

Malt Maniacs E-pistle #2012-04 ***By Oliver Klimek, Germany***

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Complexity In Whisky – Lost And Found

Why Whisky Had To Change Over The Past Decades

A very popular word used for describing a whisky with a multitude of flavours in tasting notes or reviews is *complex*. In recent years, I have grown to dislike it more and more for its negative connotations: complex, complicated, difficult to understand... not exactly an ideal way to describe an essentially positive feature of a whisky. But still this word is widely used to describe a very specific property, so I won't complain any further.

But more complex does not automatically have to mean better. To use a musical analogy, a symphonic orchestra with fifty musicians can create breathtaking sounds, but for some music a string quartet can be even more impressive. And of course complexity needs harmony too. Just like a symphony becomes a cacophony when the instruments are out of tune, a complex whisky with off-notes is less than delightful.

Old-time Whisky Complexity

Many people who have tasted old Scotch whisky (let's say vintages of the 1970s or earlier, blends and single malts alike) report about a special quality in flavour that seems to be lost nowadays. My own experience – while still fairly limited – goes into the same direction. Despite often feeling rather watery on the palate due to low bottling strength, there is a lingering feeling of densely interwoven flavours on the palate that just seems to caress the tongue forever.

Modern whisky often packs a flavourful punch with peat, sherry or bourbon cask aromas, but that special kind of complexity seems to be lost forever. They don't make'em like this anymore. But why?

An answer to this mystery may be found by looking at the developments in whisky production over the past decades.



Complexity Lost By Modernization

Even though the basic process of making malt whisky has been unchanged for centuries, the details of production have changed quite a bit over the past decades. New technologies have been introduced, and the progress in agriculture also has its effects.

Among the many factors contributing to whisky making I would like to point out two examples that illustrate these changes.

Complexity By Nature – Barley

There have been significant advances in the cultivation of barley over the years, and because of the differences, it is fair to assume that new varieties will yield a different kind of spirit than old ones.

Unfortunately the cultivation of new barley varieties is not driven by the desire to make better whisky. The improvement of agronomic properties is the objective in creating new hybrids:

- Harvest yield
- Resistance to disease
- Adaption to climates
- Dormancy (postponed ability to germinate)
- Spirit yield
- etc.

A very important factor for the distiller evidently is the spirit yield. The more alcohol you can make from a tonne of barley, the higher your profit. Essentially the spirit yield is defined by the amount of starch in the grain that can be converted to fermentable sugar and hence to ethanol. From 1950 until today, the spirit yield increased from about 350 litres/tonne to over 450. The most prominent barley variety from the 1960s to the 1980s was Golden Promise, in more recent times it has been Optic with new varieties being introduced on a continuous basis.

But what does a higher spirit yield mean for the whisky? As we all know, what makes whisky different from vodka (even when compared to new-make that has never been cask matured) are its 'impurities', that tiny amount of substances other than ethanol or water. While vodka tries to minimize impurities, whisky wants to make optimal use of them. This is also the reason why distilleries still use the massively ineffective pot stills for our malt whisky.

While ethanol is of course the direct product of the convertible sugars, the substances that turn the spirit into whisky come from rest of what is bubbling in the wash still. It is therefore only logical that if your barley gives you more ethanol in a litre of wash, you will end up with less of the other components:

- Starches not fully converted to sugar
- Sugars not fully converted to ethanol
- Other types of alcohol produced by yeast
- Carbonic acid from fermentation
- Carboxylic acids from fermentation
- Esters from acids and alcohols
- Aldehydes from intermediate reactions
- Proteins from the malt
- Proteins from the yeast
- Fat from the malt
- Caramelized sugar in directly fired stills
- Maillard browning from starch and proteins
- and more

Distillation is often simplified as being a process for the separation of ethanol from water. But the heat of distillation promotes all kinds of complicated chemical reactions, and according to their physical properties many of the aromatic substances will make it into the

spirit where they are called congeners. So ultimately, barley with a higher spirit yield should lead to less congeners in the spirit.

Complexity By Inconsistency

More and more tasks in whisky production have been automated, to an extent that today it is possible for a single worker to run an entire distillery from a computer in an office. Granted, only a fraction of distilleries are fully automated, but apart from very few exceptions all distilleries rely on some level of automation.

Automation has been introduced in the whisky industry not only to cut costs but also to make production more consistent. The more manual labour or human control is involved, the higher the risk of error and the amount of inaccuracies becomes. Two examples:

1. In modern drum maltings virtually all grains get the same treatment due to the constant rotation of the drum. In traditional floor malting it is evident that some grains get more air contact than others because the manual rotation is far too variable to accomplish this. This will result in more diverse mix of grains in the various stages of germination, thus leading to a wider variability in relative content of convertible starch. Also, in traditional kilning the drying and peating is not quite as uniform as in a malting drum.
2. When a still is run only manually, each time it will be heated a little differently over time, resulting in the chemical reactions going on in a slightly different way. Some components may be produced in larger quantities while others may become suppressed.

The same holds true for mashing of course, or fermentation albeit to a lesser extent. Furthermore on directly fired stills (still in use in a few distilleries) the distribution of heat is less uniform than on stills with steam heating. Some areas of the still will be hotter than others, which will also affect the processes inside the still.

All these factors lead to different distillation runs yielding slightly different spirits. When casks are finally vatted for bottling this will ultimately result in a broader range of congeners in the final bottling.

You could compare this to industrial vs. hand-cut potato chips. When the chips all have the exact same strength they will all cook to very much the same degree of crispness. But some hand-cut chips will be a little thicker while others will be thinner; so you may get some rather crispy ones while others may still be rather soft, and the overall range of flavours will logically be wider than with the factory chips. If they taste better in the end or not depends on your cooking skills.

Compensating The Loss Of Natural Complexity

Modern whisky has a variety of options to counter the loss of natural complexity in the new-make spirit.

Complexity By Extraction

In earlier times most whisky was bottled at a fairly young age. Single malts were usually 8, 10 or 12 years old, ages of 18 years or older were fairly uncommon. Combine this with the fact that back then, there was hardly any real cask management (Quote of a distillery manager I talked to: "Every cask that was not leaking was a good cask"), but still many of these old bottlings taste at least as good and often also more mature than their modern successors.

The natural complexity of old-time spirit obviously needed less cask interaction to yield a mature whisky than modern new-make. This becomes especially evident when looking at standard blends like Johnnie Walker Red Label. Sadly I have not tasted an old version myself yet, but those who have are very consistently reporting higher quality to be found in these old bottlings. At the rather young age these blends are being bottled, yesterday's whisky seemed to have been significantly more mature than today's.

Whisky blending has often been described as putting together an orchestra of different musicians. Using that young yet mature whisky, yesterday's blenders had the resources to create symphonies while today's entry level blends 'sound' more like elevator music.



Modern whisky needs more time to mature, replacing the loss of inherent flavours by larger quantities of aromas extracted from the cask wood. So wood management has become increasingly important, and distilleries now go to great lengths to secure their supply of high quality casks, the actual wood being just as important as the previous content.

Back in the days when any old cask would do, nobody would have given a damn, if the staves were cut only from the most precious specimens of *quercus alba* of the Ozark Mountains or if the butts were seasoned with the finest oloroso sherry from the Gonzales Byass bodega. Today, cask wood has become a selling point and is prominently featured in marketing campaigns.

Numerous experiments have been done with wood lately, from using fresh oak casks over extreme 'alligator' charring to re-toasted cask heads. And I am sure that the whisky makers have some more wooden aces up their sleeves.

Complexity By Design

Another way to increase aromatic impact is what I would like to call creative vatting. These designer whiskies are made from a carefully selected range of different casks, used to create a specific flavour profile. Jura Superstition is an example (combining young peat and older sherry casks) or Ardbeg Uigeadail and Corryvreckan. More often than not, such whiskies have no age statement in order to allow the distilleries to use young casks without the psychological penalty associated with single-digit ages in the minds of some consumers.

Replacing Complexity with Loudness

This is a very popular method to pack more punch into a whisky bottle. When we can't summon the full symphonic orchestra of flavours we have to resort to other forms of whisky music. Why not pimp a small jazz combo with a roaring saxophone? And if you use an amplifier, it is just as loud as the full orchestra playing fortissimo. The whisky equivalent of this would be the modern peat monsters like Bruichladdich Octomore or Ardbeg Supernova. Strongly flavoured they are indeed. And they even taste good. Nothing to say against a hot jazz band, as long as they know their stuff. But can these whiskies really be called complex?

Young sherry monsters are another recent phenomenon. Full of sherry flavour and often very tasty, even though the whisky sometimes goes into hiding.

And of course there also are the ever-popular cask finishes. If done right, they really can enhance a whisky, like adding a few bells and whistles to a chamber concerto. But when things go wrong they are like the roaring saxophone playing in the string quartet.

Conclusion

Whisky has changed over the years, there is no doubt about that and it is only logical. Old things have gone and new things have come. Has it changed for the worse or for the better? I honestly couldn't say. But as long as new whiskies can get scores of 90 points or even more I have no fear of the future.

What I do wish for the future nonetheless is that whisky makers continue to prove that plain old-fashioned bourbon or sherry cask maturation can still give us whisky of the highest quality. Issuing many gimmicky bottlings like Bruichladdich or Ardbeg's current *Flavour of the Year* approach detracts so much from what whisky really is: A simple, yet rich, spirit from grain, yeast and water and maybe a little peat added, aged for more than three years in oak casks.

Barley data from "Whisky – Technology, Production and Marketing" (Inge Russell, 2003)
Wood picture courtesy of whiskyfun.com



Oliver Klimek (b. 1968) is living in Germany just outside Munich and earns his living by selling stamps over the internet. In 2009 his growing affection for whisky made him start his own whisky blog. Dramming.com currently features more than 70 ratings and tasting notes as well as more than 200 articles about everything whisky - interviews, whisky knowledge for beginners and anoraks alike, distillery visits and more. He has joined the Malt Maniacs in December 2010.