

Epistemic Viciousness in the Martial Arts

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When I was eleven, my form teacher, Mr Howard, showed some of my class how to punch. We were waiting for the rest of the class to finish changing after gym, and he took a stance that I would now call shizentai yoi and snapped his right fist forward into a head-level straight punch, pulling his left back to his side at the same time. Then he punched with his left, pulling back on his right. We all lined up in our ties and sensible shoes (this was England) and copied him—left, right, left, right—and afterwards he told us that if we practised in the air with sufficient devotion for three years, then we would be able to use our punches to kill a bull with one blow.

I worshipped Mr Howard (though I would sooner have died than told him that) and so, as a skinny, eleven-year-old girl, I came to believe that if I practised, I would be able to kill a bull with one blow by the time I was fourteen. This essay is about epistemic viciousness in the martial arts, and this story is an illustration of just that. Though the word ‘viciousness’ normally suggests deliberate cruelty and violence, I will be using it here with the more old-fashioned meaning, *possessing of vices*. Vices (such as avarice, alcoholism and nail-biting) are common, and most of us struggle with a few, but ‘epistemic’ means ‘having to do with knowledge and the justification of belief’ and so *epistemic* viciousness is the possession of vices that make one bad at acquiring true beliefs, or give one a tendency to form false ones. My eleven-year-old self possessed the epistemic vice of gullibility and hence showed a streak of epistemic viciousness, which led to the formation of a false belief.

Other kinds of epistemic vice can lead to us failing to form true beliefs when we ought to. Consider the internet-surfing karate-sensei who stumbles upon an article claiming that chocolate milk is better than water or sports drinks for promoting recovery after strenuous exercise, and describing an experiment using stationary bikes performed at the University of Indiana, purporting to support this claim. Surfing Sensei is a skeptical guy; he is aware that the fitness industry is fuelled by fads and lies and he long ago developed a vocal blusteriness in response to fitness advice: it is all nonsense designed to make money. He often bangs on about this to his students: all this stuff about eating egg-whites and proper form and recovery and cross-training and what-not is stupid. If you want to get better at running, you’ve got to run more, and if you get thirsty when you’re cycling on a stationary bike, drink water; it’s free, and nothing

will make you better at cycling—except more cycling. So Surfer Sensei doesn't even consider the results of the experiment at the University of Indiana. In this case the corruption of the fitness industry has driven Surfer Sensei towards a different epistemic vice, if you like, the opposite vice from gullibility: close-mindedness. He has a tendency to ignore certain kinds of evidence which would lead an epistemically virtuous agent to form a new belief.

Karateka, and practitioners of the Japanese *gendai budo* (modern martial ways) in general, like to extoll the virtues of character that training in a martial art promotes. Yet whatever the moral virtues of the well-trained budoka, it seems to me that the culture of training in many martial arts actually *encourages* epistemic vices, including both close-mindedness and gullibility, but also unwarranted epistemic deference to seniors and historical sources, lack of curiosity about important related disciplines and lack of intellectual independence. In a nutshell, the question I will be trying to answer is this: why are so many of us in the martial arts still eleven-year-olds when it comes to forming beliefs?

Beliefs in the Martial Arts

What kind of beliefs am I talking about? I'm mostly interested here in the *martial* parts of the martial arts—the teachings that pertain to fighting and self-defence, as opposed to those that pertain to competing in a sporting tournament, or to how one ought to live one's life. Some of these beliefs are about particular techniques, such as (and I make no claim here about whether these examples are true):

- that your opponent's roundhouse kicks are more dangerous whilst you are closing on him or her, than they are once you've closed.
- that when fish-hooking the mouth, it is important to avoid being bitten.

And some beliefs will be about the interaction between certain techniques and the strategic situation more generally:

- that slapping the ground with your arm when falling is more risky when you are outside on uneven ground than it is when you are on nicely sprung tatami
- that kicks to the head are easier and less of an invitation to a tackle when your opponent is situated downhill (or downstairs) from you.

And then there will also be beliefs about related topics, such as training, physical fitness, anatomy, fight-psychology and history:

- that when you visit another dojo it is polite to try to fit in with their customs
- that at the beginning of a fight you'll burn though all your blood sugar and can expect to feel exhausted

- that when people talk about knee-dislocation they often just mean that the patella has been displaced.
- that Anko Itosu was never in a fight, but Miyamoto Musashi and Choki Motobu liked to get in three before breakfast.

Learning a martial art is not merely a matter of acquiring true beliefs and discarding false ones. We learn skills, gain balance and strength (and broken fingers), develop muscle memory and proprioceptive abilities, and learn reactions and instincts for timing that can be tricky to put into words. But just because these things are hard to describe doesn't mean that we don't also have beliefs about them. I can believe that *that thing* that I do, or *that way* of moving, or feeling, or tensing, or waiting or responding (kind of pointing at them in my mind) can have *that effect* (good or bad). Inevitably, as I acquire skills I acquire beliefs as well.

But people acquire *crazy* beliefs in the martial arts. We've all heard the stories about martial artists who believe they can kill someone without touching them using just their chi, and read internet comments from kids who think that ninja nerve-strikes are banned in UFC on the grounds that they are "too deadly." (A glance at the UFC rules will debunk that one.) Harry Cook's multipart articles on the concept of ki in *Classical Fighting Arts* in are a chronicle of budo gullibility and include the horrifying description of a 17-year-old boy who attempted to stop a fast-moving train by taking up a kung fu stance in its path. But it isn't just lunatics, kids and far-off strangers who pick up odd beliefs. Just last week I was on the way home from a judo class with a friend—a senior judoka and university student—who insisted that although there was nothing wrong with lifting weights, strength was unimportant in judo, and it wouldn't help one to become a better judo player. To this the appropriate reply is of course, unprintable. My friend has seen plenty of examples of the value of strength in judo, has done hours of strength-conditioning in a judo dojo where they've installed a weights room upstairs, and despite copious experiential data in support of the contrary hypothesis (the kind of data that can read off three minute newaza (groundwork) sessions with someone 50 lbs heavier than yourself) he still somehow believed it when he was told that strength isn't at all important in judo.

Judo is an art in which there is relatively little room for pretence; in randori (free practice) either you manage to throw your opponent, or you don't. In newaza either you escape from your opponent's hold or you don't. So if this belief manages to survive in the poor soil that judo offers, it isn't surprising that it thrives in arts, such as aikido, where there is usually less competitive randori, and more yakusoku kumite (pre-arranged sparring). One particularly bizarre story from my own experience involves a young male karateka whose natural physical makeup and judo training had made him unusually strong. Really, *unusually* strong—this is the only time I have heard of a karate club having to buy thicker makiwara because a *beginner* was routinely snapping them by accident. But after a few years off, the man began training with a local branch

of the Ki Society, who denigrated the importance of his strength. He returned to us stripped of much of his muscle-mass, convinced that there was a kind of disreputable immorality associated with physical strength, and that the main way he could improve his ability to defend himself would be to let his muscles atrophy and develop his ki.

Why are there so many fantasists in the martial arts, as compared to other activities? And there are; you won't find many sprinters or removal-men who would tell you that strength doesn't matter to their chosen tasks, nor will you find power-lifters who think they can move the bar without touching it or engineers who specialise in ki-distribution.

On going to the dojo like you're going to church

I suspect that one piece of the puzzle is that a lot of people treat their martial art as sacred. Not just special, and important and worthwhile—like, say, a vocation—but actually like a religion in which their sensei is the agent of the founders on earth, infallible on all matters martial, the writings of the founder are treated as the word of god, and the dojo is where you go at regular intervals to atone, standing, kneeling, and muttering all the right phrases. Members feel guilty if they don't go, and risk being regarded as morally deficient if they leave. Minor infractions of the social and dress codes are moralised; having red toe-nails in the dojo is like going to church in a mini-skirt and halter-top—you can do it, but it's no way to get into the choir. The students of other martial arts are talked about like they are practicing the wrong religion and people cite the fantastic deeds of those who went before them as evidence for their faith in the arts.

These similarities shouldn't be too surprising, because in religion, people hope to find something that will satisfy their desire for the special, mysterious and meaningful in their lives, which is exactly what some of us hope to find in the martial arts. But though the sanctification of the dojo isn't particularly surprising, it provides a clue as to how some of the wackier beliefs find fertile ground in the minds of martial artists: people who are hungry for something special—and that's all of us to some degree, but perhaps it applies especially to people who are hurt or dissatisfied with their lives—are more likely to be suckers, because strong desires make people vulnerable. If you are *very* hungry for something special, you might search all your life and die disappointed, or you *might* eventually give in and satisfy the desire by lowering your epistemic standards, so that you come to believe—falsely—that you've found something that exotic already.

In addition to this, the tendency to treat your martial art as sacred seems to encourage a superlative style of thinking according to which the art and the teachers aren't merely good, but are *the best anything or anyone can possibly be in any respect one can think of*. Some people end up believing, for example, that karate is not merely a good workout, but *the best possible physical exercise anyone can partake in*. I came across an example of this in the Journal of Asian Martial Arts a few years ago. I don't mean to pick on the writer as an

exceptionally bad example of what I mean, just a convenient one who happened to express the ideas in a particularly prominent place. The writer, discussing a book on yoga for martial artists, began by writing:

It is difficult for this reader to understand why anyone who is practicing karate would ever need or want to practice yoga to help their karate. **Is something lacking in the study and practice of karate that warrants turning to another form of exercise to accomplish karate's goals?** It is highly doubtful to this reader...

Karate, practiced in isolation, tends to overdevelop the lateral quadriceps compared to the vastus medialis and adductors, making the patella of many karateka a bit frog-eyed. It over-develops the chest, anterior deltoids and triceps with respect to the back, posterior deltoids and biceps, contributing to poor posture and a tight chest. Unbalanced leg muscles and sweeps are a nasty combination, and so are insufficient development of the rotator cuff and repeatedly having to receive ikkyo (a technique that involves manipulating your opponent's body by manipulating their arm.) Admittedly, I am assuming that getting injured—especially things like knee and shoulder injuries that often linger on for years—is no way to accomplish karate's goals. But if you'll grant me that, then what we have is a reason to add something to karate from the outside, by giving new karateka a gentle push in the direction of the power-rack and the pull-up bar. I take my claims here to be unexceptional, though I'm sure they'll offend the Orthodox. But right or wrong, it won't be possible to dispute them reasonably by assuming that karate-ness is next to godliness, and ignoring anything that comes into conflict with that.

The problem of investment

Not everyone treats their martial art like a religion, but another, more inevitable problem for martial arts epistemology is that those who already have beliefs in the area tend to have a lot invested in those beliefs. The people whose testimony we are most likely to believe have inevitably put years of effort into perfecting their techniques.

The problem that this creates can be made intuitively obvious by an story. Suppose that Kenji has been studying shotokan karate for 20 years. He had a lot of trouble with a particular style of side-kick early on, finding it hard to make his knee do what his teacher's knee did, but one day, his elderly teacher took him aside and showed him how using his hip-flexor and obliques in a slightly different way made the kick much easier to perform. Kenji was impressed and since then he has been able to execute a kick which closely resembles that of his teacher. Kenji eventually ended up teaching karate and whenever he has a student who struggles with the kick in question, he takes them aside and teaches them his teacher's trick, feeling proud that he is able to pass on this information, and contribute to his students' progress. Very occasionally a new student will ask him what the kick is useful for, and, like his teacher before him, he tells them

that it is used in competition, but that its *real* use is in disarming an attacker by kicking the knife from their hands. Kenji subscribes to the following belief: this particular side-kick is an important and effective karate technique. Kenji has a lot invested in this belief, and it would be painful to give it up: he struggled for years to master the technique, and if it is not a useful technique, all that will have been wasted. He taught the technique to many students; if he comes to believe that it is not an effective technique, he would have to admit that he had misled them, and that would be very embarrassing.

Down the pub one night, a lot of evidence is presented to Kenji that goes against his belief that the kick is an effective karate technique: friend A, a physiotherapist, observes the kick and tells Kenji that the technique will be detrimental to the stability of his and his students' knees. Friend B, a professional cage-fighter, argues that the technique is useless and points out that no-one has ever used it in a full-contact fight, and that's because you can't get any useful force behind it, (except against your own ligaments) and Friend C, a historian of the martial arts, argues that the kick is not to be found in any of the precursors of the shotokan kata. It is, he argues, a late addition to the style that probably crept in by mistake. Finally Friend D, an expert in knife-fighting, tells Kenji that the disarming technique simply wouldn't work, and that he has underestimated the danger of closing on a blade, and the lengths that good knife-fighters instinctively go to to protect their blade-hands. Typically, he says, a fighter would have little trouble blocking the kick with the other arm or a leg, and would then immediately counter with the knife. Game over.

That's a lot of evidence and expert testimony to crop up in one night, but Kenji *really* doesn't want to give up his belief that the kick is a good technique. He gets in a horrible argument with his friends at the pub, but on the way home realises that it is actually easy to maintain his belief in the effectiveness of the kick. First, he should have told A that health is one thing, and martial ability is another; perhaps training in karate will get you a few injuries over the years, but we're not training for health, but to be able to fight. Then he should have told B that cage-fighting is stupid and immoral (so there), and obviously doesn't involve knives. Friend C is a smart guy and so he should have expressed interest in his historical findings, but pointed out first, that it is not always easy for an outsider to interpret kata, and then he should have said that karate is a living art and it is natural that when new techniques are discovered, they are added to the curriculum. The Boston Crab wasn't originally a part of judo, but that doesn't mean that it is not an effective judo technique. Finally, for Friend D, who claimed that the disarming technique wouldn't work, he plans the response: you just aren't doing it right. Our kick is difficult and takes many years to perfect—no-one said the martial arts were easy. If you train in it long enough, it will work.

None of these answers is really sufficient, and some of them are outright irrelevant, but Kenji isn't trying to convince his friends, but simply maintain his own mental coherence whilst retaining the belief in which he has invested so deeply. It is hard to imagine someone without Kenji's level of investment—say his brother Tenji—maintaining the belief in the face of such evidence. Suppose

Tenji has taken on the ambitious project of constructing a martial art from scratch and so far he has never so much as spent a minute practicing or teaching any techniques, he just wants to design the most effective martial art possible. Tenji hears about a new throw, and is considering adding it, but then is told by experts that the throw is dangerous for the lower back of the person performing it, wouldn't work in a sport fight, it isn't a traditional martial arts technique, but something that was invented yesterday by the guy down the road and finally that the throw isn't a technique which should be used martially, because it involves allowing your opponent into your shikaku (dead angle) which is too risky. It's absurd to think that Tenji would talk himself out of accepting all these points and add the technique to his new art. Why would he? *He* doesn't have any reason to.

The psychologist Leon Festinger studied what happens when a belief that someone has invested a lot in comes into conflict with the evidence. He studied the members of a cult founded by Marion Keech, who believed that an alien called Sananda had spoken to her through a "vibration" and told her that the earth would be flooded on December 21st 1954, though all who believed in Sananda would be saved by a spaceship at midnight that day. Cult members invested in their belief. They sold their houses and cars, packed for the journey and at the last minute removed all metal, including zippers and bra-fastenings, from their clothing when this suddenly proved to be important. But December 21st came and went, and they were presented with powerful new evidence when the floods and Sananda's spaceship failed to appear. Festinger was interested in how the group would respond to this evidence and it turned out that they did just about anything *except* revising the belief in which they had so heavily invested. They changed their previously secretive behaviour by opening up to reporters, they interpreted next day's earthquake in Italy as confirmation of their beliefs, and they came to believe that the actions of their cult had somehow saved the world. The opening up of the cult to reporters is especially interesting, as Lauren Slater writes in *Opening Skinner's Box*:

...it is precisely when a belief is disconfirmed that religious groups being to proselytize, a sort of desperate defense mechanism. The disjunction between what one believes and the factual evidence is highly uncomfortable ... Soothing can come only if more and more people sign on to the spaceship, so to speak, because if we are all flying this thing together, then surely we must be right.

So be especially wary if your teacher responds to new evidence against the value of a technique by proposing to write a book on it...

Trust Me, I'm your Sensei

The trouble is, that when you're just starting out, you don't have much choice. A martial art can't be learned from a book; you have to learn from someone who already knows what they're doing, and so, depending a little on where you

live, if you find a single club in a single art which has an experienced teacher and lots of adult senior students who look strong, and can do stuff that you'd like to be able to do, then that club might well be your only decent bet for learning about the martial arts.

Deference to one's teacher is both traditional and expected in many training environments, but without a common background of Confucianism to ground such deference, contemporary dojo interpret the idea in many different ways. Some clubs are run like military boot camps, (drop and give me 20 maggots! Bow to your sensei!), some like an extended family in which rank is *never* pulled, because it would be beneath the dignity of those who have rank to bother, and some clubs seem like a secret society where you never quite know where you stand or what the rules are (is sensei not criticising my footwork any longer because I've got it right now, or is it because he's given up on me? I wonder whether it's ok to ask him? Maybe he'd be annoyed and *that* would make him give up on me.)

Regardless of the cultural norms in your dojo, and whatever was expected in traditional China, Okinawa, or Japan, it does seem that respect—respect beyond the normal respect accorded to every human being—is something that is appropriate for anyone who knows a lot about the martial arts and who is sincerely trying to teach you some of what he or she knows. How do you balance that respect with the demands of being a vice-free epistemologist? If your sensei says something that you think is obviously false ('you can't kick me from there'), it doesn't seem very respectful to answer 'sure, I can, look!...there!'

It seems clear that respect for your sensei can require that you not challenge every alleged falsehood you hear from his lips. But there's a lot of distance between that and believing everything that he says. The epistemically virtuous are cautious in what they *believe*, but that won't normally get in the way of decent behaviour. You can show respect by keeping quiet when it is appropriate and, within your own mind, you can show respect to someone by giving serious weight to the fact that *they* have made a claim. Whereas when your five-year-old cousin says "you can't kick me from there", you might smile and walk by secure in the belief that he is wrong, when someone that you respect as your teacher says it, and it still seems obviously false, respect demands that you try to understand and resolve the tension. Depending on the personality of your sensei, you might be able to ask him about it and get a serious answer—even if you have to wait until you get him alone. Maybe you'll find it convincing, maybe not—and if not there's no need to go on and on about it—but either way you've taken both your teacher, and your own commitment to the truth, seriously. This is the best case scenario. Maybe the atmosphere in your dojo is more formal than this, or your sensei is a bit touchier about being challenged—in that case you might need to approach a senior student or try to work it out for yourself. Again, you might be able to, or you might decide that he was really just wrong about this. But either way, no genuine requirement of deference to your sensei requires that you believe something false or unjustified, just as no genuine requirement of deference to your sensei could require that you do something morally wrong if he asks you to. You can no-more abdicate your

responsibility to believe truthfully than you can abdicate your responsibility to act ethically.

Deference to one's teacher becomes an epistemic vice within a group if there is a blurring of the line between justified epistemic deference (such as taking the fact that sensei said X as serious reason to consider whether X more carefully) and unjustified epistemic deference (taking the fact that sensei said X as conclusive proof that X, which makes all other evidence irrelevant) and the result can be that false beliefs are perpetuated throughout the history of the group—even in the face of *new* evidence against them.

I trained with one karate group, for example, among whom it was the accepted common wisdom that karateka shouldn't lift weights, as sensei (the 80 year old head of the organisation in other city) had once said that this would make them too 'tight'. The recent literature on strength as it relates to flexibility, speed, anaerobic conditioning and injury prevention was simply ignored in the face of his word. Similarly, many otherwise excellent martial arts teachers persist in using the warm-ups that *their* teachers taught them, thirty or forty years ago, including lots of static stretches and with little regard for the difference between stretching muscle, and stretching the things that are better left unstretched. I suspect that if it weren't for the martial artist's tendency to over-defer to his sensei and consider other evidence irrelevant, there'd be many stronger, fitter martial artists around, and fewer fantasists with "unlucky" or "inevitable" injuries.

Deferring to History

Just as there is a tendency to defer to seniority in the martial arts, so there is a tendency to defer to history. When a budoka (follower of the martial way) says "Kentsu Yabu said you should practice your kata thirty times a day", there is a good chance that he isn't just relating an interesting historical fact, but is actually telling you to practice your kata thirty times a day.

Such an inference—Famous Historical Master said such and such, therefore you should believe such and such—wouldn't pass muster in other areas. If you tell a long-distance runner that Pheidippides, the original marathon-runner, said that athletes should not spend time thinking about their equipment, but should focus their minds on the gods, he might say something like 'oh yes, that's interesting' but he wouldn't infer that he should stop replacing his running shoes every 400 miles. Runners think that the contemporary staff of *Runner's World* know more about running than than all the ancient Greeks put together.

And it's not just running, or other physical activities, where history is kept in its place; the same is true in any well-developed area of study. It is not considered disrespectful for a physicist to say that Isaac Newton's theories are false. Newton is a giant among physicists, but since physics is a serious endeavour, epistemic deference to historical figures is not required, and the fact that Newton, or Einstein, or Aristotle believed that such and such is not regarded as a reason to believe that such and such. (It's probably worth noting that amongst crank physicists the authority of certain dashing figures—especially Einstein,

Bohr, Feynman and Hawking—is given more weight, and they may write as if they expect the ‘Hawking thinks such and such, therefore such and such’ inference is likely to go, just as I occasionally meet people at parties who think ‘Chuck Norris thinks such and such, therefore such and such’ is a persuasive argument in the martial arts.)

But forget Chuck Norris, and consider Miyamoto Musashi and Takuan Soho, Gichin Funakoshi and Kenwa Mabuni, Jigoro Kano and Kyuzo Mifune, Morihei Ueshiba and Takeda Sokaku, Yim Wing Chun and Sun Tzu. In the martial arts—even in the *gendai budo*, which aren’t all that old—founders, ancient writers, traditions and historical masters are treated with such epistemic deference that their sayings often go unquestioned even when they conflict with each other, with common sense, contemporary science, and with other important sources of information—such as one’s eyes.

I am not suggesting that the founders and practitioners who went before you do not deserve respect. But again, respect never requires inappropriate epistemic or moral deference. I’m very fond of the writings of Gichin Funakoshi and I find it easy to respect him; in a discipline where many practitioners are neither gentle nor modest, *Karate-do: My Way of Life* is an extraordinarily gentle and modest autobiography. But despite Funakoshi’s stature in karate, and my admiration for him, it would be daft for me to believe everything he says, because he says some things that I have *very* good reason to think false. For example, he writes that karate can cure any illness except for physical injuries, and:

If a man who runs a temperature practices karate until the sweat begins to pour from his body, he will soon find that his temperature has dropped to normal, and that his illness has been cured.

Fever is a symptom of many different medical conditions, including influenza, smallpox, HIV, lupus and the common cold. Not all these fevers can be cured by doing karate, which is why, when your six-year-old wakes up with a temperature of 104F (42C) degrees, you call the doctor instead of handing her the kongoken (a *very* heavy piece of chain-link used for strength training, especially in the goju-ryu style.) Funakoshi’s error is entirely excusable if his access to this kind of medical knowledge was restricted—but I could not be similarly excused if I believed what he wrote.

Poverty and Vice

How did we get to be so vicious? Why aren’t people sanctifying the shot-put, and turning their wasted marathoning backs on Amby Burfoot when his advice is contradicted by the original marathoner? Another part of the puzzle is that we martial artists struggle with a kind of poverty—data-poverty—which makes our beliefs hard to test.

Learning about human anatomy is straightforward: get hold of a copy of the latest edition of Netter’s *Anatomy*, and start reading. If you want to know

more, or you become skeptical of the information presented, you can visit a lab and observe or take part in the dissection of cadavers. Like those who have gone before you, you can get out a scalpel and check for your self.

But, again, you can't learn karate or white crane boxing from a book, and there are a lot of martial beliefs that we do not get to *test* in such a direct way. Unless you're unfortunate enough to be fighting a hand-to-hand war you cannot *check* to see how much force and exactly which angle a neck-break requires, or learn from experience about the psychological effects and stopping power of an eye-gouge.

In an epistemically ideal—though morally horrible—situation, we'd be able to test the effectiveness of techniques by doing them in realistic set-ups over and over again. How many times out of 100 does your no-holds barred *nukite* to the throat result in death within 5 minutes? 20/100? 80/100? What's the most likely alternative outcome? Bruising? Scratching? Coughing? Unconsciousness? Internal bleeding? Partially crushed trachea? Escalation? Can subjects partially armour against it or roll with it? These questions have answers, but for good ethical reasons, we can't get at those answers by direct testing, and though martial techniques do get used 'for real', this rarely happens as part of a controlled experiment.

Our inability to properly test the answers to these questions has a knock-on effect. If you can't test the effectiveness of a technique, then it is hard to test methods for improving the technique. Should you practice your *nukite* (spear hand) in the air, or will that just encourage you to overextend? Is it helpful to practice 1000 a day, or would it be more effective to practice three sets of ten with good focus against a pad? Our inability to test our fighting methods restricts our ability to test our training methods.

To be fair, I'm overstating my point a little. Judoka regularly attempt to throw all sizes of other judoka who are resisting being thrown (though only resisting in certain acceptable ways.) Sometimes they succeed, and sometimes they don't, but either way, both *uke* (person receiving) and *tori* (person throwing) learn something. Moreover, as Robert Miller has impressed upon me, we can test and practice aspects of our techniques without testing all aspects of the technique at once. I can work on the timing and smoothness of my throw, but alter the trajectory at the end to allow my partner to fall safely. I can work on the positioning of a side-thrust kick to the knee with my partner, but leave the power for a time when I'm kicking a pad.

Nevertheless, the fact that so few karate claims can be straightforwardly tested, with the results published in peer-reviewed journals, makes it harder to challenge the beliefs that are held solely out of deference to history or tradition, solely out of a tendency to exaggerate the worth of the things we hold sacred, or solely because we have invested so heavily in them that it hurts to give them up. Just imagine if the situation was as bad in anatomy. That is, imagine a world in which doctors insist that the blood circulates, but forensic anthropologists scoff at the very idea; undertakers swear the heart is in the chest, but physiotherapists insist it is in the *hara* (abdomen), and sports scientists claim it is an amorphous system spread throughout the core. No-one thinks you can learn true anatomy

from a book, and instead you have to train with one of these groups, all of whom will insist that you listen to them lecture whilst running intervals and being whacked with a shinai (bamboo practice sword) by their research assistants. Medical imaging techniques were never developed and it is illegal to cut open a cadaver. Only then would the data poverty in anatomy be as bad as it is in the martial arts.

But the real problem isn't just that we live in data poverty—I think that's true for some perfectly respectable disciplines, including theoretical physics—the problem is that we live in poverty but continue to act as though we live in luxury, as though we can safely afford to believe whatever we're told, as though we don't need to make serious efforts to keep ourselves honest in the face of our own investment and longing for enchantment.

So am I advocating scoffing at the word of your sensei or senpai? No. That's not being an epistemically responsible agent, that's just being an asshole. All the old constraints on your behaviour still apply. I'm arguing for the importance of being cautious in what you *believe*. In the words of the Buddha, copied from their place of honour on the wall of Harry Cook's dojo:

“Do not believe on the strength of traditions even if they have been held in honour for many generations and in many places; do not believe anything because many people speak of it; do not believe on the strength of sages of old times; do not believe that which you have yourselves imagined, thinking that a god has inspired you. Believe nothing which depends only on the authority of your masters or priests. After investigation, believe that which you have yourselves tested and found reasonable, and which is for your good and that of others.”

Why it matters

Suppose I'm right, and the martial arts are, as a result, rife with epistemic vice. Is that really so bad? After all, epistemic vice is not moral vice and a person might combine his gullibility with a gentleness and respect for others that is morally impressive. Moreover, epistemic vice is common. Most of us know intelligent people who have blind spots on certain topics: the parent who fondly believes in his child's unrecognised genius, the school-friend who convinces herself that the most popular guy in the class would love her if he wasn't so insecure. One recent study found that men and women who are married often overestimate the degree to which their spouse will be considered attractive by a random panel of judges.

The last case, in particular, might tempt us to think that some epistemic vices are sort of cute. But it would be stupid to believe that epistemic vice is acceptable in the martial arts, since this is an area where it is morally important to have *true* beliefs, and not just cute ones. The question of whether you can stop a train with your ki, or whether a stretch will be detrimental to your students' health, or whether a technique could kill someone—these are not questions on which you should want to be endearingly mistaken.