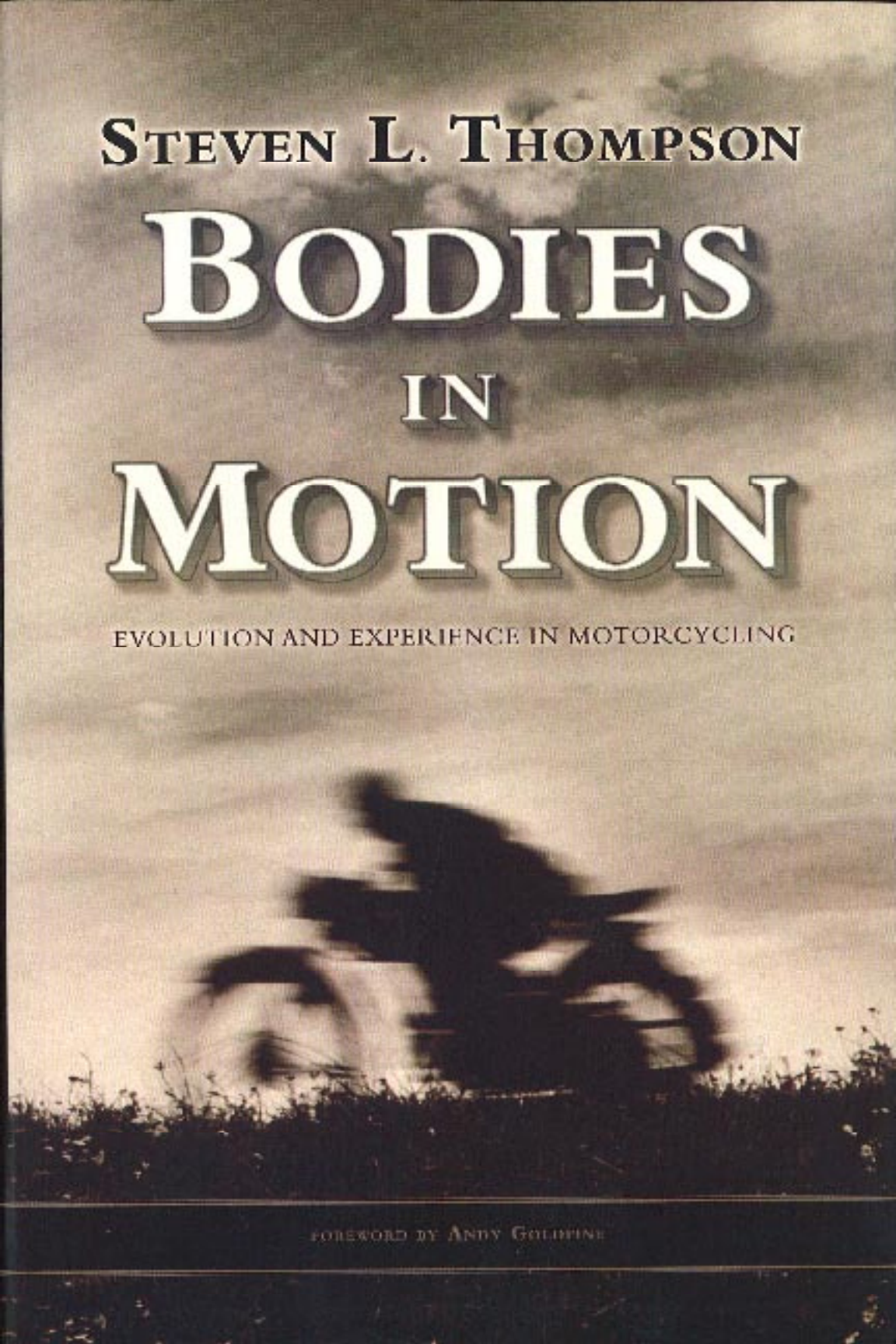
STEVEN L. THOMPSON

BODIES IN MOTION

EVOLUTION AND EXPERIENCE IN MOTORCYCLING



FOREWORD BY ANDY GOLDFINE

Why is riding a motorcycle so exciting and yet so relaxing—and why does this combination make so many riders feel so good?

Rather than ask "why," most motorcyclists and scooterists simply settle into the saddle, turn the key, grab the handlebars, and enjoy the experience.

Yet as Steven L. Thompson shows in *Bodies in Motion*, there are compelling reasons to ask "why." Writing in accessible language for rider and non-rider alike, the author helps to disentangle the psychobiological connections between motorcycle and rider from a complex mix of cultural elements as he explores what evolutionary science, psychology, human-factors research, and engineering research can tell us about why some people ride and others do not.

The reason to be concerned about this is more important than just what it might mean to a motorcyclist trying to explain to a non-rider why he or she chose to ride. Thompson's groundbreaking work suggests an innate affinity between the motorcycle and the rider that goes beyond pervasive cultural norms. From a scientific perspective, he connects motorcyclists to their bikes using the fundamentals of evolutionary biology and explores the intricate brain chemistry behind the sensations of riding. This new look at what the machines we ride or drive do to us—and not just for us—is vital to our continuing understanding of automobility and its influence on us.

Bodies in Motion by Steven L. Thompson

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STEVEN L. THOMPSON

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FOREWORD

In this book, my friend Steve Thompson examines some of the most nuanced aspects of the rider-machine relationship. His research and analytics break new ground, and also confirm things I've long sensed about what is inside the experience and appeal of motorcycle riding. This work helped me disentangle some aspects of our psychobiological relationship to the physical sensations of riding from the complex mix of cultural and social elements which surround motorcycling and scootering. I hope you will find it similarly useful, enlightening and enjoyable.

Steve and I came to our common interests about the underlying connections riders have with motorcycling's

sensory experiences via entirely separate routes. Before we met I'd just started a small business, the Aerostich company, to make protective textile coveralls to help people commute to work on motorcycles more safely and comfortably, while allowing riders to wear their regular clothing for convenience. And before Steve met me, he was working in literary writing, journalism, art, history and historical research. We were both experienced riding and racing motorcyclists (Steve as an international road-racer, and me at local amateur AMA Enduros). We each deeply incorporated riding into our different and distant lives.

Our paths began to converge while I was working on prototypes of the first Aerostich riding suit. I read an editorial titled "The Right Stuff For Summer" in *Cycle Guide* magazine. It was by someone named Steven L. Thompson, who'd suggested the need for an entirely new kind of riding gear that would be cooler, lighter and easier to wear than heavy leathers. Something that was designed specifically for the broiling, thunderstorm-prone summers common throughout most of America. This author even imagined the kind of person who might someday produce such a garment. It was exactly the garment I was making, and the person being described seemed to be me (!), so I promised myself that as soon as the first production Aerostich Roadcrafter suit was ready, I'd send it to him.

A year or so later, Steve had left *Cycle Guide* to become the East Coast editor of *Cycle World* magazine when he received that first suit to evaluate. He understood its intent immediately, but before he'd written a single word about it, he was on the telephone, explaining an unusual problem: "Can

you send me another suit?", he began. "I need another one right away." After a brief pause, he continued: "My friend Bob Sinclair took mine. He's the president of Saab, the car company, and he's a dedicated everyday commuting rider. He saw it in my office yesterday and he had to have it. Now he's borrowed it, and he won't return it. He said you should send him a bill…which is why I need another suit to test." By the time Steve finished fully explaining the situation, he'd made a new friend, and the Aero Design & Manufacturing Company Inc., had sold its first Roadcrafter suit.

Soon after that, Steve wrote about some of his early experiences with the Roadcrafter, and about a disturbing cultural bigotry he'd unexpectedly ridden straight into. He already knew that whenever riders wore functionally appropriate gear which did not meet the pre-conceived expectations of non-riding people, the non-riders were less than understanding. He described once entering a dark roadside tavern on a hot day in the 1960s, wearing race-spec leathers, and how everyone in the place suddenly went silent and stared. So, when wearing his Aerostich suit, he rode to a motorcycle parts store and the 'expert' working at the counter disparagingly asked him why he was wearing the slightly sci-fi looking Roadcrafter suit on such a warm, clear day, it struck him as more than simple ignorance, especially coming from within the moto-world. This was an entirely unanticipated expression of bias, ostracization and prejudice.

Steve's editorial column about those experiences was titled "Dressing Up." In it, he expressed a conviction that function, not culture, ought matter most in the wearing of protective rider's gear. So why wasn't this obvious to all riders?

Riding was simply too important for anything less, because riding's sensations and benefits so completely transcend the styles and cultures of the day. That courageous perspective is what separated Steve from most other riders, and from other motorcycle magazine editors. Near the end of the editorial he wrote, "I realized that I was going to be at war with some basic American values for a long, long time." As I read those words, I knew I'd found someone who was asking the same kinds of questions about motorcycling, society, and culture that I was.

The Aerostich Roadcrafter suit's design embodied my first answers to those important questions, and this book contains some of Steve's. The central assumption behind the Roadcrafter is that everyday back-and-forth-to-work 'A-to-B' motorcycling is a social good—an activity that benefits everyone, not just the rider. I believe this is so because even the most mundane riding experience changes the rider in psycho-biological ways which ultimately are beneficial to everyone. In other words, motorcycle and scooter riding is one activity that helps people become more able to do many non-riding kinds of things better than they otherwise could, and these better-performing people are then better able to help make better communities, which directly benefits everybody. The specific causal mechanisms involved probably lie in both the episodes of transcendence that riding experiences provide, and with the more objective risk management affirmations that result from all motorcycling activity.

Transcendence, as I use it here, is a state of awareness in which the passage of time seems to slow and one feels more connected to some kind of universal consciousness. It's

the sensation of being more in sync and merged into one's surroundings. In this state, one feels simultaneously very relaxed and very alert. This duality is not normally a part of our everyday lives, but it is such a satisfying feeling that many people seek the experience by practicing meditation, yoga, and similar kinds of activities. Motorcycle and scooter riding provides this same type of concurrent relaxed and alert engagement because the rider is unconsciously always busy, physically and mentally concentrating on guiding the machine, while simultaneously consciously experiencing the environment in ways which affect the overall nature of each ride. The result of such complex stimulation seems to be a type of transcendent experience which, at the conclusion of each ride, usually leaves the rider calmer, more focused and in a notably refreshed state.

Individuals who meditate regularly have recently been the subjects of controlled-study research using the latest brain-scanning technologies, and this testing has revealed how repeatedly achieving such a transcendent state helps the brain increase the skills involved in concentration and remembering, and provides one with a measurably stronger sense of well-being. These are cumulative and lasting physiological changes which seem to be the result of each kind of activity that produces episodes of transcendence, so this probably includes riding motorcycles and scooters. Unfortunately, it is not possible to do such brain-scanning while a test subject is riding, but as you'll see in *Bodies in Motion*, there are other ways to reach the objective of understanding how motorcycling and states of cognition interrelate.

Despite riding's many virtues and advantages, it is hard to justify, explain and rationalize motorcycling in the face of all counter-forces lined up against it. And this is specially so for utility and transportation riding. The mainstream population in most of the rich parts of the world doesn't buy transport-on-two-wheels, except for a tiny minority of stubborn, iconoclastic, skin-flinted, quixotic, romantic and idealistic types…to name them all. And although there is increasing interest in vehicles which offer reduced consumptive footprints and greater convenience and efficiency, encouraging the adoption of motorcycles and scooters is not being widely promoted. Instead, throughout most of the developed and congested parts of the world, people are eagerly awaiting the arrival of self-driving cars that will take them to their destinations automatically, while people in the still-developing world are just as eagerly looking forward to getting off their mopeds or bicycles and into cars. Neither group seems to appreciate that motorcycling is different from mere conveyances; that their inherent vulnerabilities and discomforts bring with them unequalled satisfaction and beneficial value when they are used for daily life, and not just recreation.

When automobiles are driven enthusiastically, or at higher speeds in adverse conditions, the experience of controlling the vehicle can sometimes be absorbing enough to produce episodic transcendence for the driver. But everyday driving rarely requires this supremely engaged level of concentration. Motorcycling is different. The old joke about the bacon-and-egg breakfast is that the chicken is "involved" but the pig is "committed." This fairly well describes the difference between the automobile driver and the motorcycle rider.

Motorcycles are inherently unstable and vulnerable to falling over, so the rider must actively and continuously commit to helping them function.

Similarly, many other kinesthetic and risk-management activities requiring participant "commitment" also seem to produce episodic transcendence experiences. The sports of skiing, skating, sailing, bicycling, skateboarding and surfing all provide many of the same psychobiological benefits as riding. Partly because of this, motorcycles in rich countries are usually both sold and understood as another of these leisure activities. But beyond that, riding offers a unique potential to provide the episodic-transcendence benefit as a built-in component of one's personal mobility activities. This holistic dualism is a little like how unprocessed foods which taste great are usually nutritionally very good for you. Here, within this healthy and synergistic combination of the intangible and the physical, exists an as-yet unverifiable, but potentially extremely important individual and societal benefit of motorcycling.

Unfortunately, and unlike most transcendence-providing "fun" activities, motorcycling brings with it the burden of enormous potential personal injury. No rider wants to be killed or injured, but it occasionally happens. This is a widely appreciated dread-risk fear, but as soon as a rider has learned how to control a motorcycle skillfully and safely, his/her calculus always changes. And when that happens, the efficiency and economy of even the simplest motorcycle or scooter is revelatory. A few days ago I made five different errand stops in two hours and always had a perfect place to park that was nearer each destination—and easer to get into and out of—than the spaces available for the cars. Everything was zip,

zip, zip.... And I am always bubbling happy to be getting so much stuff done so easily. It's like cheating! Afterward, when I reach 'point B', I always feel better and more renewed than I did before I left 'point A'. Always.

Because motorcycles and scooters have the potential to provide such a valuable personal-mobility option for many more individuals than the actual number of riders I observe, there clearly are some societal biases keeping the machines largely marginalized as recreational vehicles. The well-presented motorcycle accident and injury statistics are one powerful example of the influence of such a factor. In Vietnam today, about sixty-five percent of all motorized travel is via small,150cc-and-under motorcycles. Here in the United States, less than one percent of our travel is by motorcycle, and the motorcycles we use are much larger. These two numbers represent the global extremes. In every culture the acceptance of riding's risks and vulnerabilities is viewed differently, by both the rider and the non-rider. This book is about some of the important universals beneath these differences.

From ancient, isolated hunter-gatherer cultures to our current world's complex matrix of interlocked civilizations, the cooperatively achieved mitigation of shared risk is one of humanity's central achievements. Successful accomplishment of those objectives, at every level, produces increased trust and this provides the foundations for the development of all types of faiths, which in turn is what allows us to hope. And it is that magic element which encourages us to seek out transcendence-generating activities. Every day I choose to encounter the world as a motorcycle or scooter rider, with only the intermediation of my gloves and riding gear, looking

around nervously at all the other drivers, and the rain clouds in the sky, and the uncertain surfaces of the road ahead—and then still decide to continue making my own way though it all, to the best of my abilities, *that* is a great day. When we ride motorcycles, we decide to be idealists. We are deciding to celebrate, honor and assert the hopeful awareness within ourselves which creates our uniquely human center of humbleness, perspective, place-in-the-world and self-confidence.

Here in America, as elsewhere, those who are not personally interested in experiencing and accepting motorcycling's vulnerabilities and discomforts can provide all kinds of insults and ostracizations toward those who are. And here, it is easy to say riding is "too dangerous" because local personal-mobility experiences almost always involve automobiles, not motorcycles and scooters. In Vietnam, and throughout most of the developing world, this same concern may not nearly be as easily expressed, because the majority, or some large percentage, are on two wheels. Cooperatively mitigating shared risk is how many of our universal social behaviors evolved, so the outward appearance of violating or flaunting this part of the social construct is usually viewed as a problem. In the United States, it is rarely a simple or easy decision to be the singular motorcycle rider commuting to and from work, alone among thousands of cars.

Riding's strongest disincentives—discomfort, increased vulnerability and social estrangement—are all related. The socio-cultural search for the opposites of these three elements is what drives ever-expanding markets for all technologies, including everything from cosmetics and fashions, to cellular telephones and passive-safety systems in automobiles. The

lessening of risk and discomfort is almost always an integral part of the promise of successful manufactured artifacts, from safety razors to suspension bridges, and is inseparably connected to our evolved natures, our social behaviors, and with the goals of civilization itself.

In personal transportation, the continually improving convenience, reliability and safety of cars and the infrastructure they demand, represents a civilization-wide outsourcing of various risk management responsibilities from individual drivers to a broad variety of interconnected stakeholders. Our deepest impulses powerfully justify and support these kinds of responsibility transfers. To many individuals, and in many contexts, motorcycle riding is a repudiation of this norm because it involves the active assumption of risk management through the rider's individually acquired knowledge and skills. Car drivers ask themselves and riders, "Why?"

The less we know about anything, the more fearful of it we become. As automotive technologies continue to improve, ever-larger numbers of people become further insulated and isolated from experiencing the vulnerabilities and discomforts of automobility that were once commonplace, and were, to some extent, shared with motorcyclists. In improving automobiles to eliminate their vulnerabilities and discomforts, manufacturers inevitably also eliminated some—perhaps most—of the visceral and kinesthetic experiences which best help prepare individuals to counter some of the socially isolating and estranging affects of modern life. Motorcycle riding, by more directly and intimately reconnecting us with the surrounding indifferent world, and with each other, helps us better understand and face the always uncertain future.

And this is one way we become better able to support and contribute to the lives of others.

It should be self-evident that, regardless of motorcycling's many powerful individual and societal benefits, not everyone should ride. If anyone reading this book comes to the conclusion that either Steve or I feel that motorcycle riding is some kind of societal magic potion, or a transportation panacea, he or she has misunderstood what is being presented here. Riding is only for those who decide to give it a try. My sister Ellen and her husband, Jeff, began to ride in their mid-fifties, as did my cousin Joel. During her learning process, Ellen emailed me about motorcycling's risks as she saw them, writing that, "It rained last night and the roads are a bit damp still. I keep thinking about cousin Joel's recent spill (and sorry, but a broken collarbone/clavicle are not what I consider minor, but that's just me!), and the story in the beginning of your catalog by Rand Rasmussen—one minute you're up, the next second, without warning, you're down. EEEK! I am very cautious, to the point of excess, so far, and hope to become more comfortable with time and miles. I have been meaning to ask you if you ever fell, because I don't remember visiting you in the hospital or anything, or even you mentioning it."

To this I replied, "Rand Rasmussen's story was the truth about motorcycling. There is a high element of uncertainty involved, even for an experienced rider. God only lets us know what we need to know. We never get to see it all. So we stumble faithfully forward, from one thing to the next, doing the best we can. In a funny way, motorcycling helps people learn this. Riding makes a point about the uncertainty

of life in a cool way. And so far, over the forty years since I began, I've never been hospitalized due to riding."

Statistics sometimes present riding in the United States as being about six to eight times riskier, per mile traveled, than driving. The exact percentage involved seems to vary greatly, depending on how the motorcycle accident data are collected and manipulated. For example, adjusting for accident causal contributors significantly changes many things. Excess speed and rider impairment are responsible for about half of the difference between car and motorcycle crash rates. Wearing a helmet and protective clothing, riding regularly, and even the size, color and style of the machine—all influence one's vulnerability. So does completing rider skills training. After factoring in more items like these, the risks of motorcycling across most traffic environments may actually be much more closely comparable to the risks of traveling by automobile. Unfortunately, that's not what most people believe.

Motorcycles and scooters will always be inherently more vulnerable, but they are not inevitably always riskier. The odds of experiencing any kind of motor vehicle accident lessen slightly every year. There are fewer annual accidents per driver, per rider, per vehicle, per mile of road, and per mile driven, than ever. But don't try using this fact to justify riding to any one who doesn't ride. They are only concerned about the future likelihood of accidents and injuries happening to them, and the relative numbers. The problem is that although less than two percent of all active American riders are injured each year in some way as a result of some kind of motorcycling or scootering accident, this is still far higher

than the percentage of automobile drivers who are injured each year.

We endlessly remodel our individual lives in countless ways to better accommodate an ever-changing mix of circumstantial realities. In rich countries, riding-as-transportation may be slightly more appealing during periods of political upheaval and economic hardship, and riding-as-entertainment may be dominant during times of peace, stability and prosperity. But riding always remains. In locations where roads are highly congested and automobiles dominate traffic, riding may be more risky since the rider is a member of a very small road-going minority. But when the ratio of cars to bikes changes, things get a lot better for the rider in terms of the way the surrounding traffic behaves. Thus, if the number of motorcyclists and scooterers in the United States were to increase even slightly, congestion would ease a bit, and riding itself would become statistically safer and easier.

Democracy coupled with universal citizen education and political equality theoretically leads to equal rights, but sometimes a minority—comprised in this case of motorcyclists—deserves more than a level playing field. The theory of 'social justice' is that overall social progress can be hastened when governments do things which incentivize beneficial activities and provide special privileges for the disadvantaged. Riders, particularly those who motorcycle for utility transportation reasons, should receive the benefits of both. Although motorcyclists are not being denied equal rights under the law, sometimes regulations and legal practices, whether intentional or not, effectively make motorcycling both less attractive and more dangerous. Because riding may

in the long run turn out to be an individually and societally desirable activity, I believe the relevant laws, regulations and policies should actively protect and encourage it.

To specifically address the increased burdens of vulnerability that come with motorcycling's vehicular minimalism, one such helpful bias might, for example, involve mandating stiffer vehicle-code violation penalties for accidents involving instances when the driver of a larger vehicle is found responsible for negligently causing harm to any more vulnerable person, including those who are walking, skating, bicycling or motorcycle riding. Traveling across the state of Michigan, one sees signs at every road construction zone which read, "Kill a highway worker, automatic $12,000 fine and one year in jail." Simple and effective. Similar future signage might be seen in all states, rewritten as: "Kill a highway worker, motorcyclist, bicyclist or pedestrian and the fine is $12,000 plus a year in jail." Even though the chances of this actually happening seem unlikely, for obvious reasons falling outside the scope of this book, that does not make the ideas themselves any less worthy of our consideration, discussion or implementation.

Riders already enjoy High Occupancy Vehicle lane access on limited-access federal highways. The principles underlying this extra privilege came directly from positive historical experiences, and from the extensive legal precedents for government regulation of automobility. And there are many other ways to further extend such regulatory biases. Motorcycles and scooters are a distinctive vehicle type and a specially licensed vehicle class, so implementing sheltered, discounted or free parking might be even easier than providing loading zones for licensed commercial trucks. And since

multiple motorcycles are able to use a single space, if such an incentive became law, the aggregate number of spaces available for everyone driving cars should slightly increase. In related areas, if riders could somehow be exempted from bridge and road tolls, and given increased, carefully defined lane-sharing and 'filtering' privileges, urban road congestion levels might be slightly reduced for everyone who drives. Interestingly, lane sharing is already permitted (or tolerated) across most of the motorized world.

The United States could also easily increase the percentage of its population that starts on motorcycles and scooters, as done in Europe and most of Asia, which have rider entry programs that directly influence the ways in which these vehicles are perceived. My friend Jim summarized the typical approach in an email: "Having been brought up in East Africa and Europe," he wrote, "my solution is based on the European model. Here are the basic tenets: A) Permit 50cc motorcycle licensing at age 13 with speed restrictions, B) Motorcycle and scooter learner permits at 15 1/2—with restrictions on night riding, freeway travel and passengers, C) Raise the driving age for a car to 18—no exceptions, and D) Professional training for everyone which would include street operations." I wouldn't bet that such changes will be made here in the United States anytime soon, or without large compromises and adjustments. But these are well-proven, effective methods of increasing riding populations. Significantly more motorcycles and scooters are part of the traffic mix across all of Europe and Asia, with far less accidents occurring per rider mile in all of these areas.

For many individuals, riding involves acquiring the 'best' machine possible and riding it so as to have the 'best' experiences imaginable. People pay big money for coolness, particularly for purified epic coolness that is untainted by any other considerations. But the ways we compete for personal advantage are continually changing because of new, ever-developing external factors. Moto-fashions, both material and behavioral, alter like all fashions in response to changing environmental, cultural, economic and social externalities. Key parts of our sociobiological connections with most advancing technologies, and with automobility in all of its forms—including motorcycles and scooters—are pragmatic, opportunistic and fluid. What is cool for one generation may turn out to be the opposite for the next. Only, as you'll read here, are our evolutionarily derived underlying psychobiological imperatives relatively timeless.

The Aerostich company's mission statement is: "To profitably provide products that encourage the adoption of motorcycles," and publishing this book falls well within that business goal. Our immediate commercial opportunities are very closely related to the number of people who choose to ride, so a large part of my motive for publishing the ideas that follow has been selfish. But beyond this, and an important part of who I am, is one of Aerostich's central marketing narratives. We try to present ideas which encourage our customers to think about their lives and mobility choices in ways which are not part of mainstream societal and cultural programming. This value comes straight from my life's most influential experiences. I've never felt, and won't ever feel, that there are too many cars. Or that automobiles are not

useful, fun, interesting, functional, and wonderful machines. Cars and trucks are all of those things, and much more. But for me, riding motorcycles and scooters is usually (though not always) better.

My years of riding have been a transformational, and in some ways radicalizing, experience. A committed rider might be either a tough-looking, old-school, greasy, chopper-riding badass—or a milquetoast, clean-cut, dedicated scooter rider. Or anything in between. The underlying reasons they each ride are, in part, as similar as their external appearances are different, though they might not know it, and it is that deeper and more important commonality all riders share that this book, in part, investigates.

I learned about *Bodies in Motion* while Steve was writing an early draft. Later, after the first draft of the manuscript was submitted, I learned that the University of California Press, which had commissioned Steve to write the book, underwent staff changes that effectively resulted in their decision not to publish the book. At that point, I asked for a chance to read the manuscript. As soon as I'd finished reading, I requested the opportunity to publish the book because it will help everyone better understand how and why motorcycling is important, and why riding has such a powerful influence on us.

I hope every reader enjoys this book as much as I did, and learns as much from it as I did, not least because it clarifies the many ways in which riding is a "social good." In any case, emerging trends are likely to support the greater acceptance of motorcycle and scooter riding in utility roles. Like Steve, I hope that as more of us learn more about our external and internal environments, substantial changes will occur in how

we design and use our machines of mobility, and that riding will steadily become easier, safer and more popular. Until then, whenever I'm in doubt, I choose to ride.

—*Andy Goldfine, June 2008*