.*, 52.
- ³⁴ *Ibid.*, 57.
- ³⁵ The boneshaker's wheels were of similar size but the pedals were connected directly to the front wheel. High wheel bikes had a front wheel considerably larger than that back wheel yet the pedal remained attached directly to this larger front wheel. The safety bikes, similar to what is available today, have two same-sized tires and a chain-drive. See Herlihy, *Bicycle*, 225-305.
- ³⁶ Denise M. de la Rosa and Michael J. Kolin, *Understanding, Maintaining, and Riding the Ten-Speed Bicycle* (Emmaus, Pennsylvania: Rodale Press, 1979).
- ³⁷ *Ibid.*, xiii.
- ³⁸ *Ibid.*, xiv, 266.
- ³⁹ *Ibid.*, 270.
- ⁴⁰ See Ed Pavelka, (ed). *Bicycling Magazine's Complete Book of Road Cycling Skills* (Emmaus, Pennsylvania: Rodale Press, 1998); Lance Armstrong and Chris Carmichael, *The Lance Armstrong Performance Program* (Emmaus, Pennsylvania: Rodale Press, 2000).
- ⁴¹ Allen St. John, *Bicycling for Dummies* (Foster City, California: IDG Books Worldwide, Inc., 1999).

⁴² He first summarizes the pros and cons of using training wheels in the developmental process. Training wheels help children ride unsupervised to “explore balance, steering, and braking on their own,” the author asserts, but they aren’t outriggers and “after a brief four-wheels-on-the-ground origination period, they should be adjusted high enough so that they’ll keep the child from falling over while at the same time encouraging the child to find the bike’s balance point.” The use of training wheels, as we will see, is one of the traditional methods of teaching a child how to ride a bike that will be largely contested by the new-school bike-learning philosophies. Ibid., 195.

⁴³ Ibid., 196-197.

⁴⁴ Ibid., 198.

⁴⁵ Howard Roth, *Riding Made Easy: How to Teach Your Child to Ride a Bike* (2004). Available at www.ridingmadeeasy.com.

⁴⁶ Ibid., 1.

⁴⁷ Ibid., 21.

⁴⁸ Ibid.

⁴⁹ Ibid., 15.

⁵⁰ Ibid., 26.

⁵¹ Ibid., 30-31.

⁵² Matthew S. Biskup, *Learn to Ride a Bike in Less Than Two Hours and Nobody Gets Hurt!: The Definitive Guide for Teaching Yourself or Others to Ride a Bicycle* (2002). Available at <http://learntorideabike.com>.

⁵³ Ibid., 9.

⁵⁴ Ibid., 9-10.

⁵⁵ Ibid., 15.

⁵⁶ Movie critic Ken Turan quoted in Strickland, *The Quotable Cyclist*, 174-175.

⁵⁷ Author George Bernard Shaw from his work *Back to Methuselah* quoted in Strickland, *The Quotable Cyclist*, 177.

⁵⁸ Hans Rey quoted in Strickland, *The Quotable Cyclist*, 161.

⁵⁹ Ron Kiefel quoted in Strickland, *The Quotable Cyclist*, 161.

⁶⁰ Juli Furtado quoted in Strickland, *The Quotable Cyclist*, 169.

⁶¹ Garth Battista, ed. *Bicycle Love: Stories of Passion, Joy, and Sweat* (Halcottsville, NY: Breakaway Books, 2004), 7.

⁶² Ibid.

⁶³ Jeffrey Hammond, “Riding for Nefertiti,” in Battista, *Bicycle Love*, 101.

⁶⁴ Roger Deutsch, “It’s About Freedom,” in Battista, *Bicycle Love*, 112.

⁶⁵ Fournel, *Need for the Bike*, 122.

⁶⁶ Ibid., 26-27.

⁶⁷ Ibid., 63.

⁶⁸ Ibid., 30-31.

⁶⁹ Ibid., 132, 105-106, 68-69.

⁷⁰ Ibid., 68-69.

⁷¹ Paul Howard, *Riding High: Shadow Cycling the Tour de France* (London: Mainstream Publishing, 2004).

⁷² Perhaps Howard did not know this at the time, but shadow riding *Le Tour* was not a unique idea. Many people, solo or in groups using various amounts of support, attempt and achieve this feat each year although it seems to be more common for cyclists to ride only individual stages – not the entire staged event and not precisely on its scheduled dates. (It should be noted that Howard’s times were far from competitive. His times were often two or three times that of the stage winners.) Howard did encounter some riders attempting his identical feat along his three-week ride, but, at least at this present time and with some disappointment, the other riders have not publish their diaries for the rest of us “mere mortals” to read. Ibid., 12.

⁷³ Ibid., 21.

⁷⁴ Ibid., 36.

⁷⁵ Ibid., 47.

⁷⁶ Ibid., 110.

⁷⁷ Ibid., 128.

- ⁷⁸ Diane Ackerman, *Deep Play* (New York: Vintage Books, 1999).
- ⁷⁹ *Ibid.*, 161.
- ⁸⁰ *Ibid.*, 160.
- ⁸¹ Mike Magnuson, *Heft on Wheels: A Field Guide to Doing a 180* (New York: Harmony Books, 2004), 90.
- ⁸² *Ibid.*, 95.
- ⁸³ Magnuson also provides two other examples of developing fitness, endurance, and efficiency in the saddle in the pages of *Bicycling* magazine. In "I've Never Felt Better in My Life," Magnuson describes his participation in his first 24-hour mountain bike race. See Mike Magnuson, "I've Never Felt Better In My Life," *Bicycling* XLV 7 (August 2004): 72-76. His other article of note, "Dear Mont Ventoux," describes his attempt at becoming a member of a club known as *La Confrérie des Cinglés du Ventoux* (the brotherhood of the nuts of Ventoux) or, if possible, the title of *Galérien du Ventoux* (slave of Ventoux). This challenge requires the cyclist to summit the French Mont Ventoux three times by three different routes for *Cinglés* status and one additional time by a fourth route for *Galérien* status. The latter goal combines 190 kilometers of riding with 5,992 meters of climbing in one day.⁸³ Needless to say, he does not succeed. Not many do. There are less than 1,200 *Cinglés* and 150 *Galériens*. See Mike Magnuson, "Dear Mont Ventoux," *Bicycling* XLVI 20 (November 2005): 62-68.
- ⁸⁴ Martin Criminal, "One if by Land, Two if by Sea, and Nine if You're Like Me....," in Battista, *Bicycle Love*, 177.
- ⁸⁵ Armstrong, *It's Not About the Bike*.
- ⁸⁶ Armstrong, *Every Second Counts*.
- ⁸⁷ Armstrong, *It's Not About the Bike*, 19-20.
- ⁸⁸ *Ibid.*, 62.
- ⁸⁹ *Ibid.*, 214.
- ⁹⁰ *Ibid.*, 244.
- ⁹¹ Armstrong, *Every Second Counts*, 210-211.
- ⁹² The United State Postal Service dissolved its sponsorship of this cycling team in 2005. Discovery Channel essentially became the title sponsor of the team immediately thereafter. Michael Barry, *Inside the Postal Bus* (Boulder, Colorado: VeloPress, 2005).
- ⁹³ *Ibid.*, 171.
- ⁹⁴ *Ibid.*, 244.
- ⁹⁵ Bruno Schull, *The Long Season* (Halcottsville, New York: Breakaway Books, 2002).
- ⁹⁶ *Ibid.*, 54-55.
- ⁹⁷ *Ibid.*, 9.
- ⁹⁸ Krabbé, *The Rider*.
- ⁹⁹ *Ibid.*, 125.
- ¹⁰⁰ *Ibid.*, 48.
- ¹⁰¹ *Ibid.*, 53.
- ¹⁰² Daniel Coyle, *Lance Armstrong's War: One Man's Battle Against Fate, Fame, Love, Death, Scandal, and a Few Other Rivals on the Road to the Tour de France* (New York: HarperCollins Publishers, 2005), 25.
- ¹⁰³ Barry, *Inside the Postal Bus*, 227.
- ¹⁰⁴ Coyle, *Lance Armstrong's War*, 25, 166.

Chapter Six: Improvisation in Learning to Ride a Bike

- ¹ Kip Mikler, "Leipheimer Takes Tour of California Prologue," *VeloNews* (on-line) (February 19, 2006). Available at <http://velonews.com/race/dom/articles/9515.0.html>.
- ² *Ibid.*
- ³ Polanyi, *Meaning*, 97.
- ⁴ *Ibid.*, 130.
- ⁵ *Ibid.*, 124.
- ⁶ *Ibid.*, 128.
- ⁷ *Ibid.*, 85.
- ⁸ *Ibid.*, 98.

⁹ Fournel, *Need for the Bike*, 112.

¹⁰ Sudnow, *Ways of the Hand*, 146.

¹¹ Ackerman, *Deep Play*, 160-161.

¹² *Ibid.*, 87.

¹³ Craig Lambert, *Mind Over Water: Lessons on Life from the Art of Rowing* (Boston: Houghton Mifflin, 1998), 171.

¹⁴ John Stevens, *The Marathon Monks of Mount Hiei* (Boston: Shambhala Publications, Inc., 1988), 71.

¹⁵ *Ibid.*, 126.

¹⁶ *Ibid.*, 94.

¹⁷ *Ibid.*, 133.

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International Association for the Philosophy of Sport, Annual Conference
"To Ride or Not to Ride: Cycling as a Jamesian 'Genuine Option.'" Palacky University, Olomouc, Czech Republic, September 2005.
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