SWEET SUCCESS

It all started with sweet taste…

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Success = Active Listening ?

- **Active listening** is a communication technique used in counseling, training, and conflict resolution. It requires that the listener fully concentrate, understand, respond and then remember what is being said.[1]
- **Active listening** involves listening with all senses.[2]



[1] https://en.wikipedia.org/wiki/**Active_listening**
[2] http://www.skillsyouneed.com/ips/active-listening.html

LISTENING

To Your Own Voice

The Hierarchy…

Table 1—CLASSIFICATION OF SENSORY EVALUATION METHODS AND PANELS[a]

Classification of methods by function	Appropriate methods[b]	Type and No. of panelists[c]
ANALYTICAL: Evaluates differences or similarity, quality and/or quantity of sensory characteristics of a product		● Screened for interest, ability to discriminate differences and reproduce results ● Trained to function as a human analytical instrument
1. Discriminative:		● Normal sensory acuity ● Periodic requalification ● Panel size depends on product variability and judgment reproducibility ● No recommended "magic number"—a number often used is 10; a recommended minimum number is generally 5, since any fewer could represent too much dependence upon one individual's responses
a. *Difference:* Measures simply whether samples are different	Paired-comparison Duo-trio Triangle Ranking Rating difference/scalar difference from control	
b. *Sensitivity:* Measures ability of individuals to detect sensory characteristic(s)	Threshold Dilution	
2. Descriptive: Measures qualitative and/or quantitative characteristic(s)	Attribute rating Category scaling Ratio scaling (magnitude estimation) Descriptive analysis Flavor profile analysis Texture profile analysis Quantitative descriptive analysis	
AFFECTIVE: Evaluates preference and/or acceptance and/or opinions of product	Paired-preference Ranking Rating Hedonic (verbal or facial) scale Food action scale	● Randomly selected ● Untrained ● Representative of target population ● Consumers of test product ● No recommended "magic number"—minimum is generally 24 panelists, which is sometimes considered rough product screening; 50-100 panelists usually considered adequate

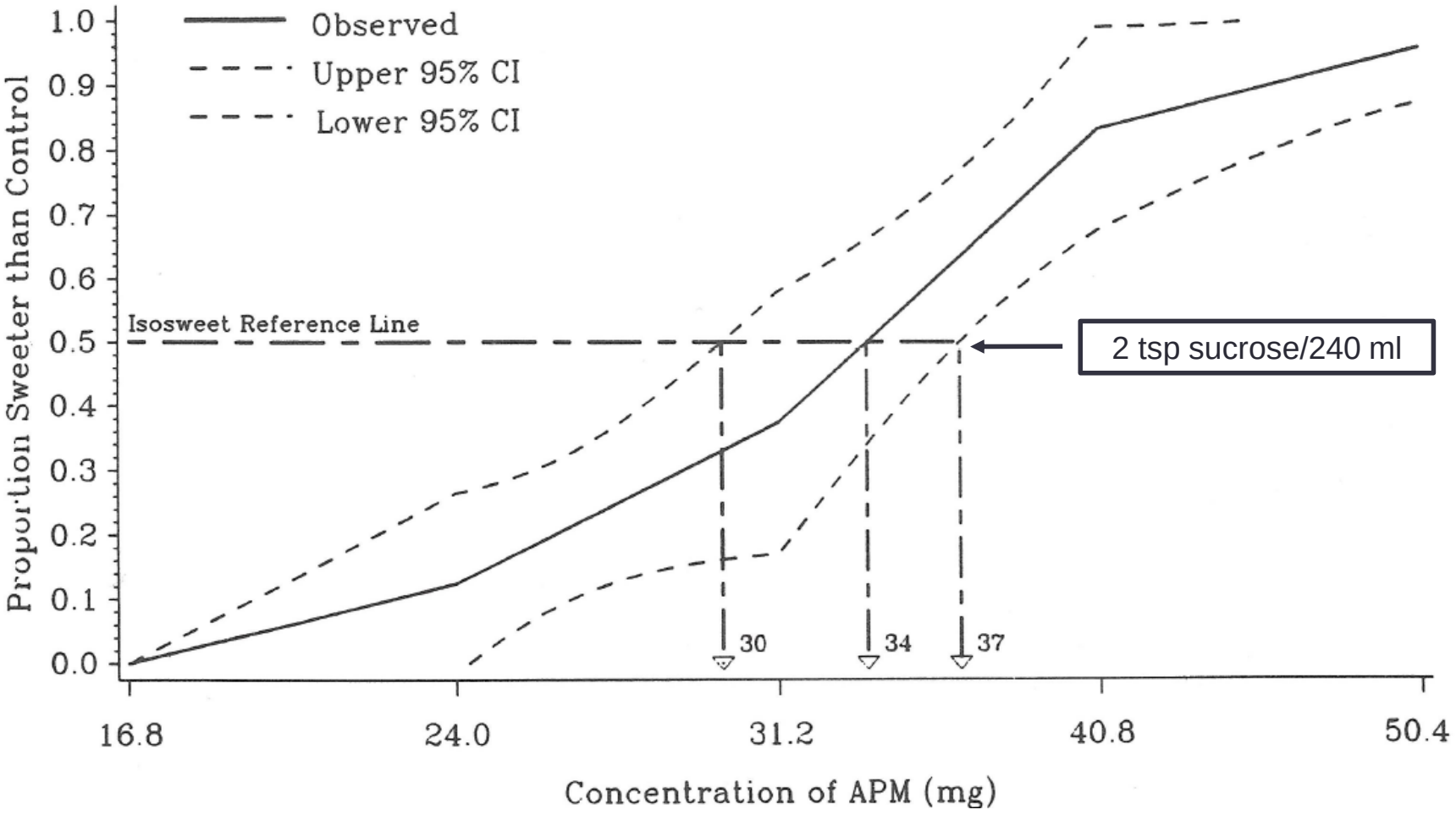
[a]Suggested references: Abbott (1973); Amerine et al. (1965); AMSA (1978); ASTM Committee E-18 (1968; 1979; 1981); Brandt et al. (1963); Caul (1957); Dawson et al. (1963); Ellis (1966; 1967; 1970); Hirsh (1974; 1975b); IFT (1964; 1979); Larmond (1977); Martin (1973); Pilgrim and Peryam (1958); Schutz (1971); Sjöström et al. (1957); Stahl and Einstein (1973); Stone et al. (1974)

[b]See Table 2

[c]Ignoring these considerations increases the possibility of bias and error in the results

From Food Technology, November, 1981

Matching The Test With The Objective!

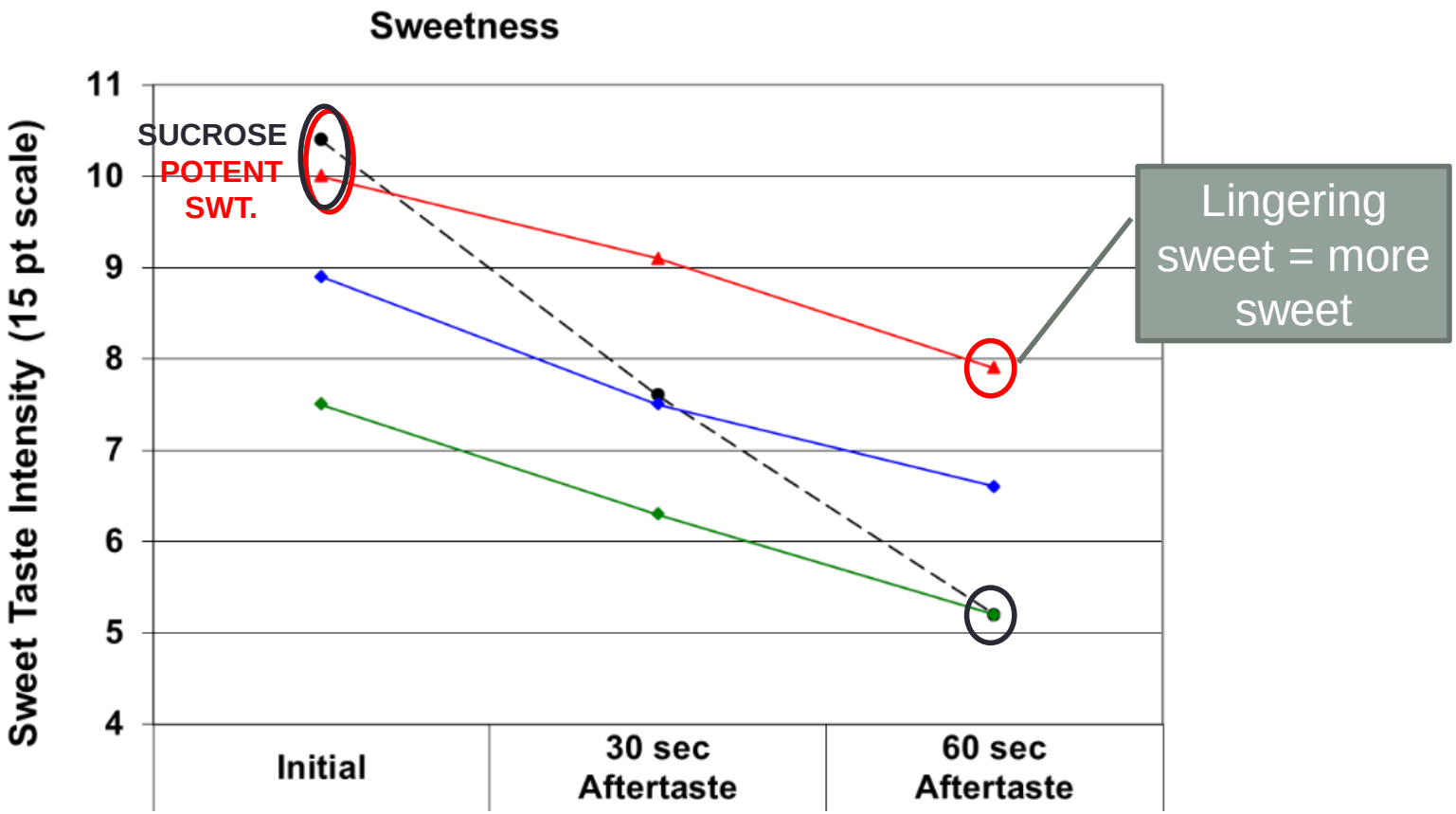


Carr, T., Pecore, S., Gibes, K. and DuBois, G. 1993. Sensory methods for sweetener evaluation. In *Flavor Measurement.* Ho, C-T. and Manley, C.H. (Ed.), pp. 219-237. Marcel Dekker, New York.

LISTENING…

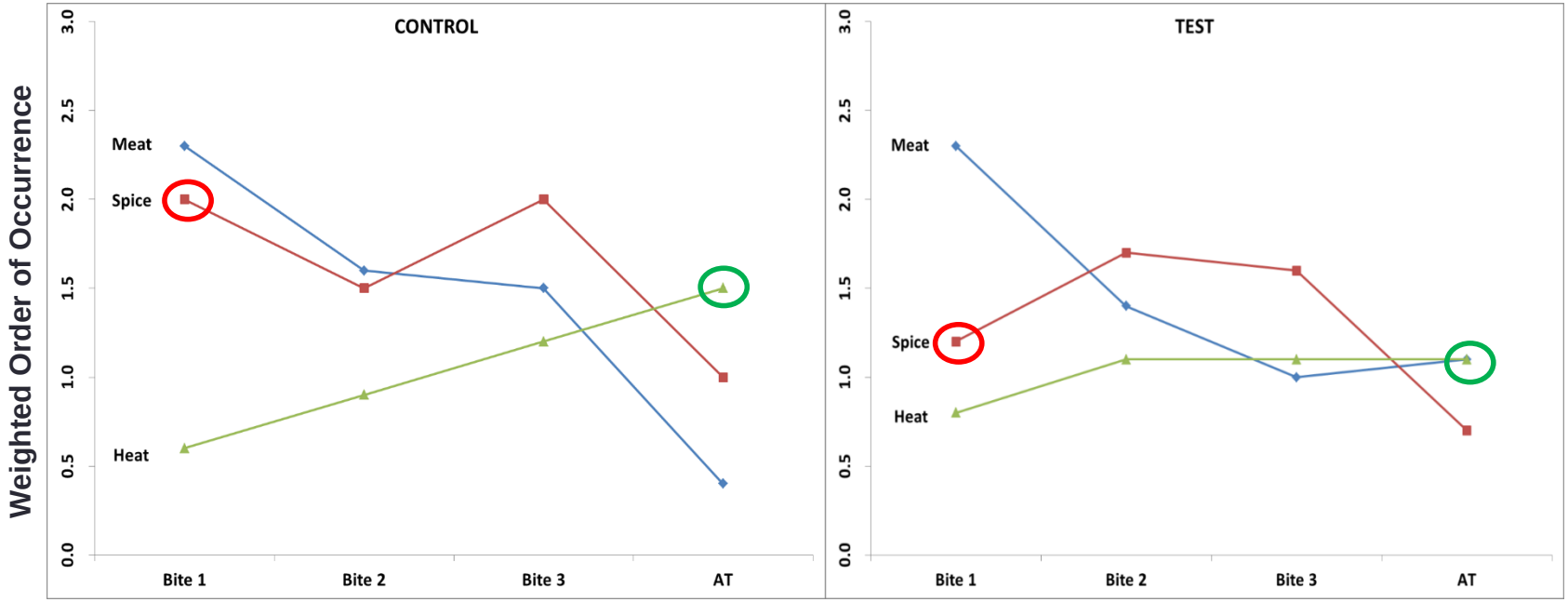
To Your Product

Consider the Whole Product



Temporal Order of Sensations

- Measures the ***order*** that key attributes ***appear***
- NOT concerned with actual appearance time or intensity of the attributes, just simply the order

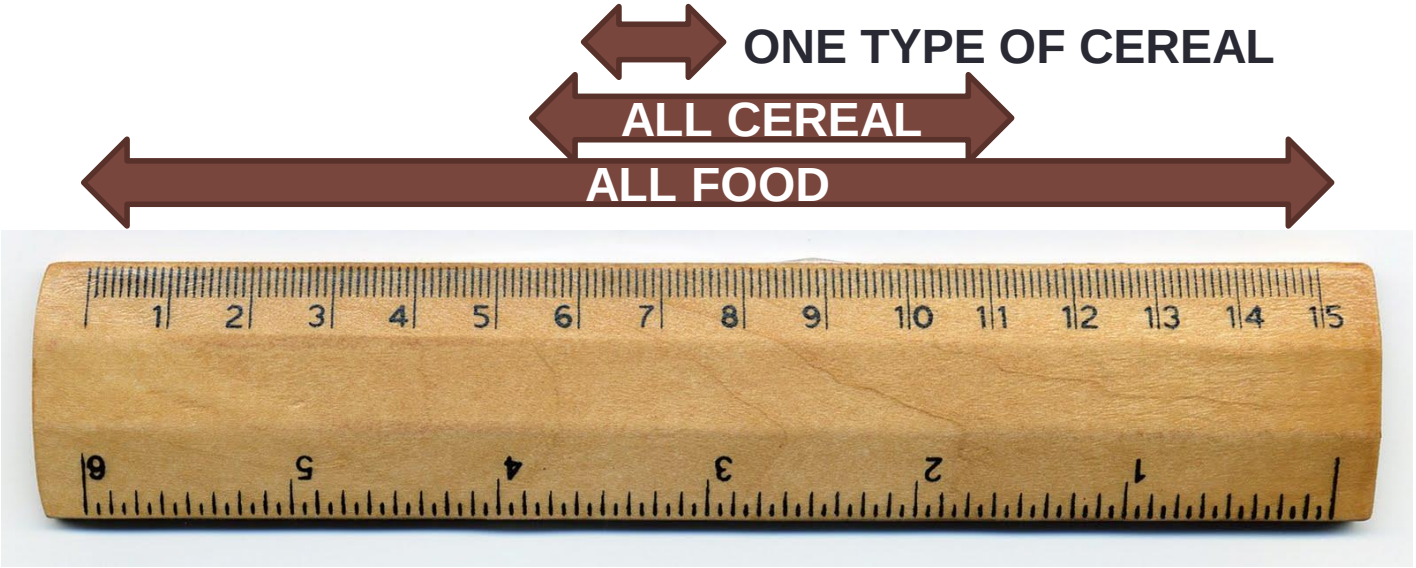


LISTENING…

To Your Product Developer

Capturing Subtleties

Rating with Intensity-Referenced Scale



Ranked – Scaling[1]

	Typical Descriptive Approach		
	1st	***2nd***	***3rd***
	Sample 1	**Sample 2**	**Sample 3**
Attribute 1	***RATE INTENSITIES***		
Attribute 2			
Attribute 3			
Attribute 4			
Attribute 5			
Attribute 6			

[1] Pecore, S., Kamerud, J, and Holschuh, N. Food Quality and Preference 40 (2015) 376–380

Ranked – Scaling[1]

		Ranked – Scaling Approach		
		Sample 1	**Sample 2**	**Sample 3**
1st	Attribute 1	***RANK BY INTENSITY, THEN RATE***		
2nd	Attribute 2			
3rd	Attribute 3			
	Attribute 4			
	Attribute 5			
	Attribute 6			

Allow Ratings in Smaller Increments Than Typical To Reflect Differences

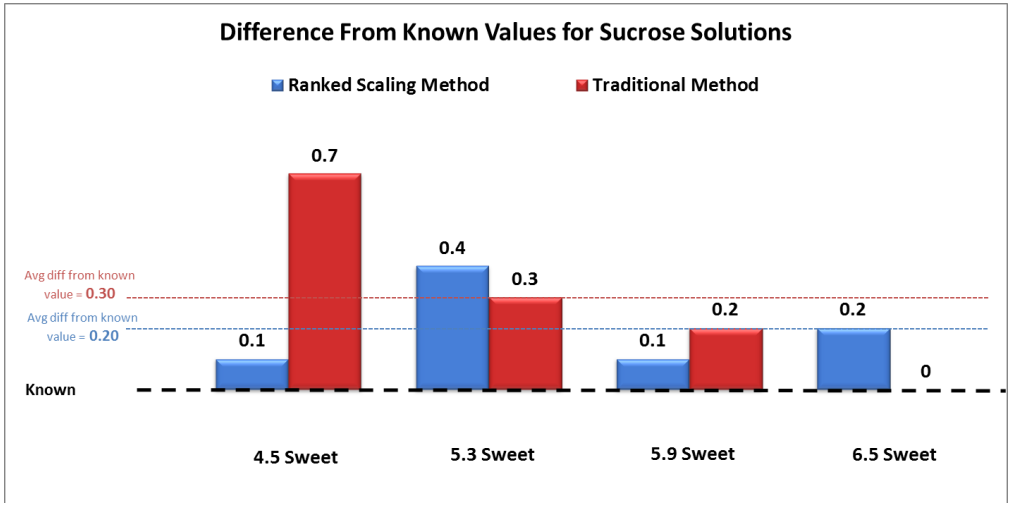
[1] Pecore, S., Kamerud, J, and Holschuh, N. Food Quality and Preference 40 (2015) 376–380

Ranked-Scaling Improved…

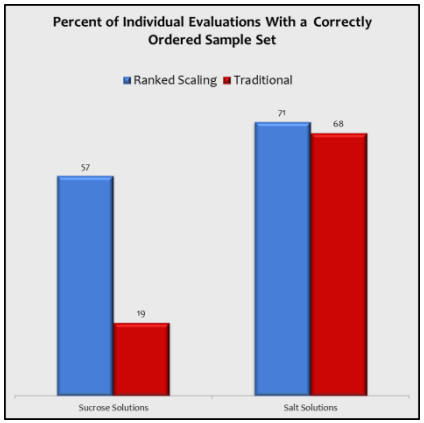
Sensitivity

Modality	Attribute	R-S	T-S
Aromatic	Grain	NS	NS
Aromatic	Cardboard	NS	NS
Aromatic	Cook	NS	NS
Aromatic	Toast	*	NS
Aromatic	Grain	*	NS
Aromatic	Brown Sweet	NS	NS
Taste	Salt	***	***
Taste	Sweet	***	***
Taste	Salt	*	NS
Taste	Sweet	NS	NS
Taste	Sweet	NS	NS
Taste	Salt	NS	NS
Texture	Hardness	***	NS
Texture	Cohesiveness	NS	NS
Texture	Roughness	***	*
Texture	Hardness	**	**
Texture	Crispness	NS	NS
Texture	Denseness	*	***
Texture	Hardness	*	NS
Texture	Crispness	NS	NS
Texture	Denseness	**	NS

Accuracy



Ordering

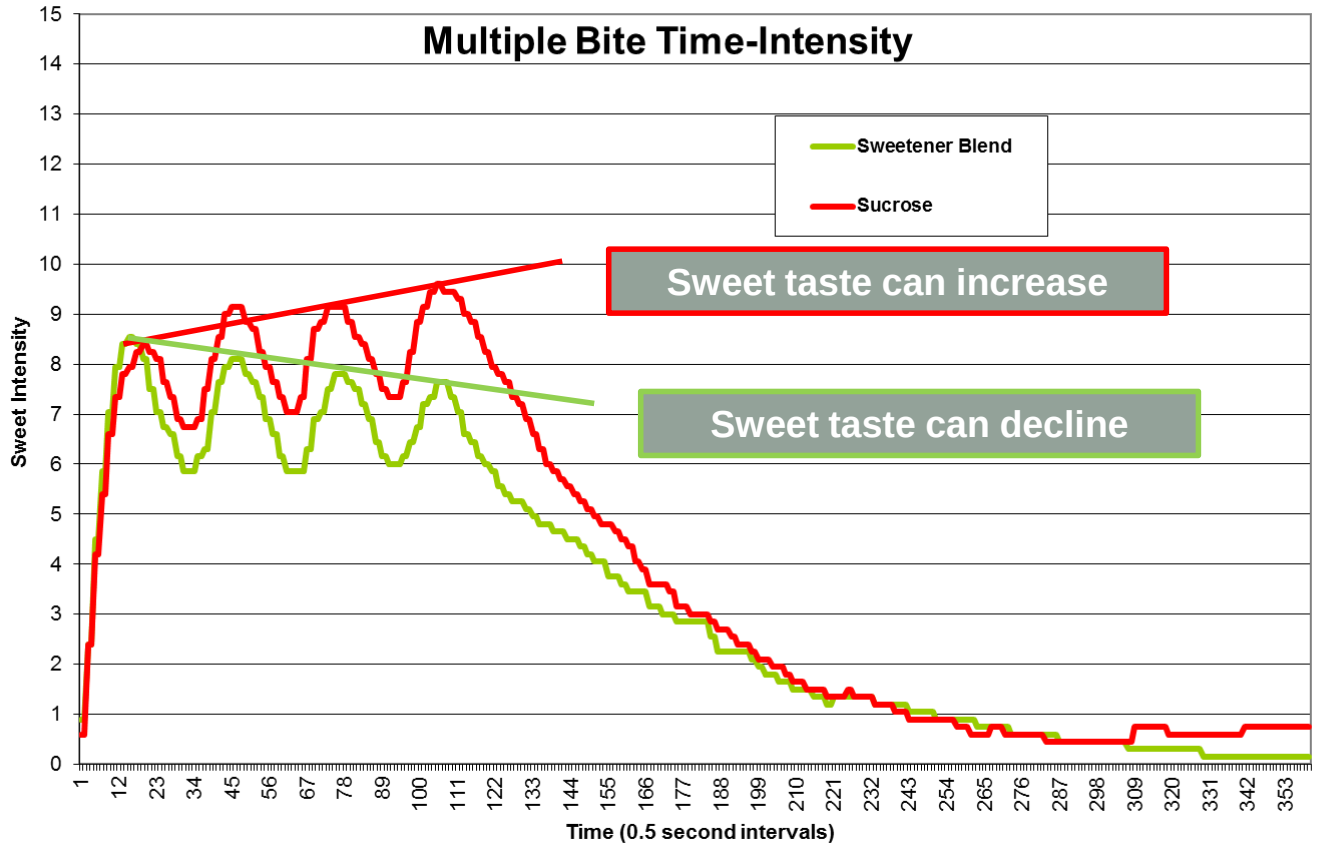


LISTENING…

To Your Consumer

Consumer Experience ≠ One Bite

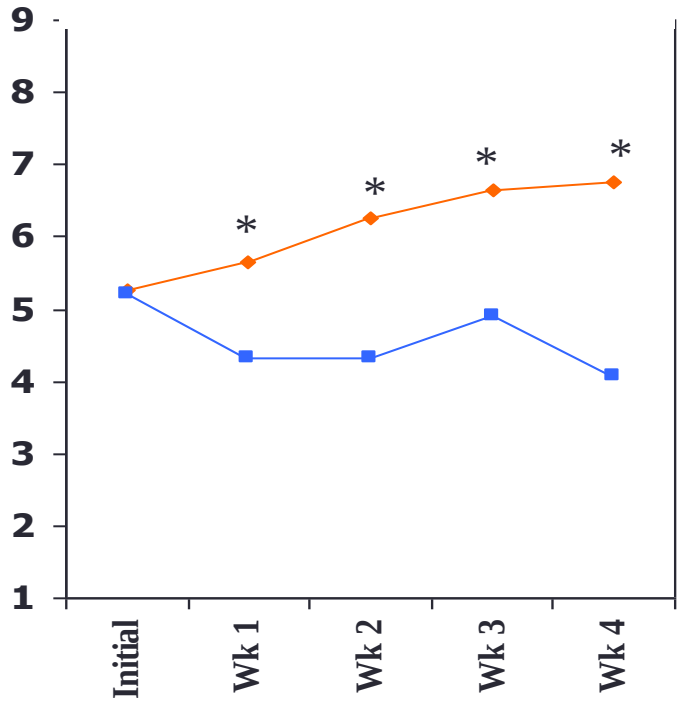
Repeated sips reveal more about the eating experience



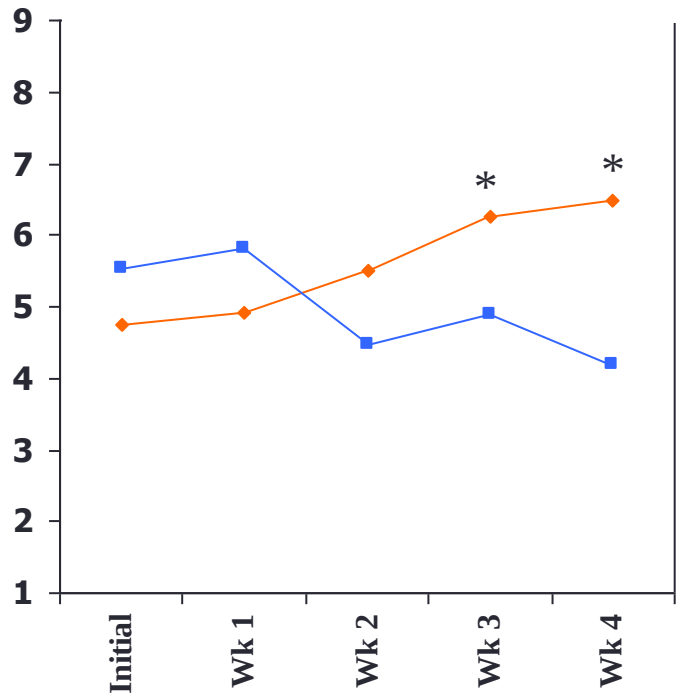
Consumer Experience ≠ One CLT

The real world impacts CLT results

Brand 1 consumed in-home



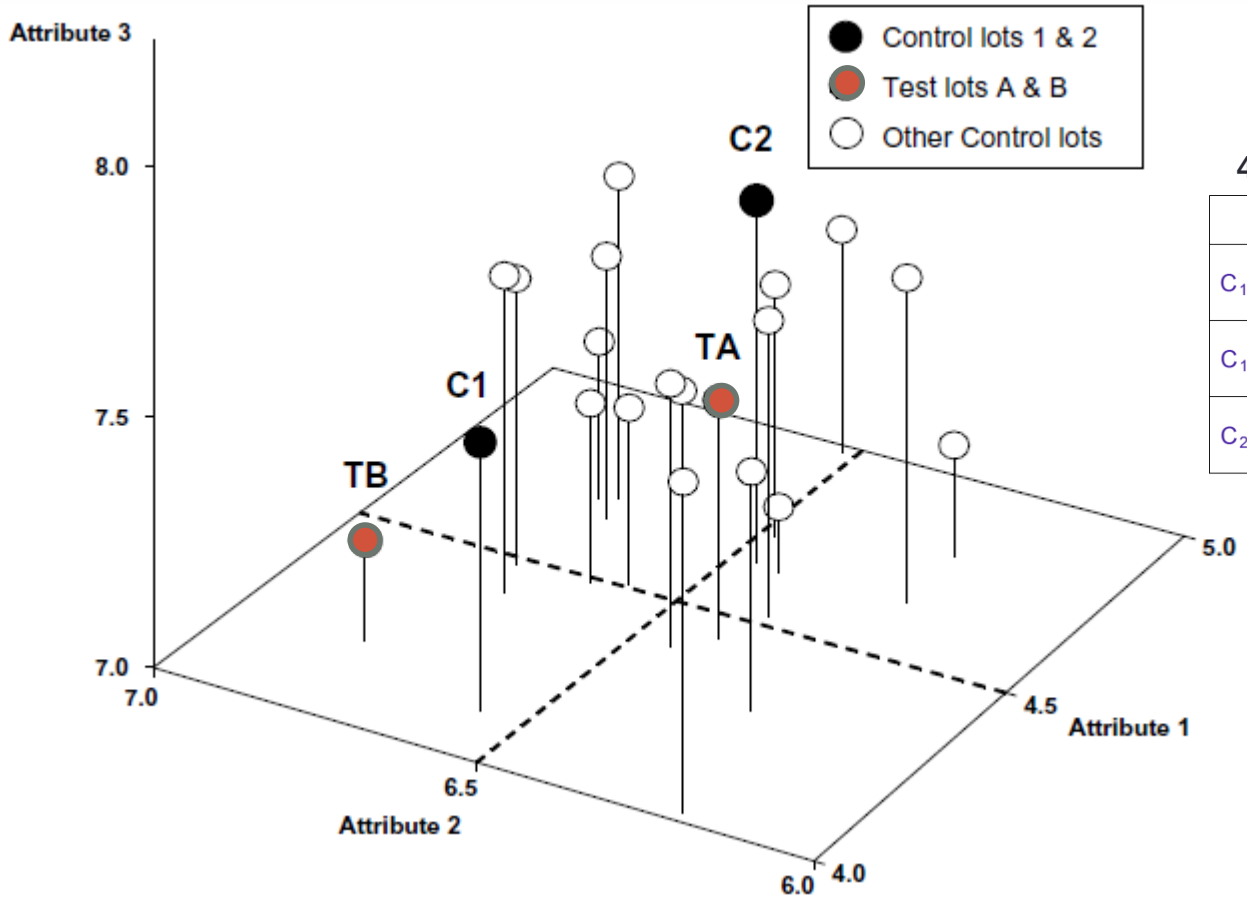
Brand 2 consumed in-home



* Denotes weeks one brand scored significantly higher than the other

Consumer Experience ≠ One Lot

Lead to development of DOD – CTV Method [1]



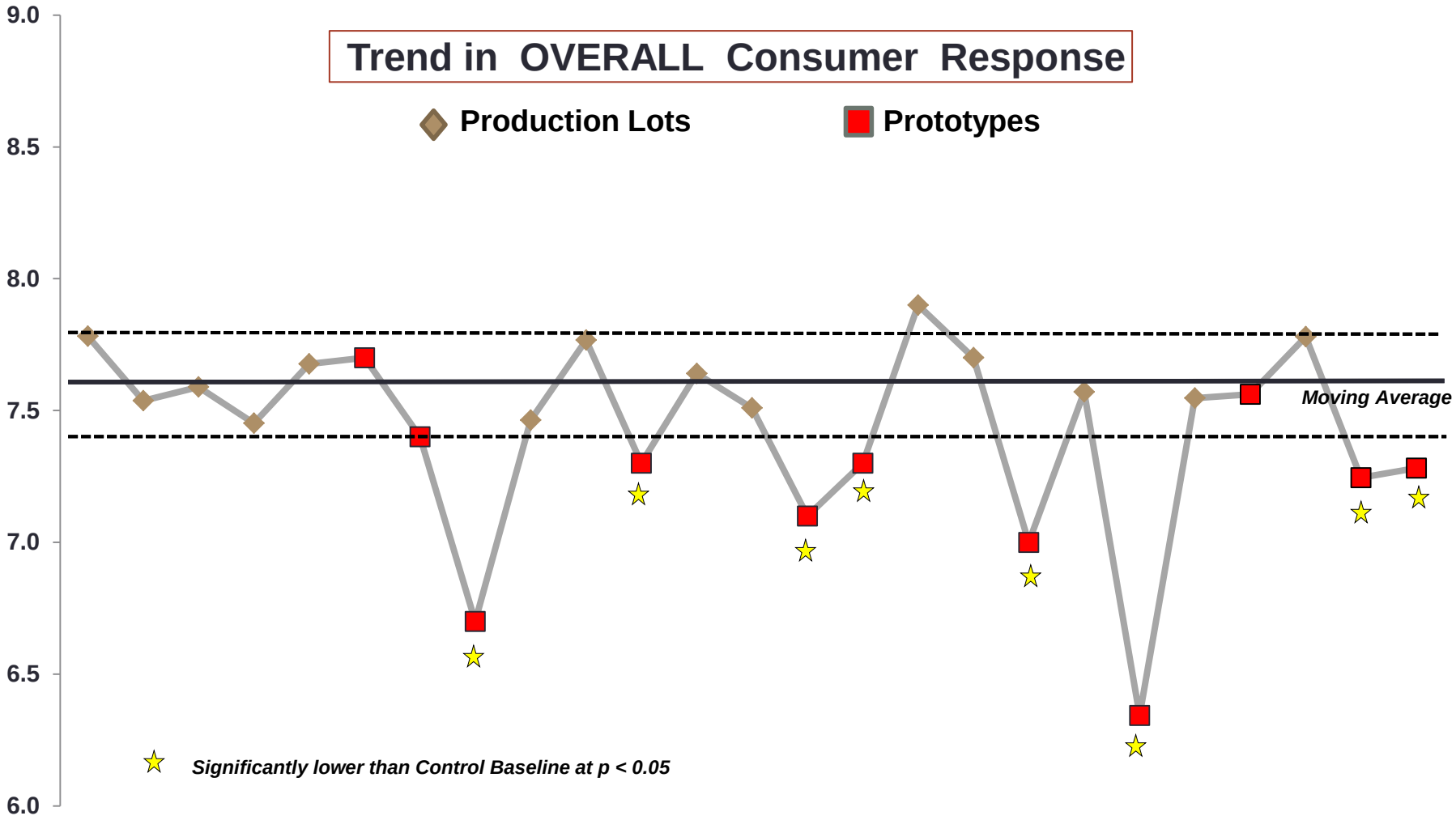
4 Comparison Sets

I	II	III	IV
C_1 C_2	T_A T_B	C_1 C_2	T_A T_B
C_1 T_A	T_A C_2	C_1 T_B	T_A C_1
C_2 T_A	T_B C_2	C_2 T_B	T_B C_1

[1] Young, T.A. Pecore, S., Stoer, N., Hulting, F., Holschuh, N., Case, F. . Food Quality and Preference 19 (2008) 734-736.

Consumer Experience ≠ One Lot

But consumers are familiar and tolerant of typical production variability

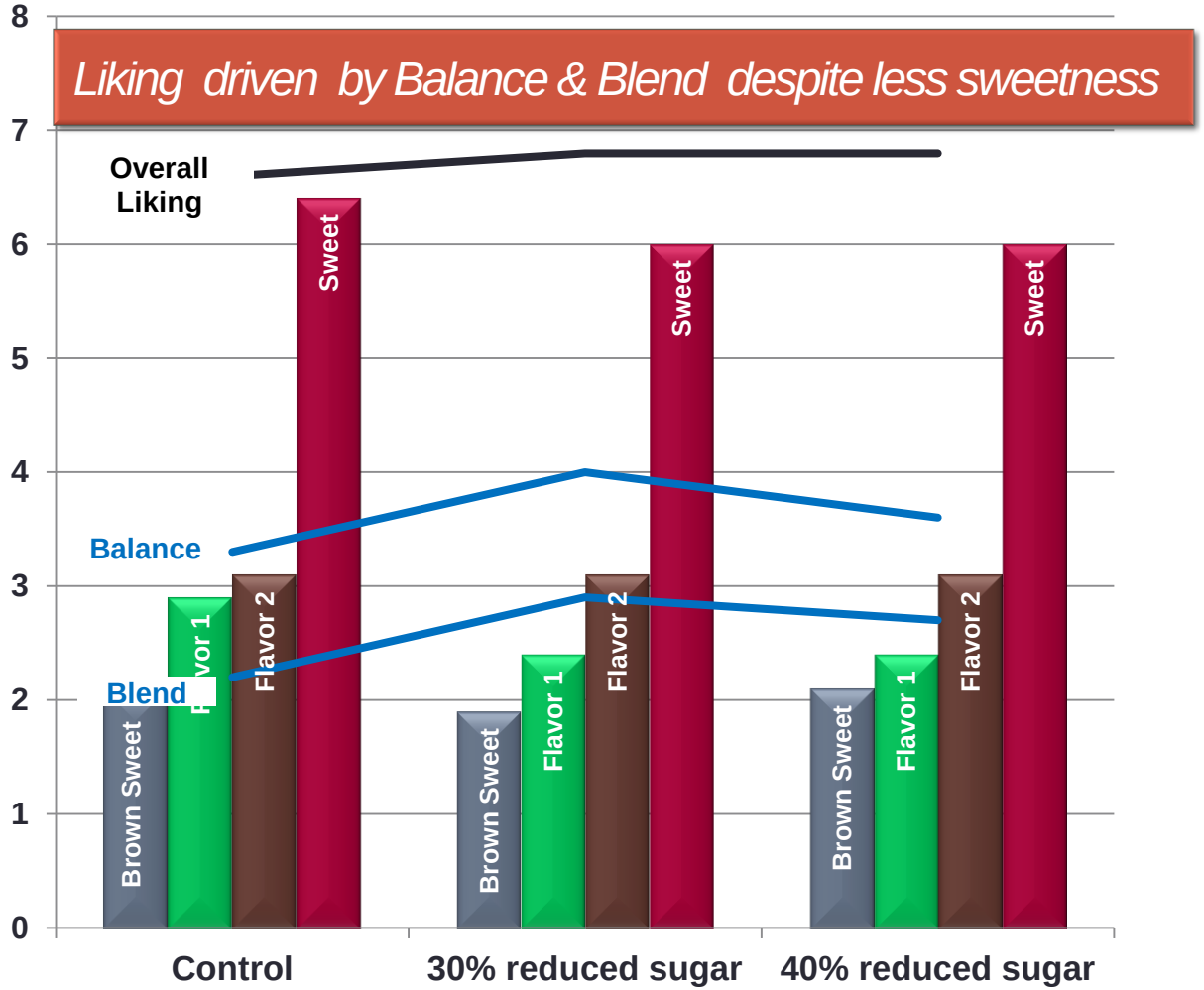


LISTENING…

To Your Colleagues

Poster[1] ⇨ Complexity Method

Measure of Harmony, Balance, Blend with Descriptive Panelists

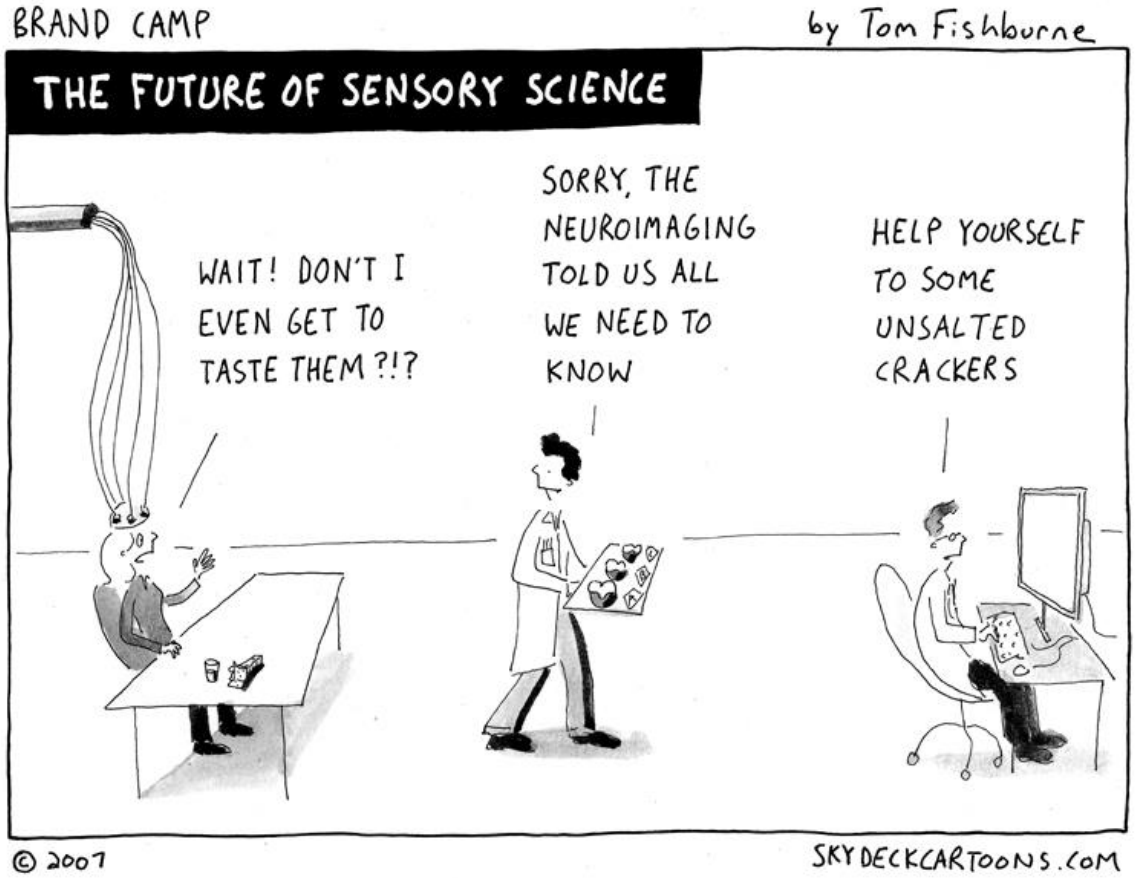


[1] M. Medel, et al., "Assessing the perceived complexity of wine", Pangborn Symposium, Florence, 2009

Sensory Success Involves You

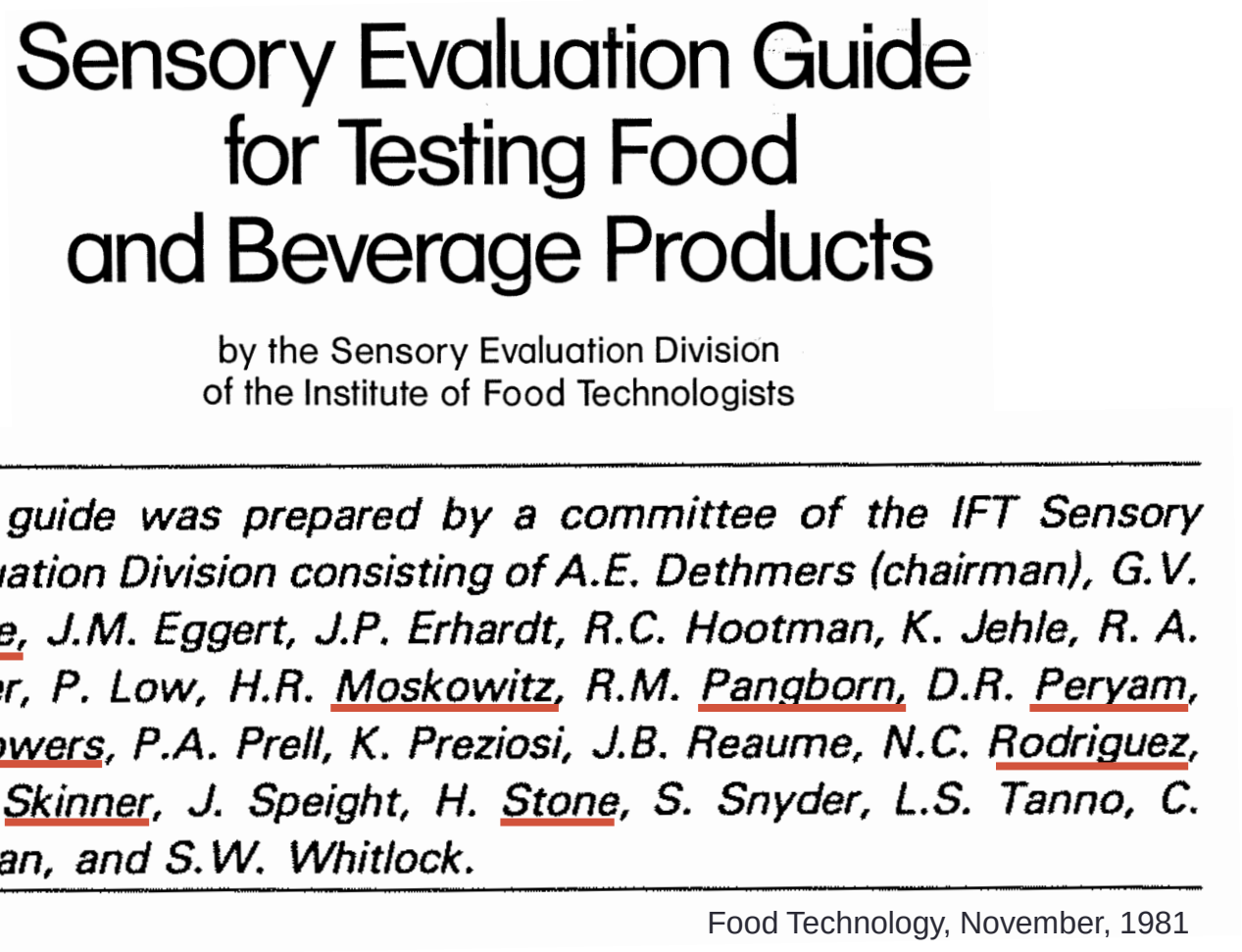
- Feel empowered to create your own “method”…

  even a simple adjustment to a current approach.



Sensory Success Involves You

- Keep the dialogue open between academia and industry



Sensory Evaluation Guide for Testing Food and Beverage Products

by the Sensory Evaluation Division of the Institute of Food Technologists

This guide was prepared by a committee of the IFT Sensory Evaluation Division consisting of A.E. Dethmers (chairman), G.V. Civille, J.M. Eggert, J.P. Erhardt, R.C. Hootman, K. Jehle, R. A. Kluter, P. Low, H.R. Moskowitz, R.M. Pangborn, D.R. Peryam, J. Powers, P.A. Prell, K. Preziosi, J.B. Reaume, N.C. Rodriguez, E.Z. Skinner, J. Speight, H. Stone, S. Snyder, L.S. Tanno, C. Tassan, and S.W. Whitlock.

Food Technology, November, 1981

Sensory Success Involves You

- Share your learnings…please.

- Adam's (Frito-Lay) talk on CATA in 2007
- King's (McCormick) talk on Emotions in 2007
- Pineau's poster on TDS in 2009
- Medel's poster on Complexity in 2009
- Castura's (CompuSense) talk on TCATA in 2014

Consider the research that resulted from these presentations!

Thank You!!

To my trusted advisors…

