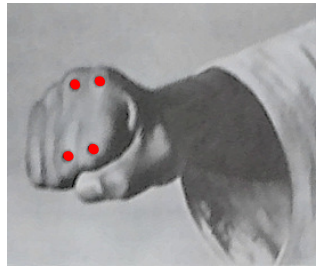


Thoughts about fists in the martial arts

As I interact with sensei from various “styles”, I notice that they use a variety of fist “shapes”. Differences appear in three main areas: What are the points of striking contact, what is the position of the fingers, and what is the position of the thumb? In addition, I’ve been thinking about wrist and arm positions.

Striking Points

My copy of Funakoshi’s “Karate-Do Kyohan: The Master Text” is the second edition from 1983. The first English edition was 1973. The English edition is a translation from the original in Japanese (I think from 1936) by Funakoshi’s student and successor, Mr. Ohshima. This is thus one of the oldest written texts about the martial arts. This book contains several photographs of hand shapes used in Shotokan, including various knife hands and so on. The primary fist (*seiken*) for Shotokan karateka is shown in Figures 5 and 6 (page 17), reproduced here (I added color to the 4 dots):



I believe the model for this photo was Mr. Ohshima himself. There are many features in these photos that seem unusual to me. To start with, the side view (here, on the left) shows that the index finger is extended to the base of the thumb. It seems that this view still has many practitioners.

For example, this next image was taken from reddit about this particular index finger option. (https://www.reddit.com/r/karate/comments/tx71mo/funakoshi_in_karate_do_kyohan_1935_shows_a/?rdt=42604).

According to that discussion, this position for the index finger is common in schools based on Shuri-ryū/Shorin-Ryu/Kosho.

The discussion there reinforced some ideas to me that I had already been forming in my mind: that the various options for fists are really more about the relative size and shape of an *individual practitioner's* fingers and hand. This is true for my son, for whom the length of the distal phalanx of his index finger (the last phalange, under the finger nail) is proportionally longer than that of his other phalanges.



Some of the comments on Reddit were from people who found that positioning the index finger in this way relieved some issues they had experienced with more “traditional” finger positions. So, what is best for one student may not be best for the next student. Of course, as with all fist options, there are proponents of it from every level of karateka. Those supporting this index finger often claim the usual things: *their* way is either safer, or stronger, or both.

Back to Funakoshi’s text, the four red dots in the second image above (black dots in the original photo) indicate a flat plane of contact, with all 4 points intended to strike the target simultaneously.

This is in contrast with the majority of fist shapes that I've seen in other books (and of course on the internet). That is, virtually all other sources claim that contact should be with either the top knuckle of the index finger, or of the middle finger, or of both knuckles together.

So, this photo, from (<https://www.pinterest.com/pin/446771225510949390/>), is trying to indicate that striking happens with *both* top knuckles. The internet has an uncountable numbers of pictures like this. Yet, this photo is strange because it almost appears from the angle of the image that the second knuckle leads the hand as it punches. Possibly, that's just due to an unusual perspective created by the camera angle (also, I feel like the wrist angle here is not the best...).



Funakoshi's striking plane of four knuckle points relates to his extension of the index finger to the base of the thumb... since Funakoshi is recommending that we include *four* points of contact, these lower two points are clearly less firm than the upper two knuckles. Perhaps Funakoshi's fist is an attempt to shore up these lower contact points. In my "experiments", this position definitely seems to make the lower two knuckles more firm. Still, the extended index finger feels awkward to me, and I feel that using only the top (one or two) knuckles seems inherently more firm in the sense that they have fewer "moving parts" that could be damaged. But perhaps spreading out the impact over this larger four-knuckle area would indeed contribute some extra safety to the puncher.

Still on the topic of Shotokan, this photo (<https://www.udemy.com/course/a-beginners-guide-to-shotokan-karate/>) is also a shotokan fist... but this fist seems to be leading with the second knuckle rather than with a plane comprised of four knuckles altogether. And the index finger is not extended, either. But like Funakoshi's fist, the thumb is on the side of the index finger.



Other Finger Positions

Taking the extended index finger to the next level, we find this image of a fully formed fist at https://www.orlandokuntao.com/mf_punching.html. Instead of extending just the index finger, this karateka suggests that *all four* fingers be extended to the heel of the palm! My experience in trying this reveals that it creates an open gap between the fingers and the palm (i.e. a vertical space into which I might push a pencil). Since this teacher is only striking with his top (middle finger) knuckle, this space doesn't seem to matter: the fist doesn't feel *tight*, but it does feel pretty strong (to me).



Regarding non-Japanese martial arts, Bruce Lee's Jeet Kune Do "style", which is primarily Chinese in origin, has the thumb on the side. I couldn't find any discussion of striking points, and various photos show a "regular" index finger position curled underneath the thumb, too. But, I've heard that Mr. Lee struck with the knuckles of all 4 fingers, not just those of the index and middle fingers.



My copy of "Korean Karate: The Art of Tae Kwon Do" (1968, First edition by Duk Sung Son and Robert Clark) has several diagrams and photos of hand shapes (page 46), but strangely has no photos that show a close up of a "regular"

fist. The best image is found on the jacket and inner cover page. This image shows the thumb on the side, and also seems to suggest that the contact point is the first knuckle of the middle finger only... but it's hard to see, and the text doesn't comment on it.

Chuck Norris, Professional Middleweight Karate champion for six consecutive years and a Tang Soo Do practitioner (i.e., Korean), also had his thumb on the side.

Thumb Positions

While the vast majority of styles have the thumb placed on the side of the fist, Isshin ryu practitioners place it on top. I couldn't easily find any nice photos, but this interesting article

(<http://kojutsukan.blogspot.com/2012/12/our-hands-evolved-for-punching.html>) had the nice sketch shown here. I believe that this



position is also used in Tatsu Do. Additionally, and perhaps related, Isshin ryu punches are almost always vertical punches, as opposed to twist punches common in other styles. Virtually all Isshin ryu practitioners claim that this thumb position “strengthens the wrist to help prevent buckling at the wrist on impact” (<https://usadojo.com/the-history-of-isshein-ryu-karate/>). However, there has never been any scientific or systematic investigation of this claim. It seems like every Isshin ryu practitioner “can just feel that it *is* stronger”, and every practitioner from another dojo can feel that it *is not* stronger. I am thinking of building a device to test this quantitatively.

Wrist Positions, “vertical plane”

When I began studying karate, it seemed natural to me that the line across the knuckles should be approximately perpendicular to the line of the forearm. I no longer think that is best.

To think about this, I need to be more clear about what is meant by “the line of the forearm”. Consider this image:

I would define the line of the arm as the line from the elbow to the striking point. If we assume that the striking point is the first two knuckles, then the line of the forearm is sketched here in green. The magenta line is showing what I mean by the “line across the knuckles”. Notice that the green line seems to be “above” the centerline of the arm as it passes through the wrist. So personally, rather than strongly valuing the angle between the two lines, I now more strongly value the idea that the green line should pass more centrally through the wrist.



To achieve this, the wrist is turned slightly down (i.e., towards the little finger). As a side effect, I notice that the angle between the two lines is then considerably less perpendicular, but I still feel like it's a better wrist position because it seems like the compression on the wrist could not possibly be better.



Clearly, though, there's a danger of over-rotating the wrist position. In this third image, the line of the forearm is once again not centered on the wrist... it's passing through the edge of the wrist near the little finger.



I might also contrast this with a wrist position that's inclined "upwards" towards the thumb:



I see this wrist position (or even worse!) in several of the lower ranked students in my dojo. Notice that the line of the forearm doesn't even remain within the arm at all! Like all bad habits, it's difficult to correct once it's ingrained. I've heard some of my sensei try to correct this in a single student on multiple occasions, but the "muscle memory" is a serious impediment to change.

Wrist Positions, "horizontal plane"

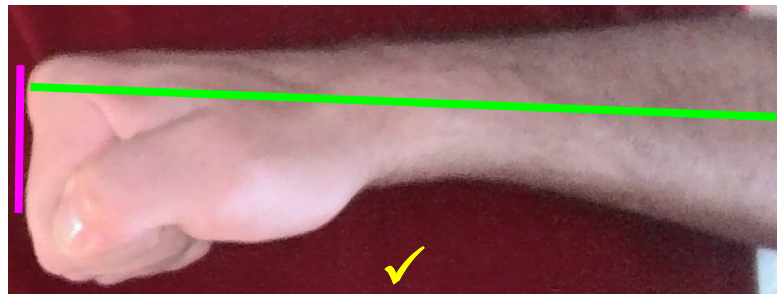
Since the (green) line of the forearm in these photos can be very off-center due to the "downward" rotation of the wrist, I also want to look at rotations of the wrist in the other plane.

Here, the wrist is more-or-less perpendicular to Funakoshi's 4-point plane of the knuckles. Again, this was my wrist position when I began studying karate.



However, the line of the forearm (again in green, passing from the elbow to the striking knuckles) is clearly *not* passing through the center of the wrist... it's closer to the "top" of the wrist. This suggests that a better wrist position would be to rotate the wrist towards the palm.

So, this image shows the same kind of thing with a slight rotation towards the palm. It looks to me like it would be even better if it was rotated towards the palm yet another degree or two... but in any case, the (green) line of the forearm looks better because it's more centered on the wrist.



I think getting *this* angle correct is more important than all the other issues, because this is the plane in which it is easiest to accidentally over-rotate and damage the wrist.