Activity A: Research

The Influence of Materials and Shape on Sensory Expectations

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# Material & Shape on Sensory Expectations

Texture of the serving vessel may exert an influence on the taste and experience of the coffee.

“Overall, all of the various coffees that were served in this study were perceived as being significantly drier or rougher in the aftertaste when the participants touched a rough surface (sandpaper or rough ceramic cup) instead of not touching the sandpaper or holding the smooth ceramic cup instead. The coffee was also rated as more acidic from the rough cup by Q-graders, and sweeter from the smooth cup by amateur consumers.”

(Carvalho, 2019)

Although this experiment involved toughing different surfaces, it seems likely that this effect would transfer onto the experience of handling a drinking vessel and possibly enhanced when dealing with the mouthfeel of the vessel as it touches the lips.

Cup colour effects the perception of the taste of a beverage

Four of the receptacles in this study had a pinkish hue and one was transparent. While the material of the receptacles also varied, the key point to note here is that the participants’ ratings of the sweetness that they associated with the transparent receptacle was significantly lower than for any of the pinkish cups.

(Carvalho, 2019)

The shape of the cup, specifically the openness of the mouth can affect the coffee experience.

Both amateurs and experts judged: (1) the aroma to be significantly stronger in the tulip cup, and (2) the sweetness and acidity to be significantly more intense in the split cup. The tulip cup was the one with the highest ‘D-ratio’ (defined as the ratio of maximum diameter to opening diameter), which indicates that the physical properties of the receptacle do indeed play a role when it comes to the perception of complex odours, in both wine and specialty coffee

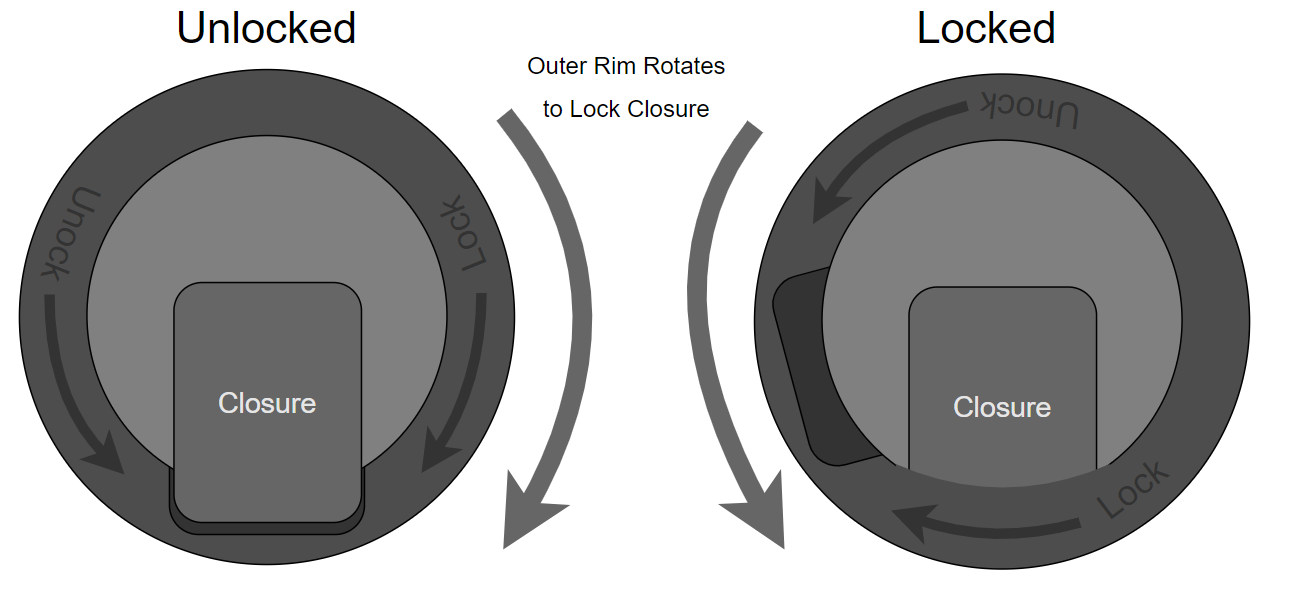
(Carvalho, 2019)

<https://www.sciencedirect.com/science/article/pii/S095032931831036X>

How our design meets the market need and how we have addressed environmental and inclusivity issues

# Market Need

Keeps Contents Hot for several hours – Two vacuum insulated layers lower heat loss through convection and conduction.

Spill Proof & Easy to transport – Lid features a screw on mechanism that will not fall off if tipped. The closure for the drinking orifice will have a levered construction that is locked in place by rotating the outer rim of the lid

Allows mug to be placed in backpacks without worrying about spillage or the cap being knocked off.

Easy to use drinking orifice – Extra wide closure for lid to maximise area in contact with mouth for a superior drinking experience.

Neutral Colours – Wood effect wrap makes travel mug blend into surroundings in woodlands & bird habitats

Durable & Resistance to Environment & general use inc dishwashing – Stainless Steel construction is resistant to acidic drinks, easy to clean and dishwasher safe. Wood effect wrap and BPA free plastics like Polypropylene are hard waring and dishwasher safe.

# Environmental

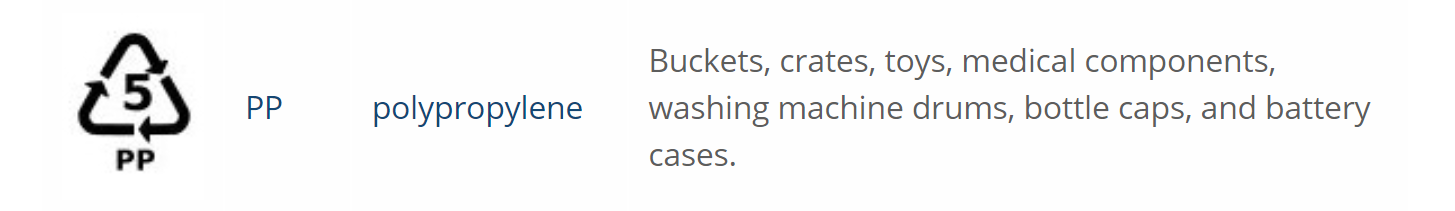
This product uses materials that are recoverable and recyclable. Waste Stainless Steel retains a significant amount of value as a feedstock for the metal industry, For any stainless steel products on the market today there is an approximate 60% of recycled material.

“Stainless steel is made up of:

25% Old scrap such as end of life products

35% New scrap which is returning from production

40% New raw materials added”

(British Stainless Steel Association, 2021)

(British Plastics Federation, 2021)

# Inclusivity

Alternative Lid could incorporate a drinking straw, both non-spillable and accessible for people with muscle disorders and low swallowing strength. Straw exterior would be made from BPA free plastic like Polypropylene, which can be heated to temperatures high enough to disinfect without damage, interior straw could be silicon as this is dishwasher safe.

(Kidly, 2021)

# References

British Plastics Federation. (2021). *Plastic Recycling*. Retrieved July 24, 2021, from BPF.co.uk: https://www.bpf.co.uk/sustainability/plastics\_recycling.aspx

British Stainless Steel Association. (2021). *ENVIRONMENTAL ASPECTS OF STAINLESS STEEL*. Retrieved June 24, 2021, from BSSA.org: https://bssa.org.uk/bssa\_articles/environmental-aspects-of-stainless-steel/

Carvalho, F. M. (2019, July). Assessing the influence of the coffee cup on the multisensory tasting experience. *Food Quality and Preference, 75*, 239-249.

Kidly. (2021). *Non Spill Drinking Spout*. Retrieved July 24, 2021, from Kidly.