

Malt Maniacs E-pistle #2012-05 ***By Keith Wood, Germany***

This article is brought to you by 'Malt Maniacs'; an international collective of more than two dozen fiercely independent malt whisky aficionados. Since 1997 we have been enjoying and discussing the pleasures of single malt whisky with like-minded whisky lovers from all over the world. In 2010 our community had members from 16 countries; The United Kingdom, Sweden, Germany, Holland, Belgium, France, Switzerland, Italy, Greece, The U.S.A., Canada, India, Japan, Taiwan, Australia & South Africa. More information on: www.maltmaniacs.net



Olfaction & Memory

A Whiff, a Sniff and a Flashback

The correlation or relationship between olfactory sense and memory has interested and even puzzled me ever since my first experience with it back in around 2003.

Let me set the scene; I was hosting a tasting for some friends in a Munich bar and the dram of the moment was a rather fine Caol Ila IB, Scottish Castles range from Jack Wieber. As usual I asked for opinions from the group and various were forthcoming until one person asked what I thought of it. I slowly and carefully nosed the whisky, it was excellent indeed, and then without even realizing what I was saying, I replied "Yorkshire Dales, en route to Ingleborough, about 1973-4".

Good gracious, where did that come from?

To explain further; from the age of 11 years I attended a school which bought a country inn and converted it into an outdoor centre for pupils. The location was a quiet village at the foot of the Yorkshire Three Peaks and, to cut a long story short I loved the area and spent as much time there as possible. Anyway, one day during the late spring of 1973, or perhaps 1974, a group of pupils were setting out early for a day's walk with the first objective being a peak called Ingleborough, some miles away. We had been walking for a good hour across desolate countryside, slowly but steadily getting damp and cold from the miserable weather when we suddenly topped the brow of a hill to find before us a remote row of country cottages. They were burning what seemed to be a mixture of wood and peat, with the smoke gently wafting in our direction giving a sense of warmth, life and comfort to our bedraggled group. We enjoyed the moment and continued on our expedition to complete a hard but fine day's walking.

This was a single moment in time, and long-forgotten, although it seems that it was committed to my deep memory as, some 30 years later, this single moment flooded back to my thoughts as the aromas of that Caol Ila perfectly matched the smoke of those chimneys.



Ingleborough revisited, 35 years later, winter 2008

I have experienced similar flashbacks of long lost memories since that time and we'll explore some of them here, but just what is it that can cause these amazing phenomena?

It seems that high level processing of olfactory information occurs in the primary olfactory cortex and this has a direct link to the amygdala and hippocampus. The amygdala is mainly responsible for our experiencing of emotion and emotional memory so we begin to see a possible link here to olfactory sense and emotion or emotional memory. Then we have the hippocampus which is heavily involved in working and short-term memory.

In fact, the amygdala and hippocampus are both part of the brain's limbic system and olfaction is the physically closest sensory modality to that system.

The Brain

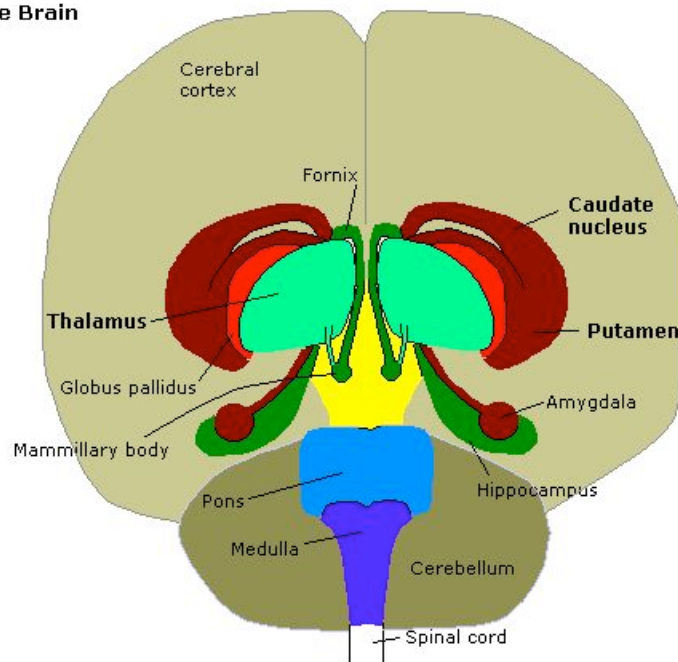


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Is it also significant that olfaction is the slowest of all our senses and odours generally penetrate or persist for the longest amount of time? Olfaction is most certainly slower than sight or hearing and, our olfactory receptors are the only ones that are directly exposed to the physical outside world around us.

So, maybe this also helps explain the quite unique relationship between olfaction and memory, and gives me lots of food for thought as I now look back on that cold morning in the Yorkshire Dales with those comforting, warming, smoking chimneys.

In December 2010 I received an invitation asking if I would like to join The Maniacs as of January 2011 and, as it turned out, so did my good friend Oliver Klimek. We celebrated the occasion with a couple of close friends and a few good bottles, one of which was an Old Bothwell (IB) Port Ellen brought by Oliver. It was a delightful dram, my favourite of all tried that year but when asked for my opinion I could only offer "**Nose; Scarborough**" (some 40+ years ago.) Yes, I was suddenly hit by another of those flashback moments; I'm about ten years old, it's the school holidays, a sunny day and I'm at the seaside with Mum. We've taken the train to Scarborough and we're now walking from the main part of town along the seafront to the more residential areas, but it's a walk of a good mile with the sea on our right and Scarborough castle high on our left. The Port Ellen has that fresh sea-air in abundance, but also clean grasses and some hay with just a hint of peat. After a few minutes of sheer pleasure the grasses and hay grow slightly more dominant. Just like those school holiday day trips to Scarborough.

It seems I am not alone in this experience, as **Alexandra Smith** explains in **The Olfactory Process and its effect on human behaviour**

:

“Early childhood memories can be evoked by many triggers, of which one of the most powerful is a particular smell. A couple of years ago, I was unpacking boxes of Christmas decorations from the attic. One of the boxes contained old, partially melted candles that were to be put on the fireplace mantle and lit on Christmas Eve. Unrolling each uniquely fragrant candle from the yellowed newspaper, I suddenly had a vivid recollection of a childhood experience. I was between the ages of two and three, wandering through a candle store with my parents in the Greek section of Detroit, Michigan. I gazed wide-eyed at the seemingly endless shelves of wax figurines, reaching through the restraining arms of my father in attempts to feel their smooth contours. After slowly returning to reality, I realized that the smell of the candles being used to decorate for the holidays triggered my earliest memory of childhood.”

Alexandra carries on to explain: “The world as we know it is filled with fragrances, from sweet smelling foods and beauty products to the unpleasant smells of pollution and chemical supplies. How is it possible for humans to distinguish and discriminate between the millions of odors present? To answer this question, one must start at the beginning, with an individual odor molecule. With such a diverse array of fragrances in the world, the shape of an individual odor molecule is unique to the emitting substance (1). When inhaled, the odor molecule is absorbed in the nasal passage and binds to chemoreceptors in the olfactory epithelium, which are specific to certain odor molecules (2). This binding initiates a change in the permeability of the sensory neuron, which creates a slow electric potential that travels to the olfactory bulb (3). From the olfactory bulb, the transmitted signal is sent to the limbic system of the brain for further processing (2). Recognition of the odor occurs in the limbic system when the signal is interpreted through a comparison to past experiences with the odor and relation of the smell to the emitting substance (4).

A couple of prominent features of the olfactory system deserve some close attention. First, it is interesting to note that olfactory neurons, unlike most other types of neurons, are produced in constant supply with the regeneration of new cells approximately every 60 days to replace the dead olfactory neurons (5). Researchers are currently studying the possibility that insulin or other hormones may be responsible for the capability of olfactory cell growth, which is unique to the mammalian central nervous system (3). Second, the limbic system of the brain, which receives information from the chemoreceptors about a particular odor, not only mediates mood and emotion, but also serves as a memory storage area (4). This common junction, where memories, emotions and odors meet, explains why smell is often an intense trigger for distinct memories and potent emotions (4). When perceiving a particular aroma that is associated with a past memory, the recognition of the odor in the olfactory process will simultaneously evoke the correlated memory. “

So, I’m beginning to learn that the close proximity of the primary olfactory cortex, where the brain processes what we smell and the areas pertaining to emotion, emotional memory and also short-term memory appears to hold some responsibility for the types of flashback I’ve experienced. In fact it even seems that the limbic system where information about smells is processed, could also be acting as a memory storage area. Also the fact that our olfactory sense is the slowest and requires so much time to process what we smell, along with the fact that our receptors are exposed to the physical world around us would seem to help too. Then add the facts that our olfactory neurons are constantly being renewed or regenerated.

But what I find truly fascinating here is when Alexandra says *“Third, in just one square inch of the brain, humans have the capacity to process about 10,000 different odors (6)”*

That’s one hell of a lot of possible flashbacks!

On 5th November 1605 a hoard of gunpowder barrels was discovered in cellars under the Houses of Parliament in London and Guy Fawkes' "Gunpowder Plot" was discovered and foiled. Guy Fawkes was involved with a group of Catholics, led by Robert Catesby who wanted to assassinate King James and replace him with his daughter Princess Elizabeth, third in line of succession.

To this day people in England celebrate this failure with bonfires and fireworks every year on 5th November. Yes, I know, only the English could possibly celebrate failure in such a way, but let's consider it a success for Parliament and Royalty that the plot was indeed foiled.

Although large official events are more common today, when I was a child it was more common to have private bonfires and parties in our gardens with friends and neighbours. My father supplied lots of wood each year. We bought fireworks, invited friends and neighbours and celebrated in style. That time of year is usually when the cold evenings are setting in so the order of the day is soup, homemade toffee, toffee apples (apples on sticks coated in lovely sticky toffee), baked potatoes and various other winter warmers.

In one of my whisky tastings around 2003-4, I offered a series of 8 different drams from around the world with none from Scotland. One of those was Milford 10y from New Zealand which had a nose filled with toffee, toffee apple, banana and chocolate. You guessed it, I was immediately taken back more than 30 years to those wonderful childhood bonfire nights, sitting in front of a healthy garden fire, watching fireworks and eating homemade toffee. Amazing, truly amazing.

It is often said that richly sherried whiskies evoke memories or smells of rich fruit and nuts, an Englishman may often compare these to the rich and fruity Christmas cake we use to celebrate that time of year. Glenfarclas is one distillery famed for its sherry cask policy and is no stranger to this kind of comparison, but I took this a stage further when I first tried a bottle of Glenfarclas Quarter Casks, 1987.

When I first opened the bottle, it offered a rather musty, or even dusty nose, reminiscent of old books and filled with leather and aged oak. I was immediately reminded of various plush hotels and country houses I've visited with this kind of drawing room or library filled with old oak shelves, books and fine leather furniture. As the nose progressed, it turned more to those Christmas cake style sherried notes, making me immediately think of sitting in a country house or hotel on Christmas day, after Christmas lunch and enjoying a slice of rich Christmas cake in the library.

I could continue by speaking of how Talisker always reminds me of visits to a rather misty and smoky Isle of Skye. How Highland Park expressions almost always remind me of bracken and heather filled hills on the Scottish mainland. Laphroaig, Caol Ila and Ardbeg with my belief that each one has an Islay jetty hidden somewhere in each bottle. Not specific memories in these cases, although definite associations as strong as any memory, but I'll leave you with some thoughts from Jonah Lehrer who has written not only about smell and memory, but also a book entitled Proust was a neuroscientist:

"As the scientists note; artists have long described the powerful linkage of smell and the past. Here's Marcel Proust, explaining the madelaine:

"When from a long distant past nothing subsists, after the people are dead, after the things are broken and scattered, taste and smell alone, more fragile but enduring, more unsubstantial, more persistent, more faithful, remain poised a long time, like souls, remembering, waiting, hoping, amid the ruins of all the rest; and bear unflinchingly, in the tiny and almost impalpable drop of their essence, the vast structure of recollection."

As I noted in Proust Was a Neuroscientist, these ornate subclauses contain some prophetic insights into how our brain works. In 1911, the year Proust began writing his

novel, anatomists had no idea how our senses connected inside the skull – the brain was three pounds of mysterious mush. One of Proust’s hypotheses, however, was that our senses of smell and taste bear a unique burden of memory.”

Marcel Proust (1871-1922), full name Valentin Louis Georges Eugène Marcel Proust was a French novelist, critic and essayist most famous for his monumental *À la recherche du temps perdu* (In search of lost times, or previously translated as Remembrance of things past), published between 1913 and 1927 in seven parts.

Marcel was a literary artist and yes, I can see how Jonah Lehrer discusses the link between olfactory sense and memory via the works of Marcel. As for me, I look forward to revisiting more long-forgotten childhood memories and experiences through my passion for single malt whiskies and all the joys they offer.

Slàinte Mhath

Keith Wood, Germany



Keith Wood was born in Yorkshire, England in the summer of '59 but moved to Bavaria in 1998. Whisky is his hobby of now more than 25 years and he has previously worked alongside local restaurants to provide gourmet events, pairing single malt whisky to gourmet dishes. He has also specialised in matching finest chocolate to whisky. In October 2009 his website [Whisky Emporium](#) was redesigned as a non-commercial entity and became home to [Keith's personal tasting notes](#) and whisky musings on his "[Dram-atics](#)" [blog-esque page](#). His tasting notes currently number well over 1000, covering almost all Scottish and many international distilleries and are growing on an almost daily basis. Keith has been a certified Maniac since January 2011.

References:

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