

coffee101 - level up your coffee game

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ESE 2022

NERD101 - ESE - ifsr - TU Dresden

Outline

Why you should not listen to me

Ingredients

How to make coffee

Coffee and ethics

Why you should not listen to me

Taste is subjective

- "You're just jealous that they found happiness so much cheaper than you did." - Dankpods
- Tastebuds change towards bitter profiles with age
- Desirable tastes vary with culture
- Emotion is more important than Extraction percentage

Ingredients

Beans - Roasts

Roast:	Unroasted	light roast	medium roast	dark roast
Taste:	strong/sharp acidity	sweeter	caramel tones	Coal/burnt, no acidity
Look:	green	yellow	brown, glistening, one crack	black, oily, two cracks



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Beans - Types

- Types of beans:
 - Arabica: most popular, mild taste
 - Robusta: cheap, double the caffeine, sharp and woody taste
 - Liberica: uncommon, sweet, fruity, floral
- It is common to have Arabica/ Robusta blends between 1:1 to 9:1
- Decaffeinated coffee is either sprayed with chemicals that burn while roasting or pre-boiled, so only darker roasts

Grinding beans

- Roasted coffee oxidates, store airtight at 20-25 degrees
- Grinding espresso beans increases the surface by a factor of 10'000
- use withing two weeks
- Blade grinders get hot and grind unevenly
- Burr grinders are preferable (motor or hand powered)



The Weber HG-2 - The \$1,650 Hand Grinder

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Grind Size

- Extra coarse/ peppercorn size: cold brew or cowboy Coffee
- Coarse/ sea salt size: french press
- Medium coarse/ coarse sand: immersion brewing, clever drip
- Medium Grind/ smooth sand: Aeropress (3 min. brew), pour-over
- Medium fine grind/ fine sand: pour-over, aeropress (2-3 min. brew)
- Fine grind/ rough powder: espresso, mokka pot, aeropress (1 min. brew)
- Extra fine/ flower: Turkish coffee

Water

- Water makes up 98% of filter coffee and 93% of espresso
- Magnesium attracts acidic flavors from beans
- Calcium can cause limescale in machines (difficulty with flow, heating efficiency, damages)
- Consider experimenting with pre-boiling, descaling or filtering

How to make coffee

How to make Coffee



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Extraction - where the magic happens

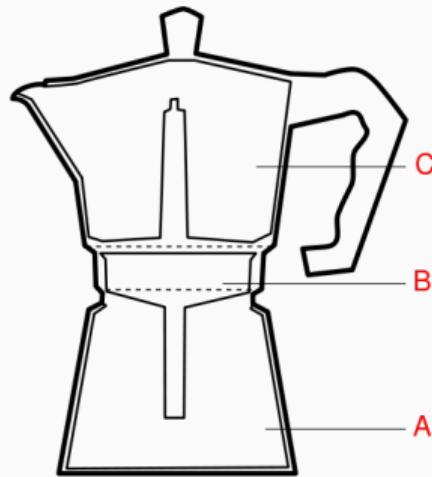
- Rough order of extraction:
 - Caffeine
 - Acids and fats
 - Sugars
 - Bitterness components
- Influenced by temperature, pressure, surface area and time
- usually 91-94 degrees

Cold Brew - cheap, strong and refreshing (0-5€)

- Usually medium - dark roasts
- Mix coarse, ground beans with cold water
- Let sit for 12 - 24 hours refrigerated or at room temperature
- Strain with cheesecloth, coffee filter or french press
- Flavor: little acidity, not too strong taste with low bitterness
- Tip 1: Mix 1:1 with milk/water, add ice and sweetener e.g. Agave syrup
- Tip 2: Snobs tell you it's a waste of good coffee because you don't extract complex acid profiles - don't listen to them

Moka - look like an Italian (10-40€)

- Medium - dark roasts to avoid acidity
- Fine grounds, a bit less than espresso
- Fill moka with water up to valve, add grounds to basket and place on heat until enough coffee is in the top chamber
- Flavor: very concentrated, espresso style coffee (extracted at 1-2 bar vs 9 bar), no crema
- Tip: Use hot water for shorter extraction and avoid the "spewing phase"



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French Press (7-40€)

- Coarse grind
- 1:12 coffee:water ratio
- Pour hot water on top and mix lightly (!)
- Wait four minutes, Press down plunger and pour
- Flavour: Full, no oils/fats lost in a filter. Sometimes some fine grounds
- Tip 1: Bloom with a 4th-6th of the water for 30 seconds, let sit for three and a half minutes
- Tip 2: Swirl hot water and discard it before you make the coffee to pre-heat it



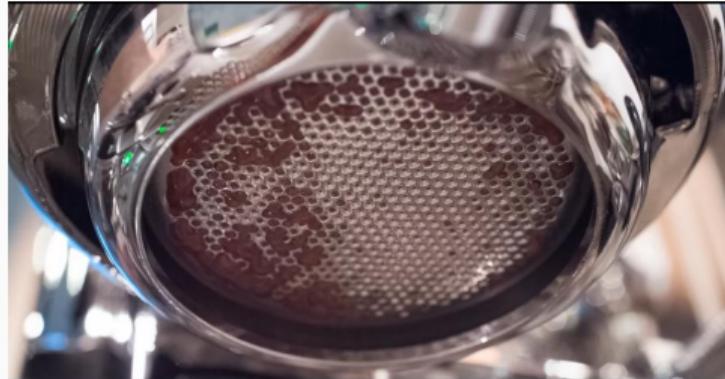
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Espresso - the pinnacle of coffee for pretentious purists (80-2000+€)

- Finely ground - medium, depending on the length of extraction
- Grounds are placed in a basket, distributed and pressed down with a tamp
- Basket sizes: solo, doppio/double and triplo with 7g, 14g and 21g
- Extraction length: ristretto/stretto (reduced), normale, lungo, caffee crema
- Serve in preheated glass/cup and stir gently
- Flavour: very intense - dilution might be desirable (water/milk/milk alternatives)



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Espresso - Tips

- Crema test - half a coffee spoon of sugar should be able to float on the crema for a bit
- Espresso machines can often be easily fixed up or bought used for cheap
- You can drink more if you pull smaller shots/decaf
- Make your own distribution tool with a cork and needles
- Try pulling a shot onto chocolate



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Pour over (6-40€)

- Place the pour over brewer on a cup or carafe. Add filter
- Fill a filter 2/3 - 3/4 with medium (coarse) grounds
- Add 50-70ml of hot water, stir and let bloom for 30-45 seconds
- Pour over the rest of the water in circles going in to evenly distribute it
- Flavour: Less rich, more singular due to removal of oil with paper filters
- Tip: Wet the filter before adding the coffee to get rid of any paper taste



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Coffee and ethics

Producers

- 12 Million out of the 25 million coffee farmers (3.20 dollars/day) live below the international poverty line in Brazil alone
- Coffee plants are often treated with insecticides that can act as neurotoxins, cause cancer, miscarriages, etc. in farmers
- In various countries conditions similar to slavery and child labour are still present on some farms. Starbucks and Nestle are among the companies that sourced beans from those farms. (10)

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