Sweeter than Science

A Survey of Canteen Desserts at Institut Pasteur

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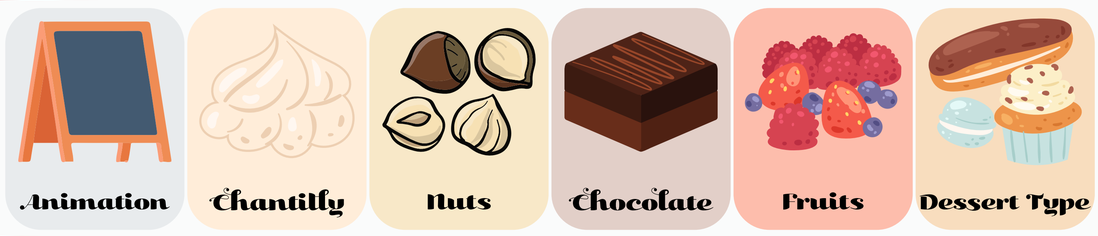
Introduction

Lunch is a key aspect of the scientific work day in France, often occurring minutes after loading precious reactions into the "good" PCR machine and ending minutes after the same PCR finishes. There are three components of a well-rounded lunch: entrée, main dish, and dessert. The modern scientist often skips the entrée course, but dessert choice remains crucial to daily happiness and PCR success. At Institut Pasteur (IP), we are blessed with bountiful dessert choices that reflect seasonal and weekly trends. However, the diversity of desserts, chocolate growth patterns, and their associated chantilly toppings are not yet understood.

In this unique study, we conducted a multi-year survey of daily dessert sampling in order to eat our sadness away and address knowledge gaps in canteen dessert choice. Our results will inform decision-making of IP students, post-docs, and the entire scientific community for years to come.



Methods

Biased Sampling Technique
The lead author selected a dessert (sometimes 2) from the IP Canteen and sometimes took a photo 4-5 days per week, but missed holidays and the month of August (Fig. 1). A total of **102 desserts** were sampled.

Figure 1. Institut Pasteur canteen dessert display.

Small-Sample Dessert Survey
A shared spreadsheet was filled out by 8 IP scientists who have eaten some of the desserts. Each dessert was rated 1-5, with the following guidelines:

1. Would not eat again. Not worth the calories. Do not recommend.
2. It's edible, but I wouldn't recommend it. Would eat if last dessert on Earth.
3. It neither contributes nor subtracts from my quality of life.
4. Delicious but missing something. A good choice overall.
5. Outstanding. Always pick this dessert over all the others.

Statistical Methods and Phylogenetic Tree
Metadata were aggregated for each dessert based on the following categories: Animation, Chantilly, Nuts, Chocolate, types of fruit, and type of dessert. All descriptive and statistical analyses were performed in the R statistical computing environment (v4.0.1). A phylogenetic tree was calculated using choucroute as an outgroup, and colored according to dessert category and/or associated ingredients.

Dessert options at the IP canteen are diverse

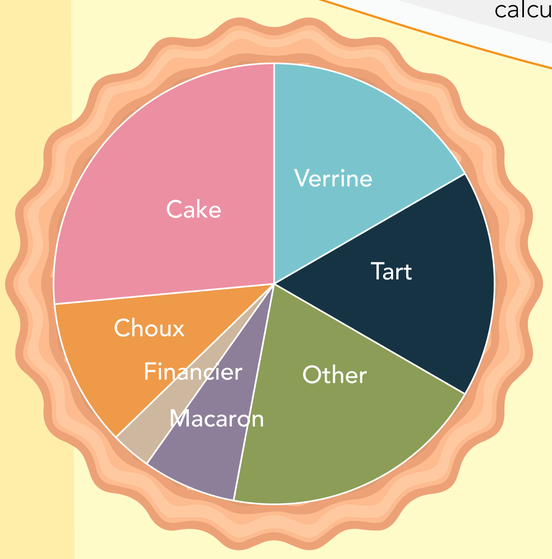


Figure 2. A. Images of all 102 desserts sampled in this study. **B.** Pie chart of dessert types. Cake is the largest category, with 26.5% of representation

Distributions of chantilly, chocolate, and fruits vary by dessert type

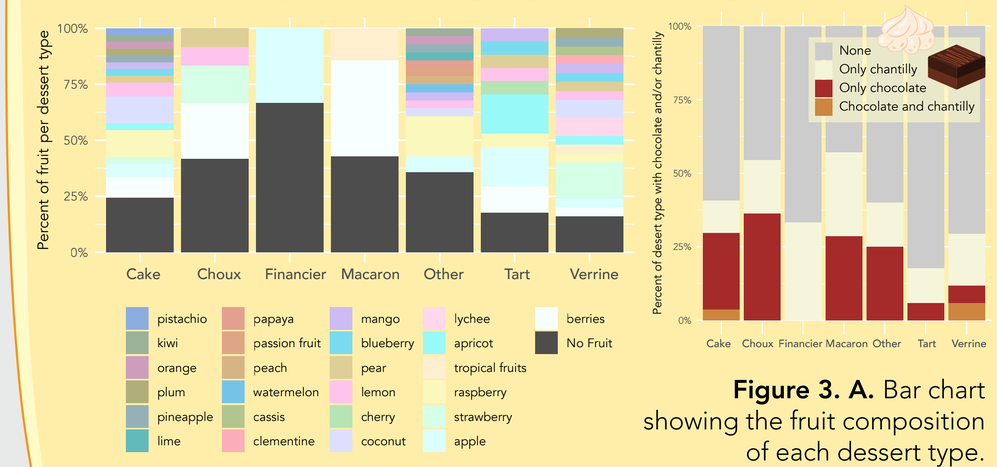


Figure 3. A. Bar chart showing the fruit composition of each dessert type. **B.** Percent of desserts with chocolate and/or chantilly.

Animation desserts correlate with chocolate, nuts, and chantilly

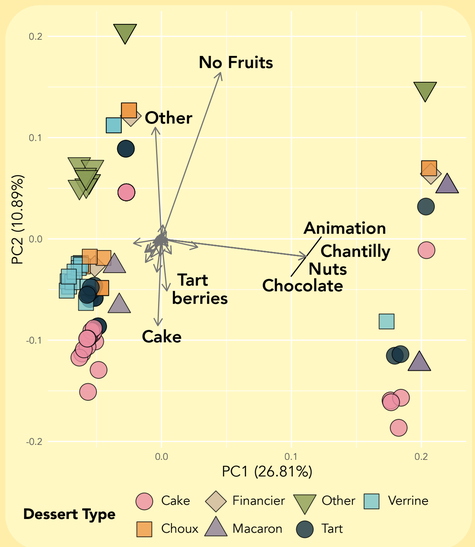


Figure 4. Principal Components Analysis of dessert diversity with loadings shown

Phylogenetic analysis reveals widespread fruit patterns with conserved chocolate regions

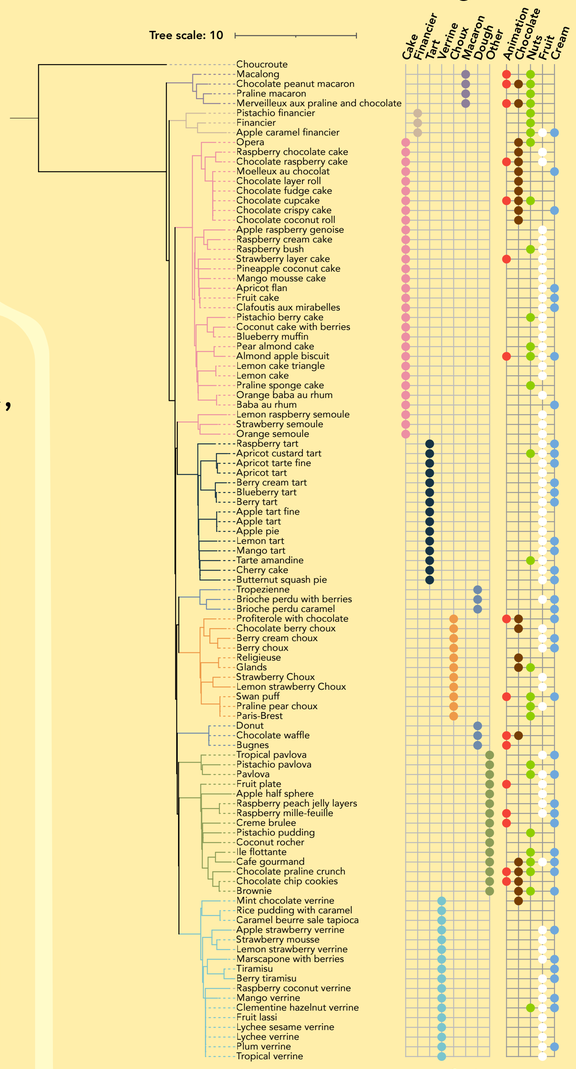
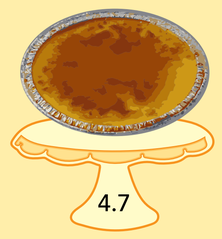


Figure 5. Phylogenetic tree of distance between desserts based on composition

The most popular desserts are…

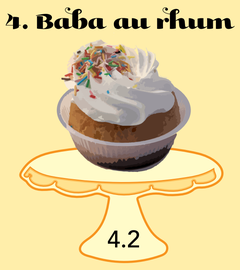
1. Crème brûlée



2. Swan puff

3. Bugnes

4. Baba au rhum



Conclusions

- In this study, we observed **high diversity in dessert choices** at the IP canteen (Fig. 2)
- Over **80% of verrine and tart desserts contain fruit** (Fig. 3A). In the verrine category, 16% of choices contained strawberries.
- Only 4 desserts had average ratings above 4. Three of these desserts are animations that cluster together in the dough category (Fig. 5)
- Selection of an Animation dessert will likely provide you with chocolate, nuts, and chantilly flavors, perfect for that failed PCR (Fig. 4)
- Unsurprisingly, the **queen of desserts** is the Friday Animation special: **Crème brûlée**
  Is this because it's Friday or because of its delightfully crunchy top?

Perspectives

> Although a survey of 8 people is more than enough, perhaps more votes would be nice to ensure crème brûlée is the true winner

> Machine learning can be applied to predict the success of a dessert prior its canteen debut (but we all know Animation is the way to go)