

COMMUNICATING RESULTS FROM TEMPORAL SENSORY STUDIES

INTRODUCTION TO THE WORKSHOP

John Castura

Compusense Inc., Guelph, Ontario, Canada



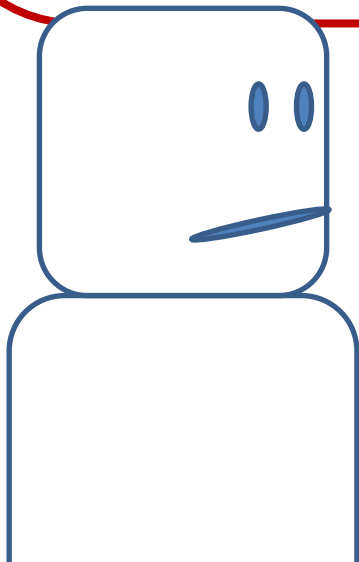
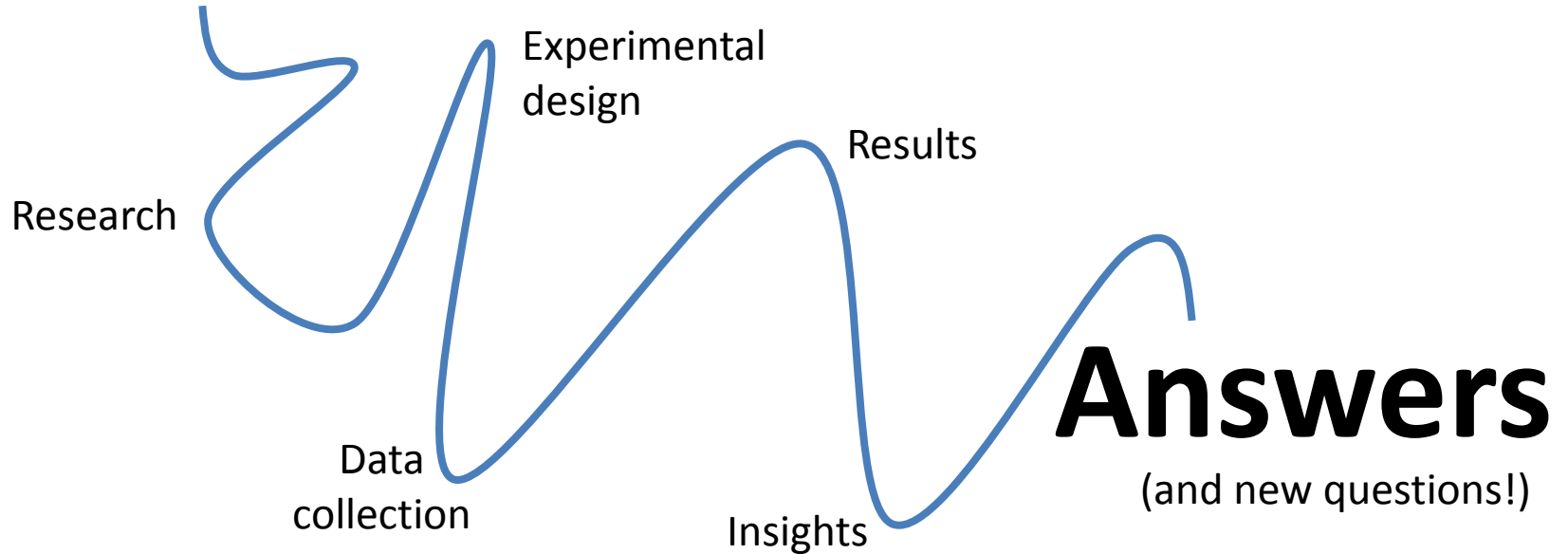


HI! I'M
JOHN.

TEMPORAL SENSORY STUDIES are
EXPERIMENTS CONDUCTED TO
UNDERSTAND CHANGES IN
AROMA, FLAVOR, TASTE, AND
TEXTURE THAT OCCUR OVER TIME.

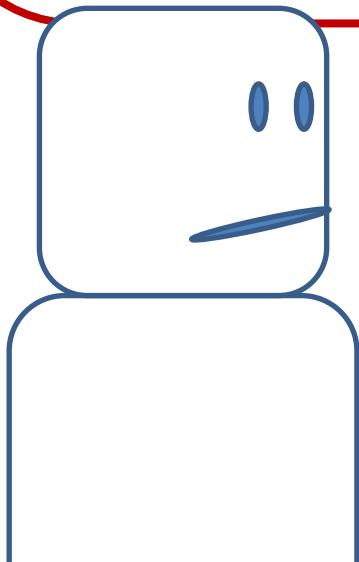
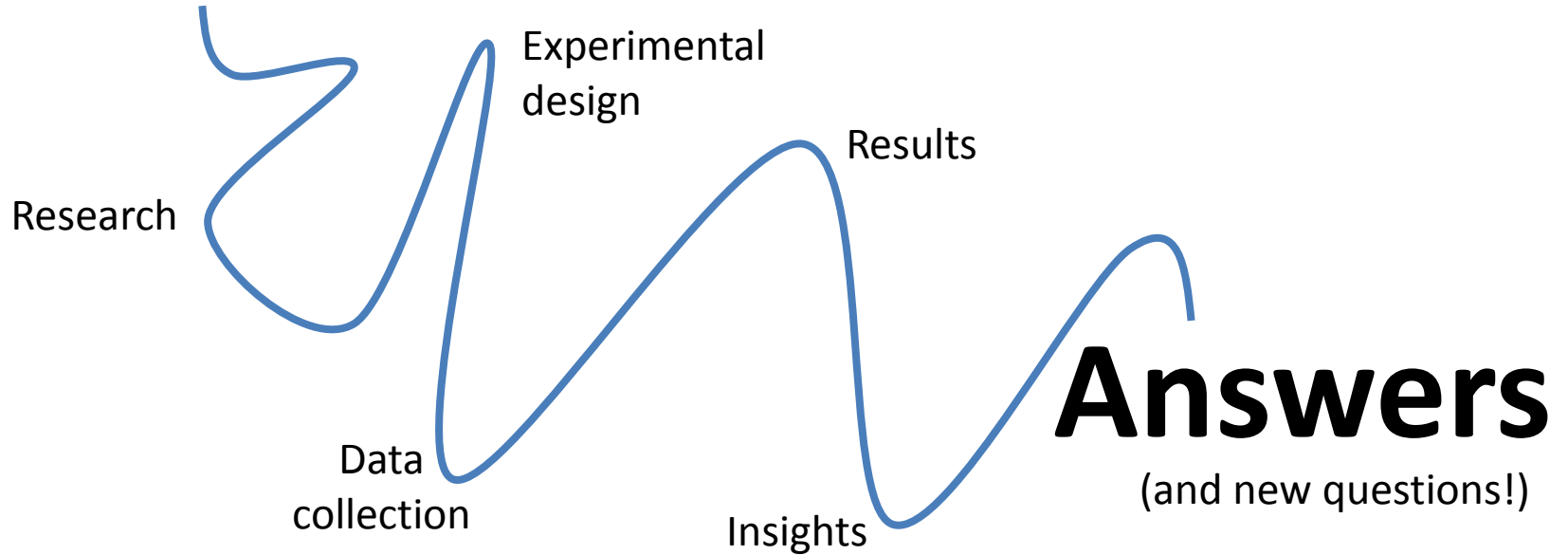
TODAY, WE'LL TALK ABOUT HOW TO
COMMUNICATE RESULTS FROM TEMPORAL
STUDIES TO A BUSINESS AUDIENCE.

Questions



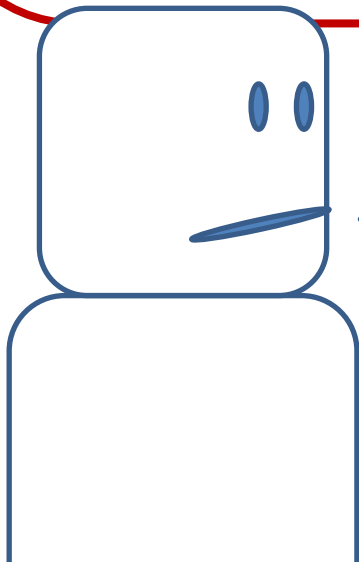
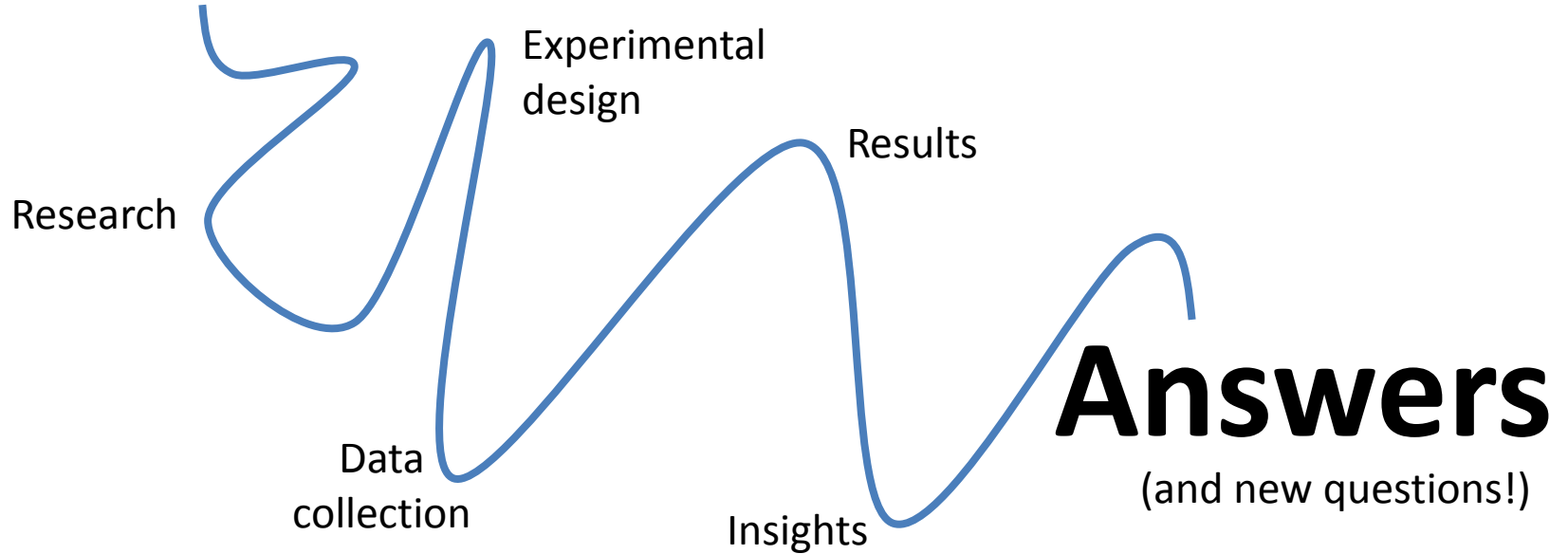
TO LEARN ABOUT PRODUCTS, I FOLLOW A **PROCESS**. IT INVOLVES EMPIRICAL TESTS.

Questions



IN PEER-REVIEW JOURNALS TEXT IS ORGANIZED TO FACILITATE CRITICAL REVIEW.

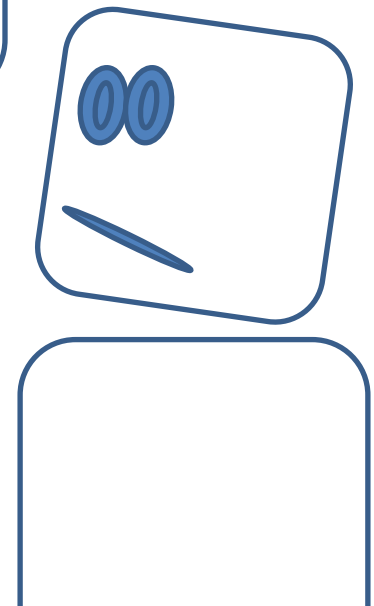
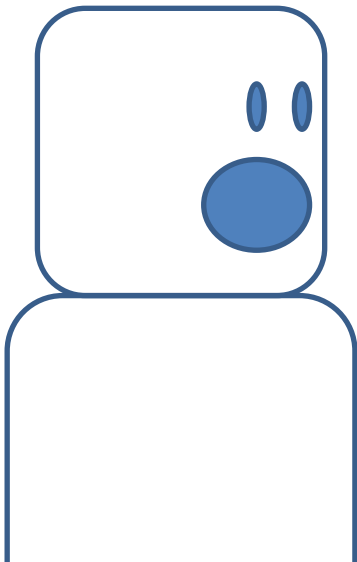
Questions



BUT THIS IS NOT HOW TO PRESENT RESULTS
TO BUSINESS FOLKS.

INSTEAD, START AT THE CONCLUSION.

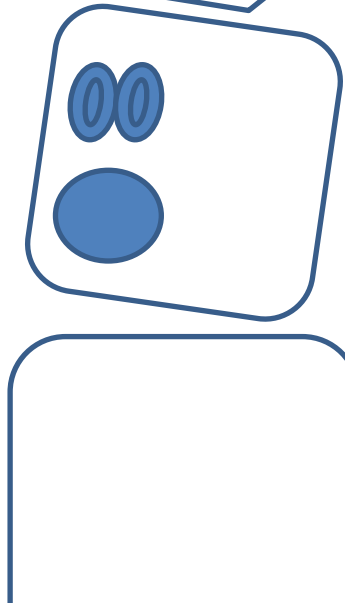
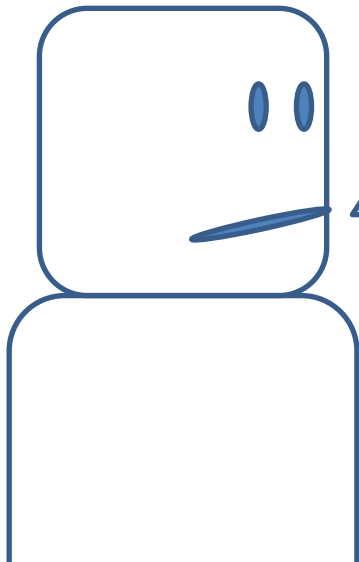
HOW ELSE WILL I KNOW IF
WHAT YOU'RE ABOUT TO
SAY IS RELEVANT TO ME?



AVOID DETAIL.

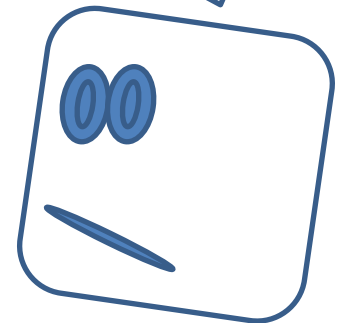
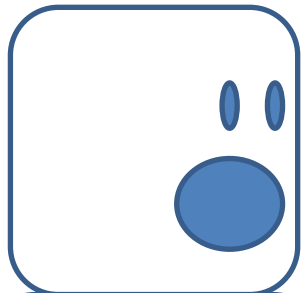
WHAT WAS LEARNED?
WHY DOES IT MATTER?
WHAT SHOULD I DO NEXT?

TO ANSWER THESE QUESTIONS
MEMORABLY, **SHOW, DON'T TELL.**



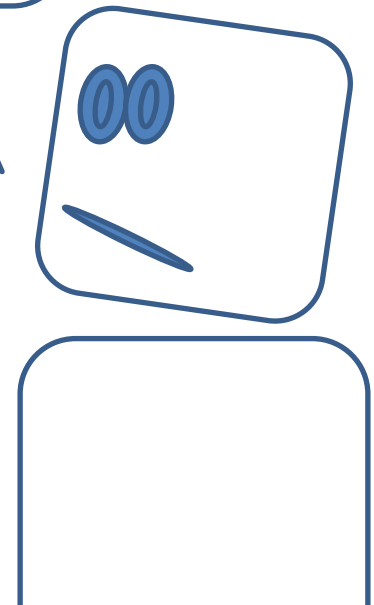
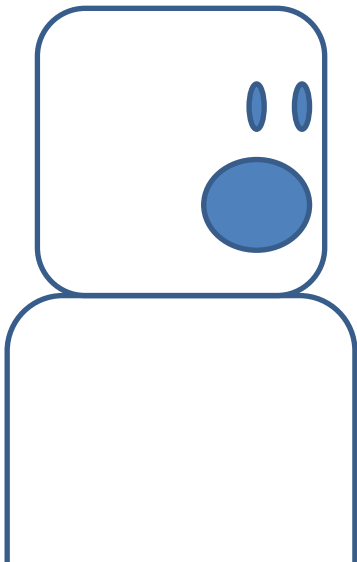
SHOW, DON'T TELL!

HAVE BUSINESS FOLKS evaluate THE PRODUCTS.
TASTE FOOD, DRINK BEVERAGES, AND SMELL
SCENTED PRODUCTS.



ENGAGE THEIR MINDS AND SENSES!

CHARACTERIZE THE SOLUTION.
FOCUS ON OUTCOMES AND
RECOMMENDATIONS FOR ACTION.



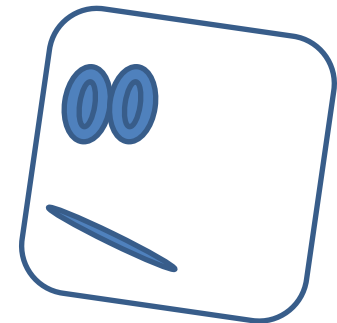
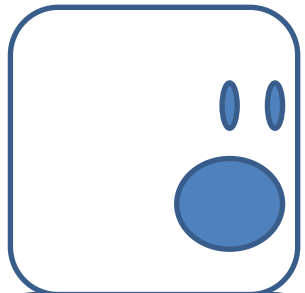
FORTUNATELY WE HAVE THREE GREAT SPEAKERS HERE TODAY WHO WILL SHARE HARD-WON COMMUNICATION TIPS:

TOM carr – TIME INTENSITY

amanda warnock – TEMPORAL DOMINANCE OF SENSATIONS (TDS)

SUZANNE PECORE – TEMPORAL ORDER OF SENSATIONS (TOS)

BUT THIS PRESENTATION
IS NOT A ONE-WAY
STREET. STICK AROUND TO
CONTRIBUTE TO THE
DISCUSSION!



COMMUNICATING RESULTS FROM TEMPORAL SENSORY STUDIES

SSP/SENSOMETRICS 2012 WORKSHOP

COMMUNICATING RESULTS OF TRADITIONAL TIME-INTENSITY EVALUATIONS

Tom Carr

Carr Consulting, Wilmette, Illinois, USA

Traditional TI Method



- One (maybe two) attributes evaluated over time.
- Assessors continuously track and report the perceived intensity of the attribute.
- Key features of the TI curve are extracted from each assessor's curve.
- Test products are compared statistically by performing ANOVA or MANOVA on the key-features data.

Summarizing Average TI Curves

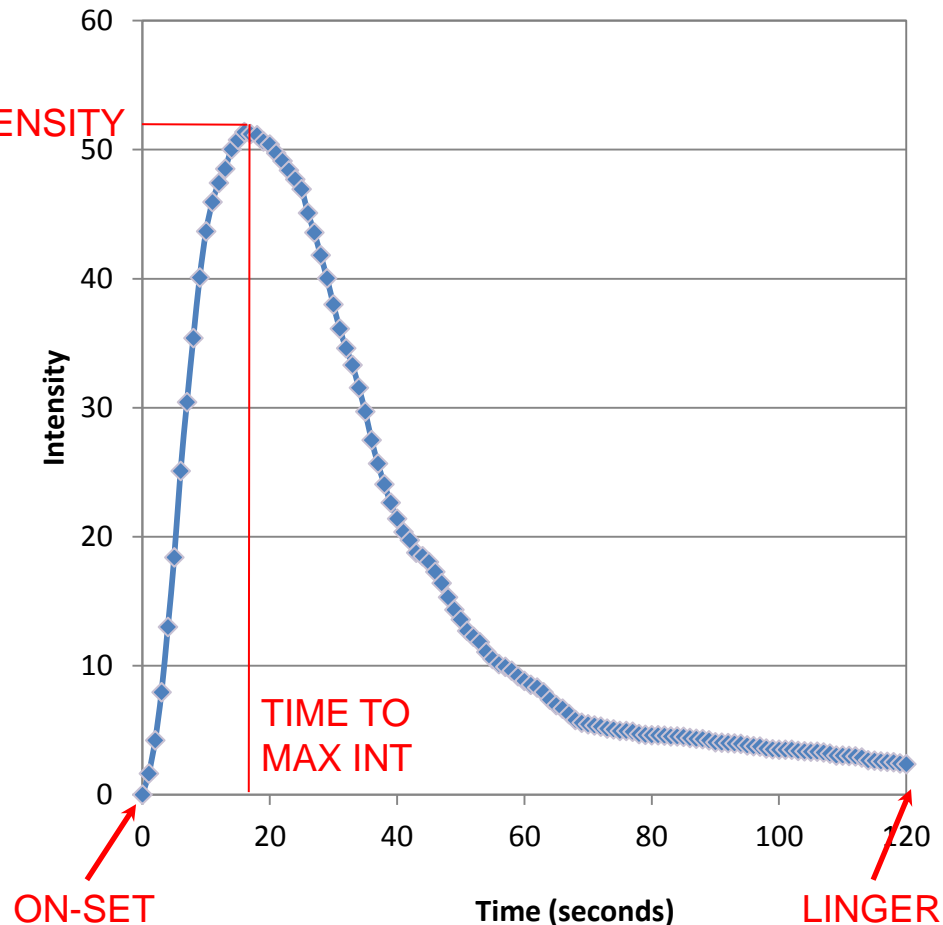


- TI evaluations lend themselves to graphical summaries.
- To avoid confusion, tabular and graphical summaries should communicate the same information.
- Averages of key features (tabular results) should match the graph of average intensities.

Summarizing Average TI Curves

- Note that key features of the average TI curve (graph) do not match the average of the key curve features (table).

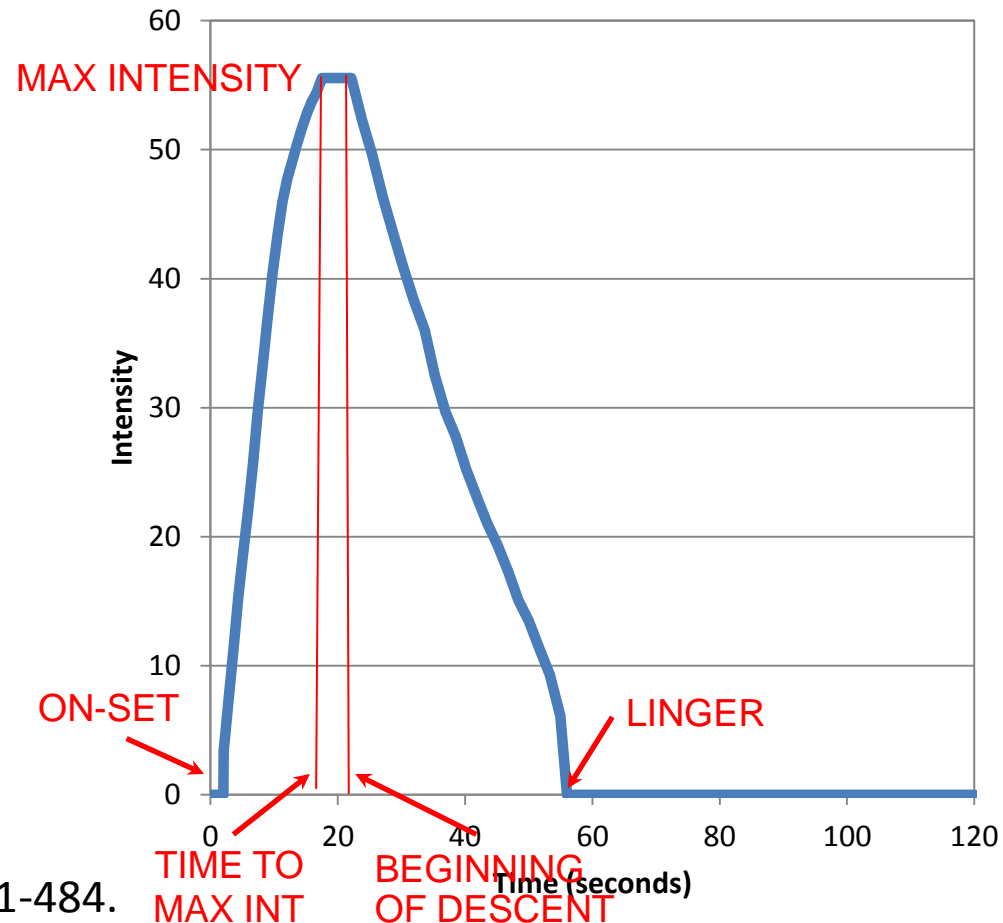
| Response | Sample |
|-------------------|--------|
| Max. Intensity | 55.5 |
| On-Set Time | 2.1 |
| Time to Max. Int. | 17.5 |
| Linger | 55.7 |



Summarizing Average TI Curves

- Liu and MacFie (1990) propose a method where the TI curve (Graph) matches the average of the key curve features (table).

| Response | Sample |
|-------------------|--------|
| Max. Intensity | 55.5 |
| On-Set Time | 2.1 |
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| Linger | 55.7 |



Reporting Results

- Focus on What You Learned, Not What You Did.
 - State Objective of the Study.
 - Briefly summarize what samples were tested and the basics of the methodology.
 - Number and Qualifications of Assessors.
 - Attribute(s) Evaluated.
 - How were Data Collected and Sampling Frequency.
 - Duration of Evaluations (Fixed Time or Until Extinction).
- One Slide – Anything More is a Methods Document.

Reporting Results

- Speak to Your Audience.
 - How you present results to product developers can be different than how you present results to marketing and upper management.
- Report Results as They Relate to the Objectives.
 - Focus on the relevant curve features.
 - Do not present a laundry list of significant differences.
- For a Non-Technical Audience, Discuss Key Curve Features Non-Technically.
 - e.g., “Sample A achieved its maximum intensity 4 seconds earlier than Sample B” as opposed to, “ T_{\max} of Sample A was significantly lower than T_{\max} of Sample B.”
- Draw Conclusions Relative to The Objectives.

COMMUNICATING RESULTS FROM TEMPORAL SENSORY STUDIES

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COMMUNICATING RESULTS INVOLVING TEMPORAL DOMINANCE OF SENSATIONS

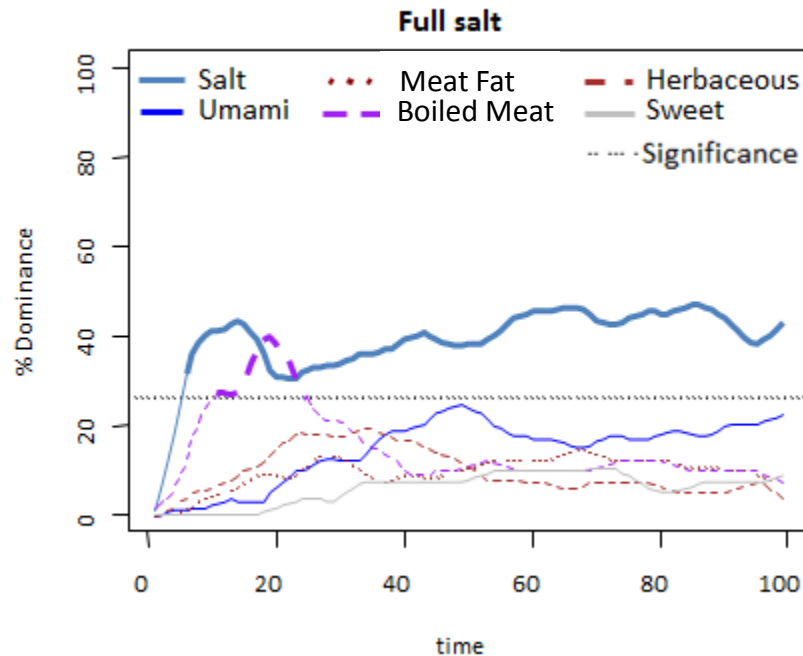
Amanda Warnock

Givaudan Flavours, Cincinnati, Ohio, USA



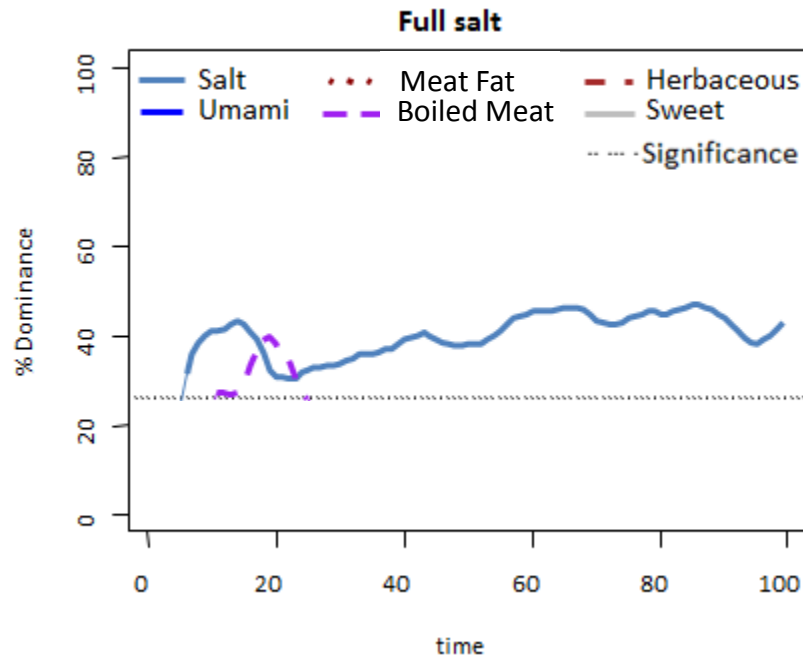
What are we looking at?

- Dominance, NOT intensity
- What is dominance?
- Dominance scale is a proportion



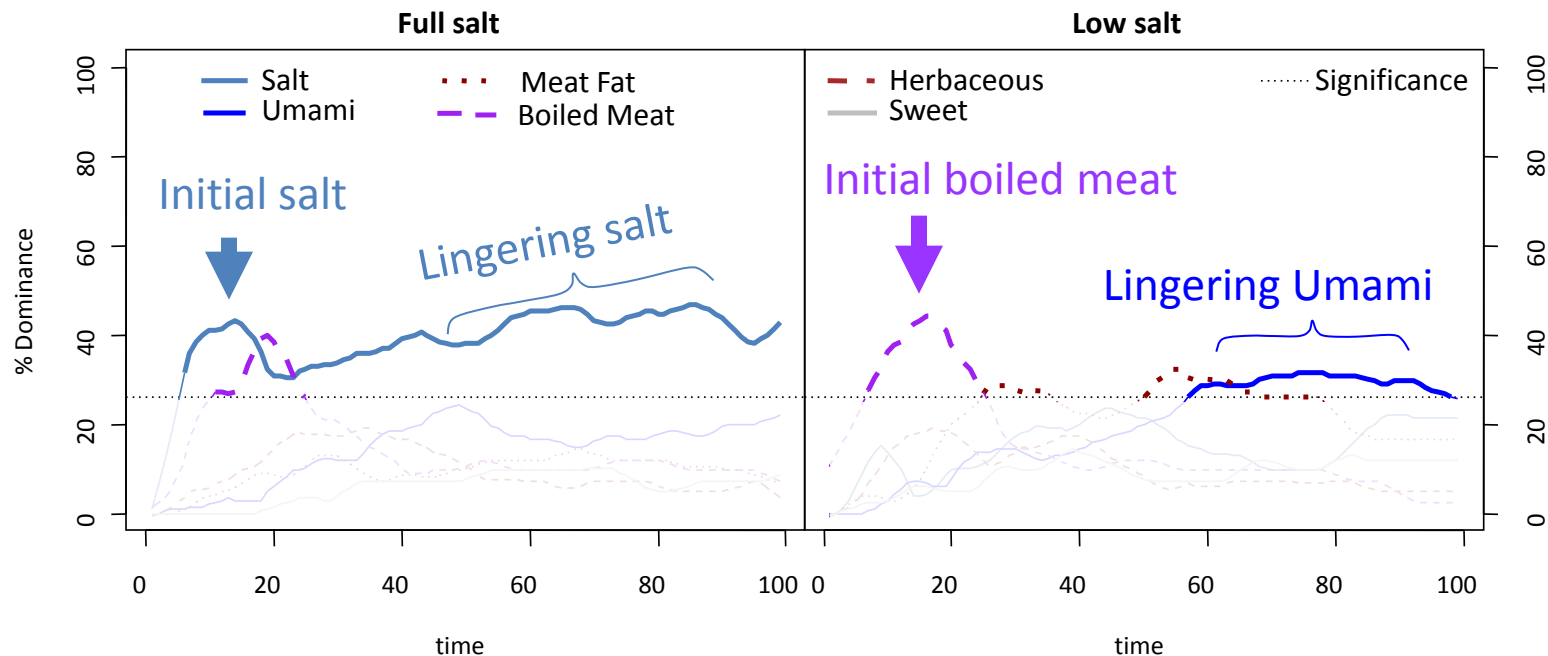
Noise Obsession

- Have a significance line to keep the focus on the meaningful output
- Do not create chances for obsessing over noise



Simplify & Compare

- Highlight the main points/conclusions
- Useful to compare two TDS curves side by side when comparing samples or products



COMMUNICATING RESULTS FROM TEMPORAL SENSORY STUDIES

SSP/SENSOMETRICS 2012 WORKSHOP

TEMPORAL ORDER OF SENSATIONS... IN PRACTICE

Suzanne D. Pecore

General Mills, Inc., Product Guidance & Insights, Minneapolis, Minnesota, USA



TOS COMPLEMENTS DESCRIPTIVE ANALYSIS

- Traditional Descriptive Analysis illustrates “maximal intensity” of attributes but does not capture temporal differences.
- TOS can clarify if there are differences in:
 - Onset or linger of key flavors
 - Flavor release
 - Upfront tastes with each bite across the eating experience

CASE OF THE DELAYED SPICINESS

- Alternate source of meat topping was suspected in new formula
- TOS offered efficient means to capture appearance of spiciness over eating experience

1st Spoonful:

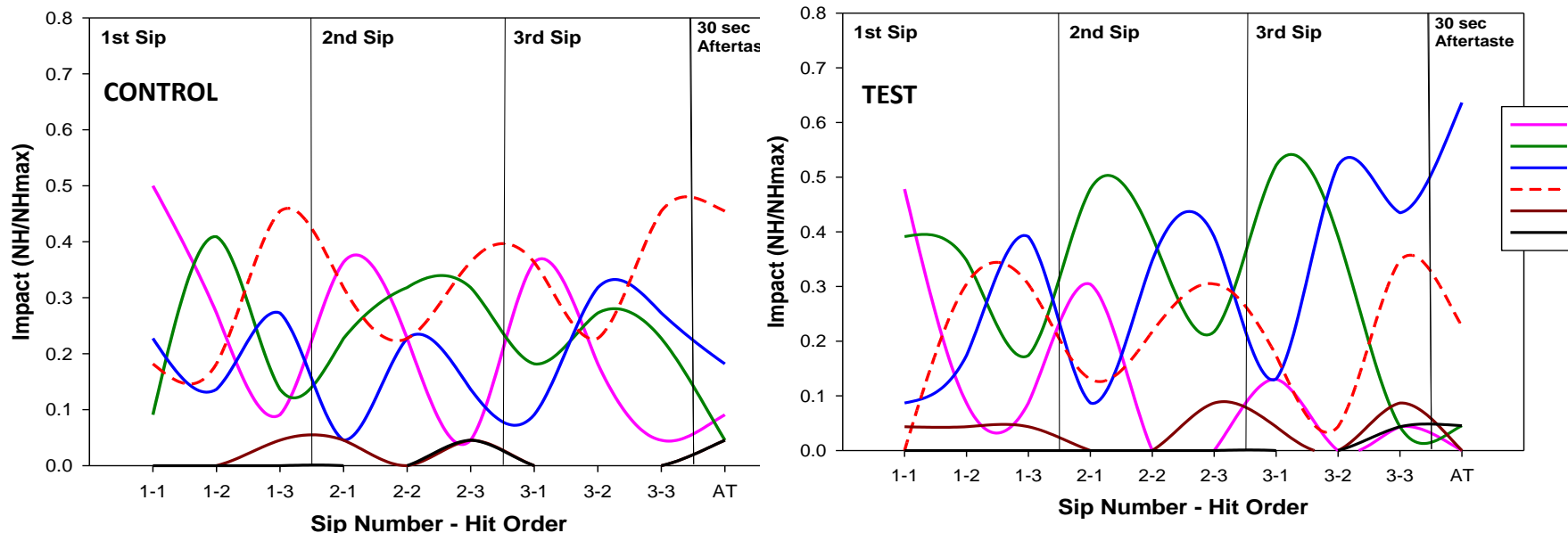
Take a teaspoonful of the product and quickly check which attributes hit 1st - 2nd - 3rd in the order they are perceived. Do not give intensity ratings.

| | Order Perceived | | |
|----------|-----------------|----------|----------|
| | Hits 1st | Hits 2nd | Hits 3rd |
| Meat | | | |
| Spice | | | |
| Meat Fat | | | |
| Salt | | | |
| Umami | | | |
| Heat | | | |

- Repeat for TWO MORE samplings
- Aftertaste Checklist follows 4th sampling

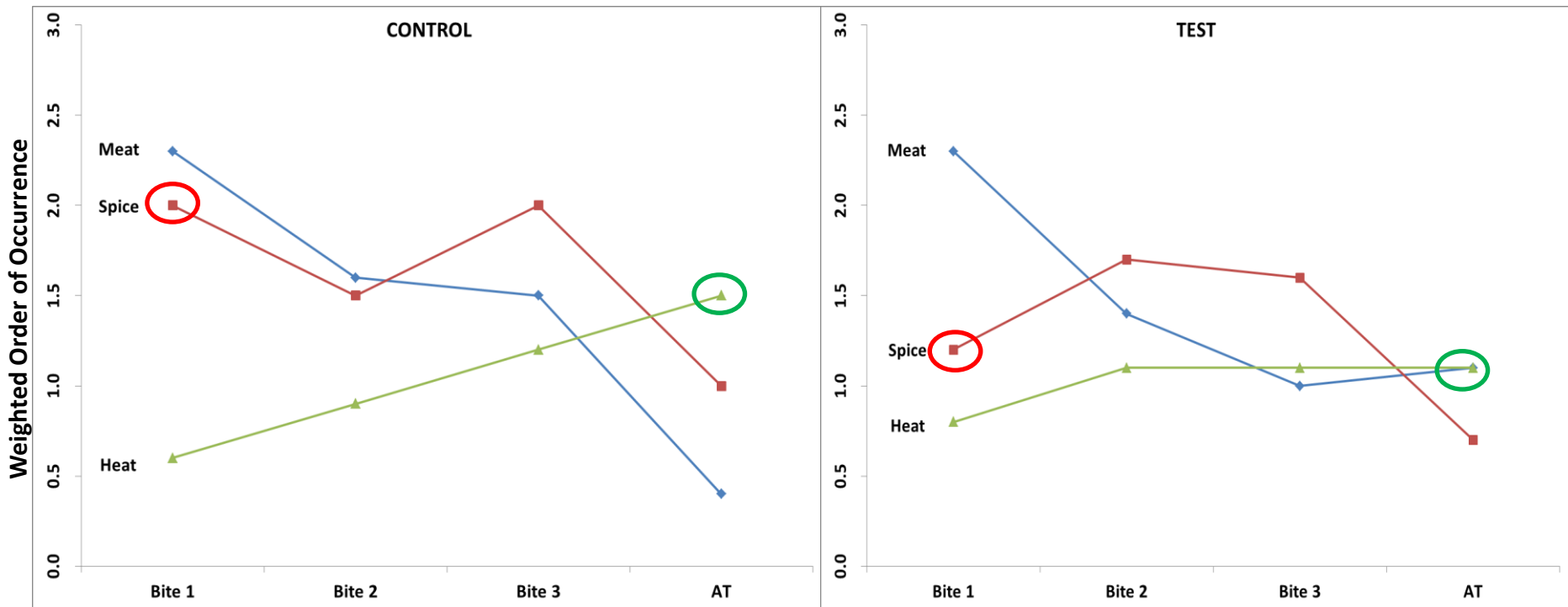
AIM FOR CLARITY, NOT CONFUSION

- Differences visually apparent, but not intuitive... plots took too much “explaining”
- Smoothed curves often mistaken for intensity changes; connecting “proportions” does not make intuitive sense



PLOTS SHOULD SUPPORT KEY POINTS

- Plot only differentiating attributes
- Highlight difference of interest (Delivery of Spicy Flavor)
- Include additional learning (Aftertaste Heat)



EMPHASIZE KEY POINTS IN CONTEXT

- Mention other data that is relevant to the project

Traditional Descriptive Analysis shows Spiciness Intensity is on target

- Clarify how TOS adds key reformulation information

TOS shows Spiciness needs to be more Upfront, and Heat needs to Linger more

Result? Supplier increased spice content to deliver earlier Spiciness + Heat in aftertaste, then blended with other flavors to maintain Spice intensity

DISCUSSION

