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Traffic Cyclists as Performance Artists
Review of:
The Art of Cycling: A Guide to Bicycling in 21st Century America
by Robert Hurst

1 Hurst's Third Theory

How should cyclists operate in traffic? Robert Hurst, in *The Art of Cycling*, says that they should operate as performance artists. "A successful, safe ride through American traffic is not an exercise in rule following, but a beautiful piece of interactive performance art." Just what is this art, how do you do it, and will it change our traffic? These questions, raised by Hurst's stated aim, are discussed in this review.

It has been said that there are two theories of bicycle transportation. One is that cyclists should operate as drivers of vehicles, called the vehicular-cycling principle, to be implemented by good roads and good rules. The other, that cyclists should stay out of motorists' way as much as possible, called the cyclist-inferiority hypothesis, preferably implemented by bikeways. Vehicular cycling requires confidence that the traffic system generally operates according to the rules of the road and treats each cyclist generally as equal to each motorist. Cyclist-inferiority cycling is based on the fear that the traffic system will not protect cyclists, who must, for their own safety, disobey the rules of the road, preferably with the assistance of bikeways to overcome their fear.

Robert Hurst, in his *The Art of Cycling* (Falcon Press, copyright 2004, 2007), argues for a third way that combines confidence in cycling skill, as in vehicular cycling, with the distrust of the rules and the lawless behavior of cyclist-inferiority cycling. I don't know how much Hurst's argument has influenced the actual behavior of cyclists (rather than merely reporting the behavior of

some), but it has certainly achieved influence among those amateurs concerned about bicycle transportation.

The reasonable explanation for the appeal of Hurst's argument is rather lengthy. Vehicular cycling has many enemies. Americans have been raised to believe that vehicular cycling is dangerous and cyclist-inferiority cycling is absolutely necessary to be safe. American motorists would like to see cyclists cleared from their path, as cyclist-inferiority cycling does and bikeways do better. Anti-motorists and bicycle advocates hold that cyclist-inferiority cycling on bikeways is absolutely necessary to reduce motoring, and that vehicular cycling makes achieving that goal more difficult.

Furthermore, vehicular cyclists oppose the program of incompetent cycling on bikeways on several grounds. Obeying the rules is safer than disobeying them. Bikeways don't make incompetent cycling safe. Laws requiring cyclists to use bikeways make competent cyclists operate incompetently.

Therefore, the activity of vehicular cyclists to protect their right to operate on the roadway according to the rules of the road for drivers of vehicles has aroused fierce enmity from those who advocate cyclist-inferiority cycling on bikeways as a necessary social good. The enmity is probably intensified by the fact that the evidence overwhelmingly supports vehicular cycling over cyclist-inferiority cycling; when one feels impelled to support an argument that has no factual basis, emotions prevail.

Hurst is a bicycle advocate who has worked as a bicycle messenger. That job requires the

quickest of movements through the most congested downtown traffic, because that is what the customers demand. Hurst clearly recognizes that operating under a sense of frightened inferiority is not calculated to persuade people to take up cycling on the typical street. He also recognizes, of course, that cycling can be more popular when the fear is removed by bikeways. He also recognizes two things about vehicular cycling. Vehicular cycling is slower than disobeying the rules of the road, and vehicular cyclists oppose the bikeways whose design nullifies the rules of the road.

Recognition of these facts sets the strategy of Hurst's argument: advocate disobeying the rules, praise the popularity of bikeways, and disparage vehicular cycling as being slow, inflexible, and opposed to bikeways.

2 Hurst's Arguments

2.1 Opposition to Rules

The essence of Hurst's advocacy is cycling without following rules. The following quotations demonstrate that fact.

62 Beyond Vehicular Cycling

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"We will abandon the pretensions of principles and rules and will adapt to the ever-changing chaos of city life. ... Instead of attempting to dictate the flow of traffic, we will become the flow of traffic, and it will become us."

240 Epilogue: Of Bicycles and Cities

[City cycling is really living]

"it becomes apparent that unpredictability, chaos and madness are some of the most important cogs in the city's machinery. The deck is stacked with jokers. There is a ghost in this machine, and it appears to be stupid and/or drunk...."

"The masterful urban cyclist finds himself in a strange sort of dance, moving to all those drummers. There is no single principle that will see us through. But we have much more powerful tools at our disposal: timing, flexibility, and flow. Freedom. A successful, safe ride through American traffic is not an exercise in rule following, but a beautiful piece of interactive performance art."

However, Hurst does not quite deny some order, for he claims that traffic does operate

according to its own mysterious laws.

109 Instinct Unveiled

"The city moves according to laws that are more powerful and more interesting than the traffic ordinances. These laws are mysterious but not unfathomable." If the cyclist has come to understand these laws, then "you are some pedal strokes ahead and laughing all the way when traffic reaches out to bludgeon you with one of its tentacles of disorder."

Hurst here claims that traffic does not operate according to the rules of the road, the traffic laws, that have been enacted by man, but according to its own different laws. This contrasts with the conventional view of traffic law and highway engineering. The conventional view holds that traffic indeed does have its inherently available methods of operation, and that it is the task of traffic law to select from among the available methods and specify those desired. If men make a mistake and legislate a method of operation that contradicts traffic's inherent operational methods, that traffic law will fail, as has been shown often enough. The corollary is that the body of traffic law, the rules of the road, is almost entirely in conformance with what Hurst calls traffic's "mysterious but not unfathomable" laws.

2.2 Failure to Instruct

Any person who advocates cycling without obeying the traffic rules has two choices. He can avoid providing instruction, or he can provide alternate instruction. Hurst sometimes does one, sometimes the other. The following are examples of his failure to provide instruction on subjects he discusses.

35 Cycling The New American City

Hurst writes that cycling in the New American City is easy, but he doesn't say how to do it.

53 RR Tracks

When he discusses the problem of railroad tracks, Hurst provides a poor description of the diverting type fall produced by diagonal tracks, and says get perpendicular to the tracks, but he provides no instruction as to how to get perpendicular to the tracks.

55 Toppings [slippery surfaces]

When Hurst discusses slippery surfaces he

instructs: “ride across these problem surfaces without turning or using the brakes”. That is correct in itself, but Hurst provides no instruction in how to achieve that effect.

92 Four Way Stops

Hurst considers intersections with four-way stop signs. He describes motorists who fail to take their turn through inappropriate courtesy to cyclists, or merely recognition that cyclists typically run stop signs. Then Hurst remarks: “the idea that cyclists should come to a complete stop at four-ways is an old-fashioned one,” but he provides no real instruction as to what the cyclist should do at such intersections.

105 Looking Back

When Hurst discusses looking behind, often called the shoulder check, he instructs to do this only after you have determined that all is safe in front. However, he provides no instruction for when it is necessary to look behind.

153 Riding With Others

With one partner. “If both riders are very experienced in traffic, they will both feel compelled to occupy the same space on the road, and they will have to share the safe zones. The position of one rider determines the available maneuvering space of the other, and mobility is necessarily limited for both.”

In large group. “Pace-line mishaps and misunderstandings at intersections are common in this genre.”

Hurst writes that incompetent cyclists are a problem.

As so often, while Hurst discusses the situations, he provides no instruction as to what to do under the circumstance.

164 The Paradox of Experience

Experience reduces the accident rate. Graph shown has no reference.

2.3 Defective Instruction

Any person who advocates cycling without obeying the traffic rules has two choices. He can avoid providing instruction, or he can provide alternate instruction. Hurst sometimes does one, sometimes the other. The following are examples of his defective instruction on subjects he discusses.

45 The Great American Pothole

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“On very dark, unknown streets the rider needs to decrease speed and assume a sort of pothole-smashing ‘ready position’; with the weight back, the arms and legs bent.”

Hurst’s instruction is physically impossible to obey. The cyclist can move his upper body mass a bit to the rear by straightening his arms, which is contrary to Hurst’s instruction. The cyclist can bend his legs by lifting his feet off the pedals, which prevents the forward motion that is necessary to fulfill Hurst’s instruction to continue cycling.

84 Running Green Lights

Bicycle messengers do well at running red lights, and are more likely to be hit while moving on the green. “But, clearly, following the traffic rules alone isn’t necessarily synonymous with safe riding. There must be something else, a more important ingredient that keeps riders out of trouble when they sneak through red lights, but somehow turns up missing when the light is green. That critical ingredient is the rider’s own awareness. The trick is to bring your red light awareness to the green light intersections.”

Awareness is not the difference, because awareness can work only on those items that it is possible to see. The cyclist sneaking through a red light creeps up to the intersection so he can look both ways to see if traffic is coming. Only after he is satisfied that he can dodge whatever traffic is present does he enter the intersection. Following the principle of Hurst’s red light instruction requires that the cyclist on green creep up to the intersection, look both ways to see that he can dodge whatever traffic may be present, and only then enter the intersection. I rather doubt that even Hurst follows his own instruction.

93 Momentum

Hurst discusses stop signs under the heading of Momentum. “Even the incurable stop-sign busters should get used to the idea that walking pace is about the maximum speed a rider should ever go rolling through a stop sign, and, not only that, they will have to accept the fact that they will actually need to stop and put a foot on the tarmac more often than not.”

The deficiency is that Hurst fails to mention looking and yielding as being the criteria for choosing actions. I suppose that such instruction seems too close to following a rule.

103 Left Turns

Hurst offers the choice of forcing one's way across lanes to the centerline, disrupting traffic as he does so, or making a pedestrian-style turn. Hurst disparages his version of vehicular cycling: "They throw hand signals, look back, look back some more, and pull out in front of cars that are moving much quicker than themselves."

The deficiency is that Hurst provides no instruction for properly reaching the appropriate position for a left turn by using the sequence of looking, yielding, and negotiating.

104 Corner Cutters

Hurst instructs, when approaching a stop sign, not to advance to the intersection boundary, because you may be hit by a corner-cutting motorist. That is, a motorist from your right making a left turn. "The corner-cutting phenomenon is a good reason to roll slowly towards intersections, to be patient, and to stay 5 feet or more back from the corner, just out of the cutter's favorite path."

Not only does Hurst ignore looking and yielding as the criteria for knowing when to enter the intersection, he instructs you to stay in the position from which you cannot see what is necessary to enable you to act properly.

105 Looking Back

Look back only after you have determined that all is safe in front. Again, Hurst fails to provide instruction on when it is necessary to look back.

111 Turn Signals

Utterly ignore motorists' turn signals because they mean nothing: "Turn signals matter little to the experienced rider." This is just one more example of Hurst's view that traffic is little more than chaos. However, drivers are not so erratic that their signals are not useful, particularly when combined with the other hints as to their intention. And those hints, such as roadway position and speed, are significant even without a signal, as well as the most important instruction to never ride up on the right-hand side of a vehicle that can turn right, regardless of absence of signal.

112 Hand Signals

"At relatively high speeds, with a vehicle coming up behind, the rider does well to pop a quick hand signal before slowing down for a turn." If one thinks it right through, it appears that Hurst is instructing the cyclist to give a slowing signal, or is he? Defective instruction, this is.

"Moving from lane to lane might require looks back as well as hand signals." Hurst here shows either his ignorance of, or his opposition to, the rules regarding right of way, yielding, and negotiation.

130 Panic Stops

Hurst here shows complete misunderstanding of the laws of physics, and he claims that cyclists (road bikes assumed) can brake at 0.8g. (See the section under Avoidance of Engineering)

Hurst's instruction, sorted out from the pretty words, is to go to a paved place without traffic and practice increasing the force on the front brake lever until you can determine the maximum force that will not lift the rear wheel. That's reasonable enough, but whether the reader will disentangle it from the rest is questionable.

Hurst also claims that both heavy braking and sharp cornering can be done simultaneously. The laws of physics say that this is impossible; I suggest that you don't try it.

149 Riding at Night

As near as I can understand Hurst, he says to use proper lights but ride as if invisible. This is one more example of Hurst's distrust of the efficacy of the normal operating rules.

171 How to Fall

Learn to roll. Hurst fails to differentiate between the different types of accident that cause falls, say between slide out and pitchover, which cause very different types of fall that require different actions by the cyclist.

201 Fixing Flats: A Primer

Some errors. Only 2 tire irons. Remount using only fingers, no irons. Check casing seating only after pumping to full pressure. (See Blowouts)

214 Blowouts

Hurst says that the most common type of blowout is rim blow-off, for which he offers the following instruction: "Make sure the tire is seated properly, with no sections of tube visible." Under Fixing Flats he says that this inspection is not necessary until after pumping to full pressure. I question all of this. Only people who mount their casings improperly will have rim blowoff blowouts. (Barring some exceptional mismatch between casing and rim, which have occurred.) I doubt that, if any part of the tube is visible, it is possible

to reach half of normal pressure without a blow-out.

It is true that the bead of a casing that is improperly seated will tend, as the wheel rotates under load during cycling, to creep up over the edge of the rim and cause this type of blowout. However, the presence of visible tube material indicates an entirely different type of blowout, which will occur during pumping. Hurst provides no instruction as to how to determine whether or not the casing is properly seated in the rim.

Then Hurst offers some common advice: don't use gas station air; change tires before wearing through the tread area.

Obviously, it is impossible to repair a tube that has produced a rim blowoff blowout; the slit is far too long. But the common type of blowout is that from damage to the casing, and Hurst should have included instruction for patching casings and the material required.

Note about tools

Hurst's name for the bearing cones and lock-nuts of adjustable hubs: "bolts".

2.4 Some Good Instruction

76 Road Position and Location

Despite his dislike of rules, Hurst provides the standard rules regarding lateral position on the roadway. Ride on the proper side of the road. Ride outside the door zone. Use destination positioning when approaching intersections.

He says that the default lateral position is near the center of the lane being used. But he also recommends flexibility in choosing actual lateral position depending on ... well, depending. After all, if he doesn't like rules, then he can hardly invent them.

2.5 Avoidance of Knowledge

109 Instinct Unveiled

"The city moves according to laws that are more powerful and more interesting than the traffic ordinances. These laws are mysterious but not unfathomable." If the cyclist has come to understand these laws, then "you are some pedal strokes ahead and laughing all the way when traffic reaches out to bludgeon you with one of its tentacles of disorder."

Hurst here asserts some kind of mystery knowledge that is not known to those who study traffic and prepare the traffic laws. Furthermore,

Hurst never describes the content of this mystery knowledge.

158 The Statistical Quagmire

160

Statistics cannot be relied upon. "Rather than searching for answers in piles of paper, let us seek knowledge from the cyclists themselves, those with literally hundreds of thousands of miles' worth of experience and decades of truck dodging behind them. These men and women have plenty of stories to tell."

This is no more than the assertion of knowledge through multiple anecdotes. It is entirely possible that a study of the crashes of bicycle messengers would show a different pattern than the pattern for typical cyclists or the pattern for vehicular cyclists, which are known to be different. However, Hurst has neither made such a study nor is aware of statistical principles. He is simply asserting that the anecdotes of bicycle messengers present a more accurate picture of bicycling hazards than do the accident statistics, which is an absurd claim.

161 The Stats at a Glance

Hurst at least chooses the most reliable statistics. "There's no greater danger to the cyclist than the cyclist's own incompetence." Car-bike collisions are 15% of accidents, half from cyclist incompetence. 90% of car-bike collisions involve turning or crossing, motorist left turn most frequent of motorist-caused type.

162 Cycling Fatalities

164 The Paradox of Experience

Experience reduces the accident rate. Graph shown has no source listed.

2.6 Avoidance of Engineering

64-65

Hurst here claims that growth in population and number of autos has made vehicular cycling obsolete, but he offers no evidence for this claim.

It is obvious that the engineering design of the road system has improved over the years, allowing the increased traffic to operate better. Of course, these improvements increase the need to operate according to the rules, but since vehicular cycling is operating according to the rules it becomes more appropriate rather than less. I sus-

pect that Hurst's claim is motivated more by his dislike of rules than in growth itself.

75

"American cyclists are lucky that continuous, fully separated bicycle/pedestrian mega-paths have been and continue to be constructed in many cities."

Hurst here shows his ignorance of engineering, construction, urban pattern, and much else. Only a few American cyclists are in a position to benefit from "continuous, fully separate bicycle/pedestrian mega-paths" because only a very few locations have the characteristics suitable for such paths. Furthermore, building such paths in the typical locations that are not suitable, as Hurst claims, has never been done in America.

109 Instinct Unveiled

"The city moves according to laws that are more powerful and more interesting than the traffic ordinances. These laws are mysterious but not unfathomable." If the cyclist has come to understand these laws, then "you are some pedal strokes ahead and laughing all the way when traffic reaches out to bludgeon you with one of its tentacles of disorder."

The function of engineering is to understand the characteristics of substances, processes, and activities, in order to produce useful results. Hurst is here claiming that traffic engineering has failed to understand traffic. Extraordinary claims require extraordinary evidence, none of which Hurst ever advances.

128 Turning and Cornering

Hurst has picked up the concept of countersteering, but not in the context of the laws of physics; he simply describes countersteering as "bizarre" and "crazy". His description merely frustrates a person with knowledge without informing anyone. The only useful advice I see in two pages is that cornering too fast may make you slide out, and this problem is intensified on slippery surfaces.

130 Panic Stops

Hurst here shows complete misunderstanding of the laws of physics, and he claims that cyclists (road bikes assumed) can brake at 0.8g. Hurst states that the calculations for maximum braking deceleration, which he thinks are erroneous, are "based primarily on the relatively high center of gravity of the cyclist, and the coefficient

of friction between rubber and road."

Those are not the variables. The critical value is the ratio between the forward distance from the center of mass to the front tire patch and the height of the center of mass, and this is not greater than about 0.7 for a normal bicycle. The coefficient of friction is irrelevant unless slippery surfaces are considered.

Hurst contends that the cyclist can thrust his body backward at a rate that cancels enough of his forward momentum to prevent pitchover at decelerations up to 0.8g. "They throw themselves back to cancel some of the force sending them forward. Just enough of this forward momentum is canceled that the bike stays on the ground and under control." It is a standard principle of physics that the momentum of a system of masses (the cyclist and his bicycle, in this case) can be changed only by the application of a force from outside that system. The cyclist can wiggle about on his bicycle as much as is possible, but he cannot thereby change the momentum of himself and his bicycle, which is the momentum that is to be reduced through the braking force applied through the two tire-contact patches.

Some writers advise increasing the forward distance between the center of mass and the front tire contact patch by having the cyclist move his butt behind the saddle. This changes the ratio that determines the maximum braking deceleration, raising it by a small amount, say five percent. I say that this reduction in possible stopping distance is not worth the clumsiness produced, a detriment when sharp bicycle handling may be necessary to complete the collision avoidance maneuver.

I know of no tests in which cyclists on normal bicycles have produced braking decelerations of 0.8g.

Hurst also claims that heavy braking and hard cornering can be performed simultaneously. "Even under substantial g-force deceleration, a cyclist can turn the bicycle sharply."

This is false. For convenience, I define "grip" as the maximum lateral force available from the combination of a tire, the road surface, and the downward force of the tire onto the road. Deceleration requires use of the "grip" and substantial deceleration requires a large part of the available grip. Cornering also requires the use of grip, and sharp cornering requires a large part of the available grip. Adding the demands on grip of hard braking and sharp cornering exceeds the amount of grip available, so the bicycle slides out of control. My advice for avoiding collisions by braking

has always been to first brake hard to reduce the speed and then release the brakes and turn sharply to steer away from the danger.

176 The Helmet Controversy

Hurst claims that there is no evidence that helmet wearing reduces injury. "no indication of any statistically significant reduction in the rates of head injuries or fatalities due to vastly increased helmet usage. ... We just assume. There is a great deal of hopeful superstition behind our faith in bicycle helmets." That is only a shallow way of looking at what is known from one set of data; there are other kinds of knowledge than statistical.

Hurst supports his argument by comparing the dangers of driving and walking to those of cycling: "there is nothing special about cycling that is particularly likely to cause a head injury." Well, there is. Cyclists are balanced upon an unstable machine at a height often a bit above standing height, and use that machine to travel at up to five times walking and running speeds. As we know from statistics, half of cyclist injuries are caused by falls, and any time one can fall from a bicycle one can, and all too frequently does, hit one's head.

I suspect that Hurst's antipathy toward helmet wearing is not against the act as such, but against the advocacy of helmet wearing as if it, like bikeways, made cycling safe. It would have been useful for Hurst to have made this logical separation, but, then, he fails to have the engineering knowledge to provide this understanding.

179 What are Helmets Built For?

Hurst's discussion of the purpose of wearing a helmet shows his complete misunderstanding of the physics of impact and impact attenuation. His argument is painful reading for a physicist. Shall we just say that Hurst fails to understand the normal force produced by angular impact?

181 Torsion Injuries

Head-rotation injuries are serious, helmets may increase them

182 The Helmet Verdict

Hurst completes his section about helmet wearing by advising that they provide a useful degree of protection -- so wear one. However, since his discussion does not support this conclusion, all that one can say is that Hurst is again operating from ignorance of engineering.

2.7 Contradictions and Paradoxes

73

choose routes for "minimizing hassle and stress."

Hurst has spent much of his book saying how easy it is to ride in the intricate dance of modern city traffic, and now he advises that this is often so full of hassle and stress that the best thing to do is to choose less stressful routes. Like I headed this section, a paradoxical contradiction.

82, 83, 84

But, don't take narrow lanes, for taking the lane "forces motorists either to run the cyclist over or move completely into another lane to pass." This generates motorist anger and assumes that they cyclist will be seen. For those cyclists who regularly block lanes: "more intensive route finding will be the best medicine." "The artful cyclist rarely needs to commandeer an entire lane in front of faster traffic." "If ... the cyclist is constantly fighting cars for one available line, that's as good a definition as any of a street that is bad for cycling. Find a different one."

I see, on streets with narrow lanes squeeze over to the edge because otherwise you will anger motorists. If you feel the need to take the lane, then go ride on other streets. If you think that you are fighting with motorists, then go ride elsewhere. This smacks of fear and inferiority feelings and does not strike me as a useful recipe for city cycling. Furthermore, these instructions appear to contradict much of what Hurst writes elsewhere in his book.

109 Instinct Unveiled

"The city moves according to laws that are more powerful and more interesting than the traffic ordinances. These laws are mysterious but not unfathomable." If the cyclist has come to understand these laws, then "you are some pedal strokes ahead and laughing all the way when traffic reaches out to bludgeon you with one of its tentacles of disorder."

I see why it is that Hurst has so failed to provide instruction for operating under the conditions that he classifies as mysterious but has never actually described. The task is logically impossible.

113 In Defense of Gutters

There are two sides to the gutter debate, but Hurst appears concerned about only one. One

side is the typical or common “command” to ride as far to the right as possible, including in the gutter if possible. The other side is the vehicular cycling response to this “command” that cyclists should not be expected to ride in the gutter, for which several good reasons can be offered. Hurst spends 1/3 of this chapter opposing the vehicular cyclists’ strong recommendation against riding in the gutter. So Hurst, with his opposition to rules aroused by the vehicular cycling position (although not by the cyclist-inferiority “command”), replies that he will ride in the gutter whenever he likes, no matter what the vehicular cyclists say.

Well, indeed, it is sometimes useful to ride in the gutter, as I have remarked more than once, but doing so requires a greater degree of caution and limitation upon movement than does riding away from the gutter. I suppose that it is freedom exaggerated that causes Hurst to argue so vociferously for such a limiting location.

141 On the Bike Path

Hurst has so many different opinions about bike paths that any description appears to contradict itself.

Bike paths are wonderful: “... the fully separated path is the newest, coolest tool in the cyclist’s toolbox. No cars, no stops.”

But bike paths may be dangerous: “Just because a tool may be somewhat dangerous, like bike path, doesn’t mean it won’t be a useful tool.”

Because of beginning cyclists, “paths become much more dangerous than they have any right to be.”

Bike paths attract other traffic: “In this regard, bike paths are troubling because there is not much available space to escape into. Adjust for the lack of space by slowing way down around pedestrians and other path traffic.”

In the first quotation above, Hurst claims that bike paths are free of cars, yet he also states: “When new bicyclists have to cross an intersection, they are often unappreciative of the level of danger that intersections pose.”

Hurst fails to sort this jumble of contradictions into a rational recommendation.

149 Riding at Night

As near as I can understand Hurst, use proper lights but ride as if invisible.

That’s a contradiction I don’t understand.

2.8 Urban Planning Errors

Hurst is clearly promoting cycling as a way to get around modern cities with ease and joy, despite the fact that most transportation is by motor vehicle. That’s fine, but that purpose doesn’t require a historical account of how the modern automotive city developed, which is what Hurst provides, although his motive is not obvious. Hurst frequently and obviously expresses his dislike of motor traffic and the way that motorists operate. I suggest that by providing a history of the automotive city, Hurst is trying to separate his views from those of the bicycle advocates who describe motoring as evil and are regarded by many in society as extremists, but without himself calling their view extreme. In short, Hurst has to recognize both sides without committing himself to either.

He does so, but provides very little information to support his argument, information so sketchy that it is subject to misunderstanding. Hurst’s errors about urban pattern do not affect his cycling argument, but show the shallowness and disjointedness of his thought patterns.

23 Transportation and the Shape of Cities

Hurst’s historical sketch of American cities is quite amusing, but it fails to cover the significant points with regard to bicycle transportation. Since this is not the place for a course in urban planning, I mention only that Hurst fails to describe the different effects on cyclists and cycling of the different stages of growth. Modern cyclists now have to ride greater distances on streets with faster traffic in order to accomplish the same range of trips performed by former cyclists.

While Hurst does not explicitly say so, it is obvious that he is happiest, and his riding style probably best suited, to the congested urban centers rather than the suburbs.

25 Suburbs

While Hurst’s writing is disconnected, he appears to put suburban shopping centers ahead of suburban residential areas, dating these shopping centers to the World War 1 period, say 1915 to 1920. I suspect that Hurst knows better and this is simply demonstrative of careless thought.

As for suburbs themselves, Hurst takes care to sit on the fence. “The automobile suburbs mean different things to different people. One man sees freedom, opportunity; another sees a prison.”

26 Great Streetcar Massacre

Another egregious insertion is Hurst's chapter titled *The Great Streetcar Massacre*. Rather than being a massacre to be deplored by cyclists, this removed dangerous and inconvenient tracks from the streets, an advantage Hurst fails to mention. And, again, Hurst hasn't done his reading on the subject he chose to introduce. Hurst introduces the folk tale of General Motors' conspiracy to eliminate streetcars: "The motorized interests, led by GM, assassinated the streetcars. No doubt about it." Hurst provides the justification that: "many of the traction companies were thoroughly shady and muckrable entities, associated with greed, corruption, and the general stench of political improbity."

So many items that Hurst fails to understand. Buses provided better service at lower cost than did streetcars (too complicated to explain here, but obvious to any economist). The famous conspiracy conviction was not for eliminating streetcars but for preventing other bus manufacturers (and other suppliers) from intruding into a profitable monopoly deal. And to top off all these economic and engineering errors, Hurst has the gall to claim that, while streetcar companies did not receive public subsidies, motorists were being subsidized by being required to pay gasoline taxes. This is particularly ironic because today's subsidies paid to rail mass transit are several times higher than the subsidies paid to bus mass transit, and hundreds of times higher than the subsidies paid to motorists, per unit of transportation.

28 Congestion

Hurst trots out all the common superstitions about congestion and its cause. But why should he bother? It makes light and pleasant reading for those who believe those superstitions, I suppose.

Hurst does supply one piece of cycling information, that congestion slows motorists far more than it does cyclists.

33 Enclosure

Hurst writes that the automobile destroys the "coming and going on foot at nearly all hours, for a variety of reasons ... of people from all walks of life. .. that are the basic building blocks of safe, vibrant cities."

That's one superstition, but, equally, there is the opposite superstition of the dangers of crowded city streets where crime is rife. Is Hurst simply pleasing those of his readers who oppose

motoring?

35 Rage

Because cars largely insulate their drivers from the outside world, drivers feel that they can get away with worse behavior to the outside world than if they were walking on the sidewalk. Hurst tells cyclists that this is just the way things are: "we should not get all bent out of shape about the unshakable realities of traffic."

95 Notes on Traffic Lights

This light and shallow history of traffic lights provides in two verbose pages the information that traffic-signal detector circuits respond to sufficient quantities of metal.

109 Instinct Unveiled

Hurst argues that: "The city moves according to laws that are more powerful and more interesting than the traffic ordinances. These laws are mysterious but not unfathomable." If the cyclist has come to understand these laws, then "you are some pedal strokes ahead and laughing all the way when traffic reaches out to bludgeon you with one of its tentacles of disorder."

I see, these expert bike messengers know far more about traffic operation than do traffic engineers.

2.9 Silence About Bike Lanes

Hurst provides some praise but no instruction regarding bike lanes. I presume that with his dislike of rules he considers that the presence or absence of a bike-lane stripe makes no difference to the kind of cycling he advocates, whatever that may be.

2.10 Anti Vehicular Cycling

It is only natural that Hurst praises his own style of cycling, although he doesn't describe that style beyond giving the very standard rules: ride on the proper side of the road; ride outside the door zone; use destination positioning when approaching intersections. As far as I can understand Hurst, he recommends doing anything else that pleases you and you can get away with.

So, rather than describing his own indescribable, Hurst describes what his style isn't. That is, it isn't following the rules, which means repeating that Hurst's cycling is not vehicular cycling. To be more accurate, Hurst claims that his style of cycling is not the activity that he argues vehicular

cycling to be. In short, to suit his argument, Hurst invents imaginary defects in vehicular cycling.

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On this page, Hurst lists the following as being actions done by vehicular cyclists but contrary to vehicular cycling: 1: Adjusting technique “to anticipate the possible mistakes of motorists.” 2: Filtering forward. 3: “Busting” through stop signs.

So Hurst claims that his style adjusts for the possible mistakes of motorists, even though he does not describe how to do it, while vehicular cycling does not. That’s not so. It is impossible to adjust one’s cycling style to account for the possible mistakes of motorists, because these are infinite in number and type. Vehicular cycling teaches how the traffic system operates with the cyclist as part of it, and, therefore, provides the cyclist with the information necessary to detect when some driver is not operating properly so he can avoid that erroneous movement if it is possible to do so.

Hurst claims that filtering forward is not vehicular. There is no basis for that claim. The law says that overtaking on the right is acceptable provided there is room for a line of vehicles, and bicycles are vehicles in this context. Of course, this needs to be done safely, which vehicular cycling also teaches.

Why Hurst singles out vehicular cyclists as being particularly susceptible to “busting” stop signs is puzzling, because they are less likely to do it than others, including Hurst-style cyclists. I suspect that Hurst included this because he believes that vehicular cycling is cycling without looking out for consequences.

57 Curbs

Hurst argues that curb hopping is a necessary city cycling skill. That’s a matter of opinion, but then Hurst argues that vehicular cyclists cannot do it because “theoretically, they dismount and carry their bike across the threshold.” There is no basis for this claim, because there is no instruction in vehicular cycling about the physical method of crossing curbs. The only instruction regards the effect of the action, however it is accomplished, on other traffic.

62 Beyond Vehicular Cycling

Hurst has a whole chapter so titled, indicating his desire to argue that Hurst cycling is different from and better than vehicular cycling.

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“The strict vehicular cyclist who has eliminated many of his or her own mistakes by riding lawfully will still remain quite vulnerable to the mistakes of others.”

This is quite correct, but by making this argument Hurst is trying to convince us that Hurst cycling avoids being vulnerable to the mistakes of others, even though he never is able to describe how this occurs.

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“Vehicular cycling ... fails to account adequately for the complexities; details, and chaos of the city streets. ... few experienced cyclists, even those who are vocal proponents of vehicular-cycling dogma, apply it consistently in their everyday travels. Instead, they use it whenever it suits their purpose and discard it when it doesn’t. They ... use an off-street bike path if it’s headed in the right direction. They roll through stop signs, treat red lights like yield signs, and filter past lines of stopped cars in traffic jams and at intersections. Not very vehicular of them. ... If cyclists were to suddenly start living by the vehicular principle in all situations, disregarding the special privileges and de facto rules they have built for themselves over the decades, the advantages of riding a bike in the city would be gutted.”

I see; Hurst here argues that Hurst cycling is better than vehicular cycling precisely because it takes advantage of all of these actions that vehicular cycling prohibits. With arguments like these, it is always difficult to tell whether the presenter is ignorant or knows better and is lying. It is easy to make such simple-minded assertions, but it requires careful discussion to answer them.

Vehicular cyclists argue against the public policy that is based on the superstition that bicycle paths must be safe because they have no motor traffic. Hurst himself, proved by his own instructions, knows that this policy is false. However, regarding the use of bike paths, vehicular cyclists provide exactly the same cautions as does Hurst: path/roadway intersections are often dangerous, the other traffic on the path requires slow and cautious cycling.

Hurst’s instruction for stop signs is to never go faster than walking pace and stop when necessary. Vehicular cycling instruction has the same instructions but they are only part of the steps necessary to look and to yield to crossing traffic, in exactly the same manner as is done by other traffic.

As for treating red lights like yield signs, Hurst appears to recommend always doing so, while vehicular cyclists provide careful instructions for doing this only in the case of non-responsive traffic signals.

Hurst claims that Hurst cycling allows filtering forward through traffic jams and at intersections, but that vehicular cycling prohibits this action. Not only is there is no instruction in *Effective Cycling* prohibiting this action, but there is specific instruction that the law allows this, together with detailed instruction in when and how to do it safely.

64-65

Hurst writes that growth in population and number of autos has made vehicular cycling obsolete. "The vehicular-cycling principle may simply be outmatched and outdated in the new millennium. ... [because] traffic much worse in just about every city in the nation. ... and cyclists are even more unwelcome on busy streets. ... Decades ago, the vehicular-cycling ideologues had high hopes for their cause: They hoped that cyclists would be granted not only equal rights, but also equal respect, on America's roadways, that cyclists would be able to cruise *any* city thoroughfare alongside -- or, to be more accurate, in front of -- cars and trucks, and that the whole concept of separate facilities would wither and die from lack of usefulness. The dream has failed to materialize. America is further from a vehicular-cycling utopia than it was twenty-five years ago."

Hurst praises "A prime example is Manhattan, where all the bridges onto the island are now accessible by bicycle due to new paths." Not precisely so; cyclists use the paths because for decades they have been prohibited from using the bridge roadways.

In his argument, Hurst fails to distinguish between the political and the cycling aspects of vehicular cycling, and again he has provided easy superficial claims when he should have provided careful discussion of the whole subject. Of course he does this, because careful discussion would destroy his argument.

American society has always considered cyclists to be inferior to motorists, incapable of obeying the rules of the road, thereby permitted on roadways only when there is no other choice, and restricted in their actions when on a roadway. Vehicular cyclists proved that cyclists were capable of obeying the rules of the road, that obeying the rules was safer than disobeying them, and that the restrictions on actions and facilities pre-

vented cyclists from obeying the safe rules. They hoped that this knowledge would convince society to change from a policy of incompetent cycling on bikeways to one of cycling in accordance with the rules of the road. Hurst is correct in arguing that this hope has failed, that American society is now more committed to its policy of incompetent cycling on bikeways. However, the fact that American society has strengthened its implementation of the policy of incompetent cycling on bikeways has no bearing on whether that policy is more proper for cyclists. That policy is just as wrong today as it was forty years ago; vehicular cycling is still better than incompetent cycling.

Despite this, Hurst feels compelled to oppose the cycling aspect of vehicular cycling (his motive will be discussed later). However, he can argue against cycling in the vehicular manner only by claiming that it is too slow and limiting when compared to Hurst cycling, and these claims require inventing defects in vehicular cycling. Therefore, as discussed above (at item 63), Hurst invents false claims about the use of bike paths, running stop signs, running red lights, and filtering forward.

Hurst also invents the falsehood that vehicular cycling requires delaying traffic, or that vehicular cyclists desire it. As quoted above, "vehicular cycling ideologues ... hoped ... that cyclists would be able to cruise any city thoroughfare alongside - **or, to be more accurate, in front of** -- cars and trucks." [emphasis added] There is no basis for this claim, and it is contradicted by the evidence. Both *Effective Cycling* and *Bicycle Transportation* advocate wide outside lanes that enable motorists to overtake cyclists without delay within the same lane. These books advocate taking the lane only when the cyclist is traveling at traffic speed or the lane is too narrow to safely share.

66

"Where the vehicular-cycling principle leaves responsibility in the hands of motorists, and trusts they will act properly, we will take back responsibility for our own safety whenever we can. ... We will abandon the pretensions of principles and rules and will adapt to the ever-changing chaos of city life. ... Instead of attempting to dictate the flow of traffic, we will become the flow of traffic, and it will become us."

Arrant nonsense. Vehicular cyclists attempting to dictate the flow of traffic? We wouldn't try, and we argue for cooperating with other road users instead of fighting them, for we all want to

get home soon and safely.

Hurst's irresponsible claim regarding responsibility requires much deeper discussion. Hurst here claims that the cyclist who trusts nothing and nobody has a low accident rate because, by looking for all possible dangers, he detects and avoids nearly all of the incipient collisions that threaten him.

Hurst's claim is contradicted by the principles of safety engineering. First, it is universally recognized that it is impossible to see everything in a real-time situation. The cyclist going through an intersection on a green light who is looking for a red-light runner from his right, or from his left, will miss the opposite direction left turner, whose presence, statistically, is many times more likely than such red-light runners. Second, it is universally recognized that it is much easier to detect and understand a safety violation when one understands the proper method of operation. The cyclist who thinks that all is chaotic, as Hurst claims it is and he should think, is going to miss the significance of a motorist slowing for no apparent reason. Third, understanding the standard operating procedure provides the best basis for understanding what is going wrong and taking the appropriate avoidance action.

The above are the standard safety principles that Hurst claims to improve by violating them. Hurst provides no evidence that violating the standard safety principles decreases the accident rate.

Vehicular cycling instructs the cyclist in how the traffic system operates by instructing him how to operate properly in it. The vehicular cyclist starts with the knowledge of how the traffic system operates and the confidence that it generally does. That knowledge enables him to quickly observe the occasion when some part of it operates improperly, and a good idea of how to avoid the consequence of that defect. "So be confident that most drivers will cooperate, **but be watchful for those who don't.**" -Effective Cycling p. 251 (emphasis added)

81 Myth of Lane Ownership

Hurst starts out by attacking the side-of-the-road law, which he says is "arbitrarily formulated and arbitrarily applied." But he also defends that law by saying that it "is not in place to increase the safety of cyclists, but simply to facilitate traffic flow -- to get slower vehicles out of the way of faster vehicles. For this reason, the law is often attacked by vehicular-cycling activists." Hurst's determination to invent defects in vehicular cycling has got

the better of him again. Vehicular cyclists oppose the side-of-the-road law because it is misused as a bicycle safety excuse based on the assumption of incompetent cyclists. That's the problem, not facilitating traffic flow, which is a reasonable purpose. Were Hurst honest or informed, he would know that vehicular cyclists have always argued that the slow vehicle law achieves the same purpose without discriminating against cyclists. It is the discrimination against cyclists, justified by a false safety excuse, that is the problem, and Hurst should know this because he adds a footnote that quotes Forester: "it [the side-of-the-road law] gives the motorist superior rights and status over the cyclist."

Next, Hurst attacks the practice of controlling lanes that are too narrow for safe overtaking by motorists. Those who control such lanes "say they do it to prevent these unwelcome and dangerous intrusions into personal space by moving well into the middle of the lane. This forces motorists to either run the rider over or move completely into another lane to pass." So what should the cyclist do when his route is along roads with narrow lanes? Hurst offers two choices. The first is to ride as an artful cyclist. The second is "find a different one. Save the evil street for special occasions."

So that's Hurst's way of easy and joyful cycling in the modern city? Sounds to me like cyclist-inferiority cycling.

Hurst obviously wants to criticize vehicular cycling, but the trouble with his argument is that he confuses controlling a lane when that is necessary for safety, and is lawful, with some kind of activism that controls lanes for the political purpose of blocking traffic. Whether the confusion results from mental confusion or deliberate propaganda is unknown. It is interesting to note that the cyclists who actually practice lane blocking for political purposes are those in Critical Mass, who are the opposite of vehicular cyclists.

103 Left Turns

When traffic is operating in what Hurst considers its typical manner, he offers the choice of forcing one's way across lanes to the centerline, disrupting traffic as he does so, or making a pedestrian-style turn. Hurst disparages his version of vehicular cycling: "They throw hand signals, look back, look back some more, and pull out in front of cars that are moving much quicker than themselves." That this description shows no understanding of vehicular cycling is hardly necessary to say. But it is necessary to point out that

Hurst's description suffers from all the defects of Hurst cycling, in that it pays no attention at all to right-of-way, yielding, and negotiation, which are the essences of vehicular cycling.

Bicycle Lanes and Paths: Good or Evil?

Hurst starts out with a reasonable historical summary: "Bike lanes and bike paths were packaged and sold to the public as safer facilities when in fact the best available statistical evidence showed that use of these facilities was actually more dangerous than riding on the road. ... The bad news about the danger of bike paths did not fit well with the goal of urban transportation engineers -- to get bikes out of the way of motor traffic -- so they just ignored it and kept building." Hurst follows this with a page of descriptions of these dangers.

Hurst is a promoter of bicycle transportation, one who knows that bicycle paths and bicycle lanes are popular, so that he cannot oppose them for the dangers that he knows exist. So, he pushes the blame off onto Forester and vehicular cycling. Hurst writes: "Led by John Forester, who was the first to mess up the program by pointing out the increased dangers of separate facilities back in the 1970s ... one gets the feeling that the vehicular cyclists are virulently opposed to separate facilities on principle alone."

This vehicular cycling opposition on the basis of principle is entirely reasonable when considering that the restrictive laws of many jurisdictions require cyclists to use bike paths and bike lanes wherever such facilities exist. A principle that requires cyclists to use the more dangerous facility has to be opposed on the basis of principle.

But, of course, Hurst cannot accept such an argument from vehicular cyclists. Therefore, he ignores the mandatory-bike-path-law and the mandatory-bike-lane law. Hurst considers only motorists: "Tantrums like this flare up from time to time among folks who have no understanding of the history of cycling in America or the needs of utility cyclists. But they find out soon enough that cyclists are entrenched on the public roadways. ... So far, however, the fears of the bike path haters have not been realized. There is no widespread organized movement to remove cyclists from the nation's existing roadways."

Earlier on, Hurst has accused vehicular cyclists of failing to get these discriminatory laws repealed, so that now he has to ignore their continuing existence. And, although since Hurst first wrote, there is now an increasing demand for bicy-

cle sidepaths and cycletracks, with surely the demand that cyclists use these.

240 Epilogue: Of Bicycles and Cities

City cycling is really living

"it becomes apparent that unpredictability, chaos and madness are some of the most important cogs in the city's machinery. The deck is stacked with jokers. There is a ghost in this machine, and it appears to be stupid and/or drunk...."

"The patient observer will not fail to notice that the messy reality of the Real American City does not coincide with the tidy vision of it that has been offered over the decades by some of the grand, old wise men of cycling. There is a city governed by order: white lines, laws, and foregone conclusions. In their city, cyclists need only obey a few simple principles to get along successfully. There is just another dream city, and not a very exciting one at that.

"The masterful urban cyclist finds him- or herself in a strange sort of dance, moving to all those drummers. There is no single principle that will see us through. But we have much more powerful tools at our disposal: timing, flexibility, and flow. Freedom. A successful, safe ride through American traffic is not an exercise in rule following, but a beautiful piece of interactive performance art."

There we have it all. Hurst proclaims that Hurst cycling, for which he offers no useful instruction, following no laws and no principles, but which he says uses timing, flexibility, flow, and freedom, to do whatever appears momentarily expedient, is safer and better than following the rules of the road. There it all is, absence of evidence and all, and no matter how much it contradicts the evidence.

3 Conclusions From Hurst's Arguments

American policy regarding bicyclists has always allowed them to do as they want, just so long as they keep the road clear for motorists. Most people probably regard this statement as unduly harsh and thoroughly inaccurate. However, it states the necessary result when cyclists are never trained to operate as drivers of vehicles, using the excuse that they are incapable of obeying the rules. This policy then resulted in bikeways with their laws to keep cyclists in line. Bikeways and bikeway laws then persuaded those few

cyclists who had always obeyed the rules to provide the scientific justification for obeying the rules.

Hurst has combined cyclists' disregard for traffic laws, engendered by American policy, with the obvious fact that most cyclists have adult capabilities, into a system of using adult skills to gain speed advantage by disobeying the traffic laws.

One would think that establishing a new system of operating in traffic would require a description of its rules of operation. However, Hurst provides no rules at all beyond quoting the most basic standard rules of using the proper side of the roadway, staying out of the door zone, and using destination positioning when approaching intersections. Instead, he describes his system in terms of timing, flexibility, flow, and freedom.

Hurst therefore has to portray vehicular cycling as being as slow as the motor traffic through which he speeds. To do so, he invents a description of vehicular cycling that depicts it as such. However, producing such a portrait requires a description that is exaggeratedly inaccurate.

One would think that if traffic operation were orderly, then it would be appropriate for cyclists to join in this orderly operation. To prevent this obvious deduction, Hurst has to describe traffic operation as chaotic and unlawful, operating by mysterious laws not known to traffic engineers.

If Hurst's system were not "safe", it would have no credibility. The evidence that exists shows that obeying the rules of the road is safer than disobeying them in the typically incompetent manner. So Hurst claims that his system of skillful disobedience is "safe". However, he can produce no data to show this, and his recommendations as to how to achieve safety conflict with the standard methods of safety engineering.

Because Hurst aims to increase bicycle transportation, his target market is the typical American, with his belief in cyclist inferiority and fear of traffic. With this market, Hurst dare not challenge its beliefs. Therefore, Hurst repeatedly advises readers to use bikeways whenever they want, despite the fact that Hurst knows that bikeway use is more dangerous than competent roadway use. Furthermore, Hurst dare not say that his system always works, because readers would discover instances in which they were still frightened of traffic. Therefore, Hurst repeatedly advises readers to go out of their way to use easy-traffic roads instead of roads on which readers find the traffic difficult. Furthermore, Hurst caters to the

fear of same-direction motor traffic by advising cyclists to be careful to avoid arousing the anger of same-direction motorists.

Unlike many bicycle advocates, Hurst does not openly talk in environmental terms. However, he boosts the bicycling cause by expressing dislike of motor traffic and its effects on urban pattern. He repeatedly refers to cyclists having to fight with motor traffic. When it comes to the effects of motoring on urban life, Hurst expresses all the popular superstitions but, apparently aware that this is a controversial subject, he rather sits on the fence.

Hurst has tried to combine a cheerful cocking-a-snook at traffic and traffic laws through the application of superb skill with the feelings of inferiority and fear, and only normal ability, that exist in his audience. Since this does not appear to be a program that attracts non-cyclists or casual cyclists, it has probably not significantly increased the number of cyclists. Its attraction appears to be to existing cyclists, but what proportion of cyclists have adopted it, and whether or not it has increased their use of bicycle transportation, is unknown as yet.

One should consider the possible effects of Hurst's program on both traffic operation and public policy. Up to this time, American society has tacitly allowed cyclists to disobey the traffic laws, except those intended to keep the road clear for motorists; cyclist disobedience has been an open secret. But Hurst's program is open defiance of the traffic laws, together with the claim that even motor traffic does not operate according to the laws. Would society tolerate such an attitude, if it were recognized? I rather doubt it. I think that if this were recognized, society would crack down on cyclist behavior. Even when considering the official desire to persuade motorists to switch trips to cycling, I think that policy makers would consider the possible effectiveness of Hurst's appeal against the associated traffic disruption and conclude that either bikeway cycling or vehicular cycling would be more acceptable.