

Sword steel

Niku (hira-niku) and tameshigiri

The term 'niku' means meat and that's pretty much what it is: The meat on the bones of a sword. Niku or hira niku is the amount of convex shaping of the cutting edge of a Japanese sword.

I'm sure you've heard that some swords have no niku and other have a lot. But what is exactly its purpose and why does it seem such a big deal to many?

To fully explain this we're going to blow up the situation and have a look at both ends of the niku spectrum.

An object with a lot of niku is a wood axe. Not a sharp battle axe but the thing that is used to split blocks of wood for the fire place. It's heavy, can definitely take a beating but most important; compared to a Japanese sword it's blunt as a butter knife.

Looking carefully at a wood axe you'll notice that the edge has wide angle and a convex shape towards the opening for the handle. The shape of the axe have a strong sideways force to allow easy splitting of the wood.

The advantage for the axe is that the tool will stay useful due to its geometry and will force itself through an object by force. What you can't do is cut flexible objects that require piercing/slicing through a top layer such as a tomato. Of course this isn't surprising since the axe is designed to cut hard objects.

On the other side of the spectrum we have a straight razor or exacto knife. A thin, razor-sharp piece of metal which can do a perfect cut through paper. However because of its very slim geometry, it is very fragile and it's edge would probably damage upon impact on a piece of wood.

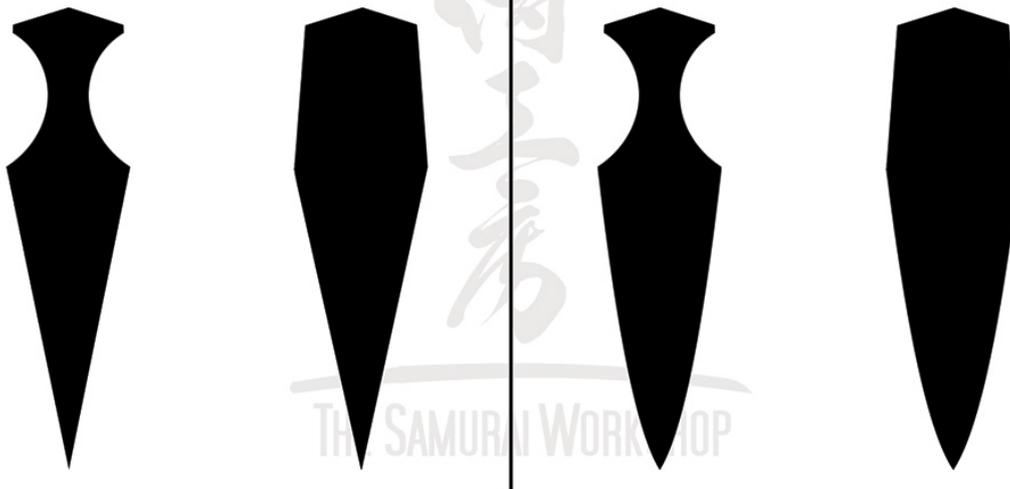
A huge benefit of the thin blade is that the first entry of the object you wish to cut is quite easy. The down side of a razor sharp thin blade is that it also will get blunt very easy.

We can conclude that niku is in inverse proportion with the razor sharpness of a blade.

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WITHOUT NIKU

WITH NIKU



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Niku on authentic antique Japanese swords

The presence of niku will strengthen the cutting part of a differentially hardened blade simply by adding more mass. A sword blade with straight edges simple will contain less steel than a sword blade with rounded edges.

However looking at the above example of razorblades and axes... can we conclude that niku and no-niku swords are different weapons?

That is extremely difficult to say.

It makes sense that a thin razor-sharp sword would not be effective against an armored opponent.

The edge would surely chip upon impact on nearly every part of the armor.

In a previous article 'Introduction to the history of Budo' we have learned that armored and unarmored combat have a different place in history.

Samurai schools from Azuchi-Momoyama period focused also on armored Kenjutsu while iaido schools from Edo period mostly taught unarmored sword techniques.

While each period in Japan has unique sword features, niku is not one of them.

A sword with much niku simply means that a sword has not been polished very often.

With every sword polish, the steel of the sword is reduced. By adding a little bit of meat to the cutting edge from the start, it will extend the life-time of a sword drastically.

The swords used in Edo period were often previously used in battle and have probably been polished quite a few times. Also the swords that still exist today are often over-polished and are more or less an anorexic version of what they once were*.

So the heavy and much niku containing sword versus the slim no-niku sword are exactly the same weapon. Merely a few polishes a part.

This doesn't mean that samurai have never expressed a preference for low-niku blades to lower

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URL: http://www.thesamuraiworkshop.com/university/content/1/55/en/niku-hira_niku-and-tameshigiri.html

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the weight of a sword. However a sword smith has many other options to lower the weight of a sword, rather than to do concessions on durability and polishing life-span.

So what type of blade should I use for Tameshigiri?

First you will need to determine what materials you will be cutting. The overall structure, thickness, mass and hardness need to be taken in account before choosing the sword with the appropriate amount of niku.

For most cutting targets a blade with niku will actually make cuts more difficult. Beach mats, tatami omote, milk cartons and water bottles are a lot more easy to cut with a flat edged blade. Slim swords without niku are an absolute pleasure to do your basic cutting. Fat (high niku) swords will NOT go easily through a beach mat and are prone to get stuck if your technique isn't optimal.

Niku becomes important when the objects you wish to cut are heavier, thicker and have a harder top layer. Which objects are we talking about? Mostly bamboo and makiwara bundles when talking about traditional targets. Untraditional objects in this group are branches, vines, wooden sticks and dowels etc.

Especially with heavy and solid objects you must be ABSOLUTELY SURE about the quality of your sword. This goes for the steel as well as the sword mounting.

The most extreme form of tameshigiri is probably kabutowari (helmet cutting). Cutting a 1.5 - 2mm thick steel plate is best done with a sword featuring extreme niku.

After all this babbling about a convex shape of the cutting edge, you may feel that niku is an extremely important factor in choosing your sword. However it isn't.

Bamboo can be cut with a no-niku blade and tatami omote can be cut with an high-niku blade. The quality of a Japanese sword depends a lot on the skill of the user.

What is important is that approach everything sword-related with care and never stop using your common sense. If you're not sure if you should do something, then don't.

Some quick tips for safe cutting practice: make sure that

1. your sword and mounting is in good condition
2. You've thought over and cleared the path of your cut
3. Consider what will happen if your sword slips or gets stuck in the cutting target.

A duel is won before the battle has started, not by headless advancing into confrontation :)

Stay safe!

*These Edo period swords were the main reference for the iaito than many of us are using now. In short we recreated over-polished Swords of 900 up to 1000 grams with a bo-hi (in koshirae).

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Unique solution ID: #1054

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Last update: 2014-03-18 17:06