

Kaffeeschule Thomas
Brinkmann Hannover



Becoming a better cuptaster

A systematic approach to cup,
evaluate and describe coffee

Reviews

About your book: I "ate" it up right away, I love your writing style. And I would especially like to emphasize your balance between technical quality and lively language.

- **Carina Schneider, Kaffeemanufaktur Würzburg**

Highly recommended reading.

- **We Roast Coffee Collective**

Rejoice, cuppers! The (German) must-have book on everything to do with tasting is now available.

- **Oliver Goetz, Q-Grader, Alt Café Wien**

Slurping is allowed! Super book from Thomas from Kaffeeschule Hannover!

- **Frank, Coffeeteller**

Featured



Mixology | Magazine for Bar culture



German Coffee Association

"Never stop asking"

Preface

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Many and heartfelt thanks go to my proofreaders and the members of my advisory board.

Dear Coffee Professional,

sometimes we find it difficult to put the aromas of a coffee into suitable words, don't we? Describing a coffee objectively in terms of its many characteristics can also be a challenge.

But the good thing is: it's not witchcraft and anyone can learn it.

Sensory is a wonderful field in the vast world of coffee. And it is much more than recognizing that a coffee brings flavors of nut and cherry.

We have often missed a book that systematically bundles the most important things about professionally tasting, evaluating and describing coffee.

That's why we sat down by ourselves, read, researched, asked questions, and read some more. When writing, it was important to us that we had good, mostly scientific, sources. And that we offer a strong reference to practice.

For quick readers, we recommend reading only the introduction and conclusion of each chapter, as well as the training questions.

For anyone holding this book in their hands, we recommend a good coffee to go with it and happy reading.


Sincerely,
Thomas Brinkmann and Nadine Karbach

*More about us, you'll find on page 115.

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Chapter 01



Why Coffee Sensory?


There are a number of reasons to train your own sensory perception or to seek advice from someone with good sensory perception.

The human ability to perceive, sort and evaluate sensory impressions is unique. To date, it has not been possible to replicate the complex processes of the human body in sensory technology.

Our brain plays a major role in this: with its millions of neuronal networks and ramifications, it forms the control centre of our sensory system. And it is anything but easy to recreate. More about our brain later.

Now let's start by exploring why it's important to get to grips with sensory science in the coffee business. To do this, we have compiled 10 reasons and will go into each one in more detail.

At the end there is a checklist and everyone can write down which reasons are most important at the moment.



10 Reasons for coffee sensory

There are some good reasons to take a closer look at coffee sensory. Perhaps you are familiar with one or more of these ten reasons already.

1. The development of your coffee products

Product development, just like with other foods, is one of the central tasks attributed to sensory science. Think about your espresso blend: it tastes balanced, not too sour, not too bitter, with good body and a pleasant mouthfeel. In short, a pleasant coffee on the tongue. How long did it take you to get the blend "balanced"? How many times did you and roaster friends, panelists, or an outside consultant sip and evaluate until you were all finally satisfied?

Your espresso blend is just one of many possible examples. Every product made in your coffee roastery has to be developed first. And tasted. Only with the right sensory skills can you reach your goal in product development.

2. Purchase of suitable green coffee

The basis of your coffee products is suitable green coffee. It must meet a number of requirements, including your sensory specifications. By means of professional tasting, you can assess for yourself whether a green coffee fits into your range or is suitable for producing the coffee product you are planning. The sensory evaluation is an important component in your decision.

3. Sensory evaluation of panelists

Professional and independent advice can be a valuable help in making commercial decisions. A trained sensory panel or other suitable experts assess coffee qualities based on objective criteria and relieve you as a buyer or decision-maker. Does the judgement go in the same direction or do the professional assessments differ too much? A professional "sip" from the outside can strengthen your opinion or make it waver: It is important to know that although you make decisions alone, you can receive many professional opinions in advance.

4. Consumer test

Panels with consumers reveal whether your coffee strikes a chord with coffee buyers. Does your coffee taste good? Would the respondents buy it? The customer test gives you the certainty that your coffee works. Or the test shows you that something needs to be done differently to your product to make it appeal to coffee buyers. A "small" test with a consumer panel can save you "bigger" inconveniences.

5. Quality improvement of existing products

With your existing products, you want to regularly check in which direction you can improve them. With a blend, for example, you want to check whether you can replace coffees with the same sensory quality. With a different coffee, you can increase your sales margin, choose a different supplier or simplify the roasting process.

There can be many reasons for improving an existing coffee product. It is important to keep the sensory properties as stable as possible. Otherwise, your customers may taste the difference if the change is too big.

6. Quality assurance of existing products

Sensory controls ensure that your coffee product remains stable. Deviations are acceptable within defined limits. By tasting regularly, you know exactly whether your coffee is within the standards you set. And you can react if the deviations become too great or you discover unacceptable defects.

7. Coffee as a natural product

Coffee, a natural product, is subject to fluctuations that also affect sensory perception. As a coffee roaster, do you manage to keep these sensory effects within an acceptable range? Or do you have to adjust your roasts? The answer is provided by regular tasting based on a standard you have developed.

8. Shelf life of coffee products

As a coffee roaster, you decide on the minimum shelf life of your products. For some products it is easier for you to set the date, for other products it can be a bit more complicated. Sensory measurements are also a suitable means of making your decision here.



9. Packaging and taste

In most cases, your coffee product needs suitable packaging. Some materials can affect the sensory properties of your coffee product. Your coffee may already have an unpleasant taste. Sensory testing therefore also covers the effects of packaging materials.

10. Preparation and taste


Preparing your coffee with different brewing methods can have different effects on sensory perception. That's why you taste you roasts yourself. For espresso with the portafilter, for filter coffee with different brewing methods. This is the only way to know what your customer has in the cup, and to be able to accurately identify and name the sensory characteristics.

Checklist

Which reasons lead you to further develop your tasting and sensory skills? Are some reasons more important than others?

- 1.The development of your coffee products ☐
- 2. Purchase of suitable green coffee ☐
- 3. Sensory evaluation of panelists ☐
- 4. Consumer test ☐
- 5. Quality improvement of existing products ☐
- 6. Quality assurance of existing products ☐
- 7. Coffee as a natural product ☐
- 8. Shelf life of coffee products ☐
- 9. Packaging and taste ☐
- 10. Preparation and taste ☐

Chapter 02



Aroma and Taste


We perceive aroma and taste through our nose and tongue. How exactly this works is the subject of the following chapter.

We perceive aroma through our nose, but also through the connection between nose and throat, the retronasal olfaction.

We perceive taste via our tongue. It gets even more exciting when we take a closer look at the trigeminal nerve: It reacts to pressure, temperature and pain. This is important when we want to talk about the mouthfeel or the body of coffee.

All three sensations taken together (aroma, taste and the stimuli of the trigeminal nerve) result in the flavor of a coffee.

If we do not perceive aromas at all, we may have an olfactory disorder. An overview shows us which ones there are.



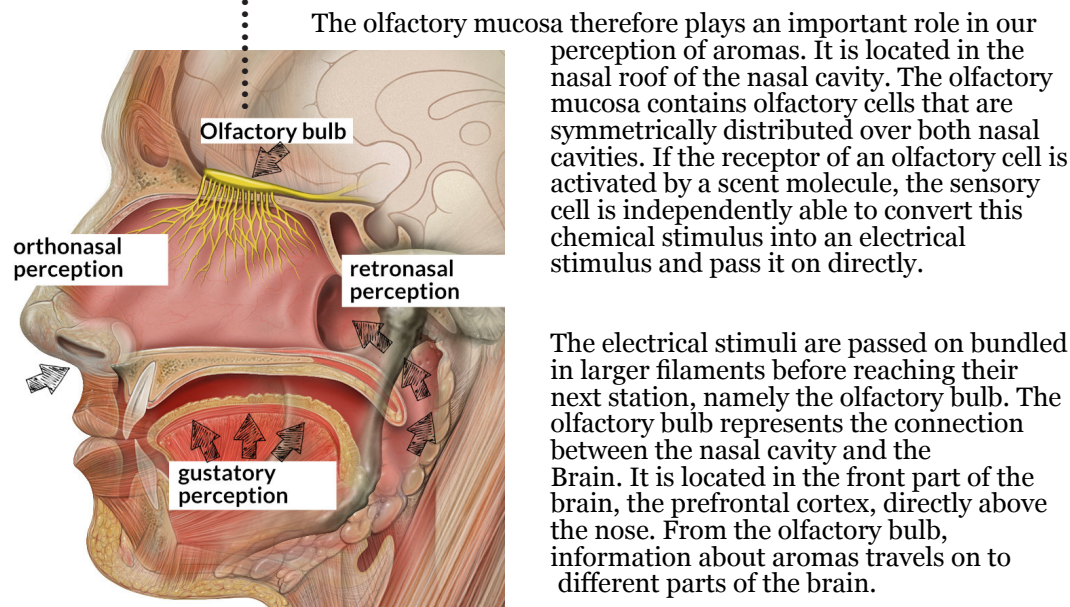
Elements of coffee sensory: Aroma

„Hmm, does that coffee smell good“

Smell plays an important role in coffee sensory perception. We perceive aromas, search our memory for suitable words to describe them and communicate our perceptions to others. Let's take a look at what exactly happens and what factors influence our judgement of a coffee.

We smell with tongue and nose

We smell with our nose, which we call orthonasal, and also with our mouth, which we call retronasal. If the smell of ground or brewed coffee flows into our nose, the aroma substances dock directly onto the olfactory mucosa. Just as important is the retronasal perception via the connection of the oral cavity to the nasal cavity. We therefore also perceive odors with our mouth.



The olfactory mucosa therefore plays an important role in our perception of aromas. It is located in the nasal roof of the nasal cavity. The olfactory mucosa contains olfactory cells that are symmetrically distributed over both nasal cavities. If the receptor of an olfactory cell is activated by a scent molecule, the sensory cell is independently able to convert this chemical stimulus into an electrical stimulus and pass it on directly.

The electrical stimuli are passed on bundled in larger filaments before reaching their next station, namely the olfactory bulb. The olfactory bulb represents the connection between the nasal cavity and the Brain. It is located in the front part of the brain, the prefrontal cortex, directly above the nose. From the olfactory bulb, information about aromas travels on to different parts of the brain.

These two parts of the brain are important for smelling and remembering

Which parts of the brain should we pay particular attention to? First, there is the amygdala, also called the almond nucleus. It is part of the limbic system and evaluates flavors emotionally. From "mega yummy" to "oh my, what is that?" everything happens here.

Second, we look at the hippocampus, also part of the limbic system. It forms the interface between short-term memory and long-term memory and decides which information is stored and which is not. If we want to learn or recall smells, it is the hippocampus that links the information with existing information in our memory.

What influences smelling

When we want to perceive and judge smells, a lot of factors play a role. For example, whether we are hungry or full. Furthermore, our perception of aromas is very subjective: This is due to our upbringing and individual situations in which we have experienced scents.

Marcel Proust describes just such an episode as early as 1917 in his novel "In Search of Lost Time", long before we have scientifically investigated the effect of personal experience and smells. As a keyword, let us just mention "madeleines", the smell of which was still long associated in the author's memory with the visit of his aunt.

Active smokers have a poorer perception of coffee aromas and smells overall. If they stop smoking, the sense of smell returns to normal after a while.

How we recognize and store coffee aromas also depends on our age. Younger people recognize aromas better and can also remember them better. As we get older, this ability diminishes. This is because the sensory cells in the olfactory mucosa recover more slowly with age. Also, our preference for aromas changes with age: while strawberry declines, vanilla or orange rise in our favor.

Image 1: Illustration by Patrick J. Lynch & Jaffe, Carl C./ Own caption

Describing off notes

Off notes in coffee are unpleasant. When they occur, it is good if we can describe them. Let's first see how different organizations define off-flavors and also sensory defects, before we then show which terms we can use.

Definitions Off Notes and Defects

ISO 5492

Off-flavor: Untypical flavor of a product that is associated with spoilage or alteration.

Taint: taint that is unusual to the product.

Specialty Coffee Association

Defects are negative or deficient flavors based on the quality of the coffee. These are divided into two categories. A "Taint" is a perceptible but not too intense foreign aroma. A "Fault" is a severe defect that is either very present or that makes the coffee undrinkable.

Sensory lexicon from World Coffee Research

The Sensory Lexicon does not see itself as a tool for evaluating defects in coffee. The only exception is the description of flavors and aromas that are traditionally considered to be defects, such as phenol or musty. It is possible that in the future the lexicon will include other terms that are generally considered defects.

Typical errors and misnomers (SCA)

- Sour
- Rubbery
- Ferment / overfermented
- Phenolic / Phenolic
- Potato defect (only in Burundi/Rwanda)
- Mouldy/ musty
- Earthy

Sensory lexicon from World Coffee Research

- Musty/Dusty
- Mouldy/Moist
- Phenolic
- Animal
- Meaty/Broth
- Wood
- Medical
- Rubber
- Petroleum
- Stinky
- Fermented

Cup of Excellence

- Chemical/Paper-like
- Woody
- Cedar
- Sandalwood
- Leather
- Bitter
- Salty
- Earthy

Coffee Consulate

Group "Mineral"

Subgroups with exemplary terms:

Earthy: Flower soil, Carrot, Potato, Roots

Musty: Algae, Moist leaves, Moss, Mushrooms, Bark mulch, Rio, Mold

Musty: Cork, Cardboard, Peat

Group "Chemical"

Subgroups with exemplary terms:

Alcoholic: Cognac, Marzipan, Port, Sherry, Whisky

Medical: Acetone, Disinfectant

Sulphur: Rubber, Cabbage, Sulphur dioxide, Tar

Summary

Describing coffee often sounds simple, but it is not. Describing the attributes of coffee accurately is a branch of analytical sensory science. And this discipline of science with its various methods produces useful results for us.

In our search for terms, we find what we are looking for from various providers: The International Standardization Organization (ISO) is concerned with the standardization of sensory terms as well. World Coffee Research published the second version of the Sensory Lexicon in 2017, contributing to the standardization of coffee vocabulary. Based on these findings, the Specialty Coffee Association published the Aroma Wheel for coffee. Private suppliers such as Scent One, Belco or Coffee Consulate offer aromas or training material that has been created with a systematic approach.

We can record attributes in coffee in terms of "how much" (quantitative) and in terms of "how good is that attribute" (qualitative). "Sweetness" in coffee, for example, can be abundant, medium or low. Qualitatively, we describe it with terms like molasses, maple syrup, caramelized, honey or marzipan.

While for aromas and flavors, sweetness and acidity detailed and tested vocabulary is available, there is little systematic for the characteristic "mouthfeel" or "body". Until today, there is no agreement on the definition of this characteristic, as well as on terms to describe it qualitatively.

Why do we often find it so difficult to find suitable terms? Evolution has its finger in the pie, as well as lack of concentration, disadvantages in the collection of vocabulary or the development of our senses. But practicing over and over can do a good job for us!

Sensory descriptions for our coffee can have a positive impact on sales and customer loyalty. Sensory claims can be a handy alternative to health claims when we want to promote our coffee.

According to a recent study, the most common terms are "mild", "strong" and "full-bodied". In total, there are 145 different sensory descriptions for coffee to be found on packaging.

Training questions

With these training questions we can understand and deepen the previous chapter more intensively.

The questions are not about being right or wrong. Rather, our own assessment or opinion is asked.

Tip 1: Write down answers on a pad and read them again in six months. Do we still agree with the answer? If yes, why? If no, why?

Tip 2: Has a colleague also purchased the book? What does she or he think about the questions?



We learned about different collections of terms from different providers, for example, World Coffee Research, Coffee Consulate, or from Traore's study of Cup of Excellence data. What are the advantages and disadvantages of each provider? Is there "the" one provider?



On 53 percent of the coffees in consumer markets, we find a statement about the sensory properties of the coffee. What are the reasons for making a claim? What are the arguments against it?



There is still little proven and systematic vocabulary in the coffee industry for the "body/mouthfeel" property. Why is that?

Authors



Thomas Brinkmann

Founder and owner of the Kaffeeschule Hannover, Germany.
Authorized SCA trainer (2010 to 2019), first German holder of the SCAE Coffee Diploma, 1st place in German roasting championships 2008 and 2009, juror at the "Cup of Excellence" program since 2012 with nine participations, trainer for coffee sommelier (IHK), roasting of specialty coffee (IHK), coffee expert (IHK); owner of the coffee brands "Thomas Kaffee" and "Villa Kava" in his own coffee roastery.

"Learning is what drives me. So I learn the most when I explain something to others. This is what makes my job my calling."

Nadine Karbach

Publisher Signifikant Media

"I am passionately curious about learning. It's that kind of curiosity that invites trial and error, experimentation, understanding."

Read more about Thomas & Nadine also on [Kaffeeschule.com](https://kaffeeschule.com).

Notes

[illegible]



Becoming a better cup taster Cup, evaluate and describe coffee

Cupping is a valuable tool for coffee professionals to use for quality assurance, analysis and evaluation of coffee.

But how often do we wish we had a better understanding of how sensory works in us and how we can use it better?

How often are we at a loss for words when we want to accurately describe the quality of a coffee?

How often do we wish we could make better and more confident decisions about our coffee purchases?

And wouldn't it be nice to be able to explain our coffee to customers in a way that makes them want to drink the first cup on the spot?