



Sawtooth Software
The survey software of choice

An Introduction to Max Diff

Agenda

- ▶ Why choose MaxDiff?
- ▶ Designing a MaxDiff experiment
- ▶ SSI Web Demo
- ▶ Analyzing MaxDiff Data
- ▶ Additional Analyses
- ▶ Conclusions

SECTION 1

Why Choose Max Diff?

The Ubiquitous Monadic Rating Scale

How important are each of these factors when considering a vehicle for purchase?

	Not important 1	2	3	4	Extremely Important 5
It is luxurious	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It offers a smooth ride	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I get good value for the money	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It features the latest high-tech gadgets	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

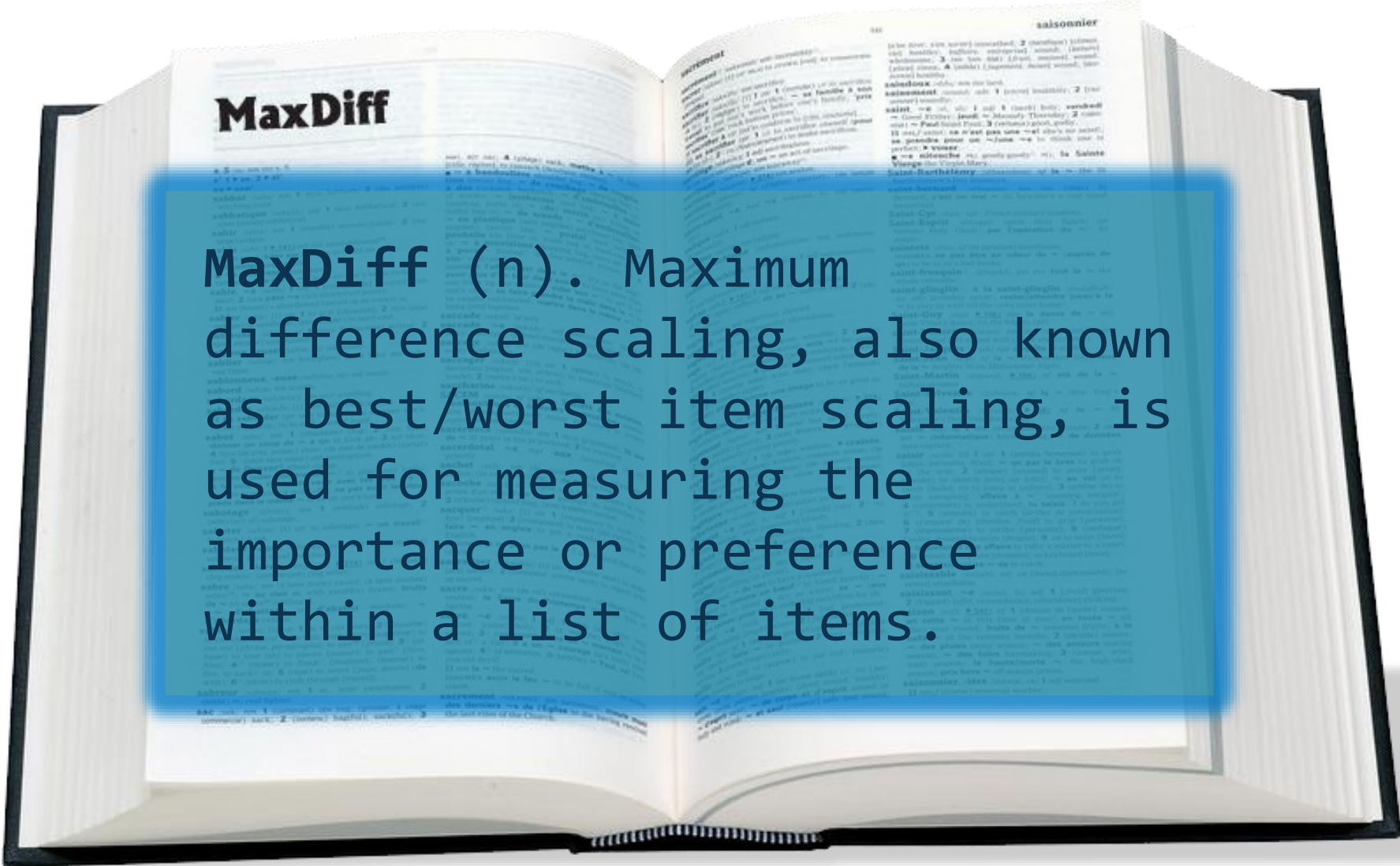
Possible Solutions

▶ Ranking exercises

- Becomes impractical with >7 items
- Ordinal scale results

▶ Constant-Sum Allocation

- Becomes impractical with >7 items
- Allocation may not be independent
- Making answers to sum to a particular value is difficult



MaxDiff (n). Maximum difference scaling, also known as best/worst item scaling, is used for measuring the importance or preference within a list of items.

Quick Overview

- ▶ Roughly comparable to a One-Attribute, multi-level CBC
- ▶ Respondents typically shown between 2-6 items at a time, asked to indicate which is best and/or which is worst
- ▶ Task is repeated many times, showing a different set of items in each task
- ▶ Resulting model provides ratio-scaled scores, or utilities, for each item



Jordan J. Louviere, PhD

Inventor of the
MaxDiff technique

1944—

Dr. Louviere is currently the Executive Director of the *Centre for the Study of Choice* at the University of Technology in Sydney, Australia

MaxDiff Tutorial Example

Imagine you were making the decision to reenlist in the Navy today.
Which of the following four factors would make you most and least likely to want to reenlist?

(1 of 20)

Makes me Most want to reenlist		Makes me Least want to reenlist
<input type="radio"/>	\$50 per month pay increase when out at sea	<input checked="" type="radio"/>
<input type="radio"/>	3-year reenlistment obligation	<input type="radio"/>
<input checked="" type="radio"/>	Increased reenlistment bonus (\$5,000)	<input type="radio"/>
<input type="radio"/>	Live in 2-person barracks when in port	<input type="radio"/>



0%



100%

MaxDiff Tutorial Example

MaxDiff Tutorial Example

MaxDiff Tutorial Example

MaxDiff Tutorial Example

Imagine you were making the decision to reenlist in the Navy today.
Which of the following four factors would make you most and least likely to want to reenlist?

(5 of 20)

Makes me Most want to reenlist		Makes me Least want to reenlist
<input type="radio"/>	Three-quarters of on-job time using your skills and training	<input type="radio"/>
<input type="radio"/>	5-year reenlistment obligation	<input checked="" type="radio"/>
<input checked="" type="radio"/>	Choice between living in 2-person barracks or 4-person barracks when in port	<input type="radio"/>
<input type="radio"/>	Both location and duty guarantees for next assignment	<input type="radio"/>



Makes me Most want to reenlist		Makes me Least want to reenlist
<input type="radio"/>	\$50 per month pay increase when out at sea	<input checked="" type="radio"/>
<input type="radio"/>	3-year reenlistment obligation	<input type="radio"/>
<input checked="" type="radio"/>	Increased reenlistment bonus (\$5,000)	<input type="radio"/>
<input type="radio"/>	Live in 2-person barracks when in port	<input type="radio"/>

▶ We then know:

- Reenlistment Bonus > \$50/month increase
- Reenlistment Bonus > 3-yr reenlistment obligation
- Reenlistment Bonus > 2-person barracks

▶ And...

- 3-yr reenlistment obligation > \$50/month increase
- 2-person barracks > \$50/month increase

▶ From two “clicks” we learn about 5 of the 6 possible paired comparisons!

- 3-yr reenlistment obligation ?? 2-person barracks

SECTION 2

Designing MaxDiff Experiments



STEP 1

Develop attribute
list and possible
prohibitions

STEP 2

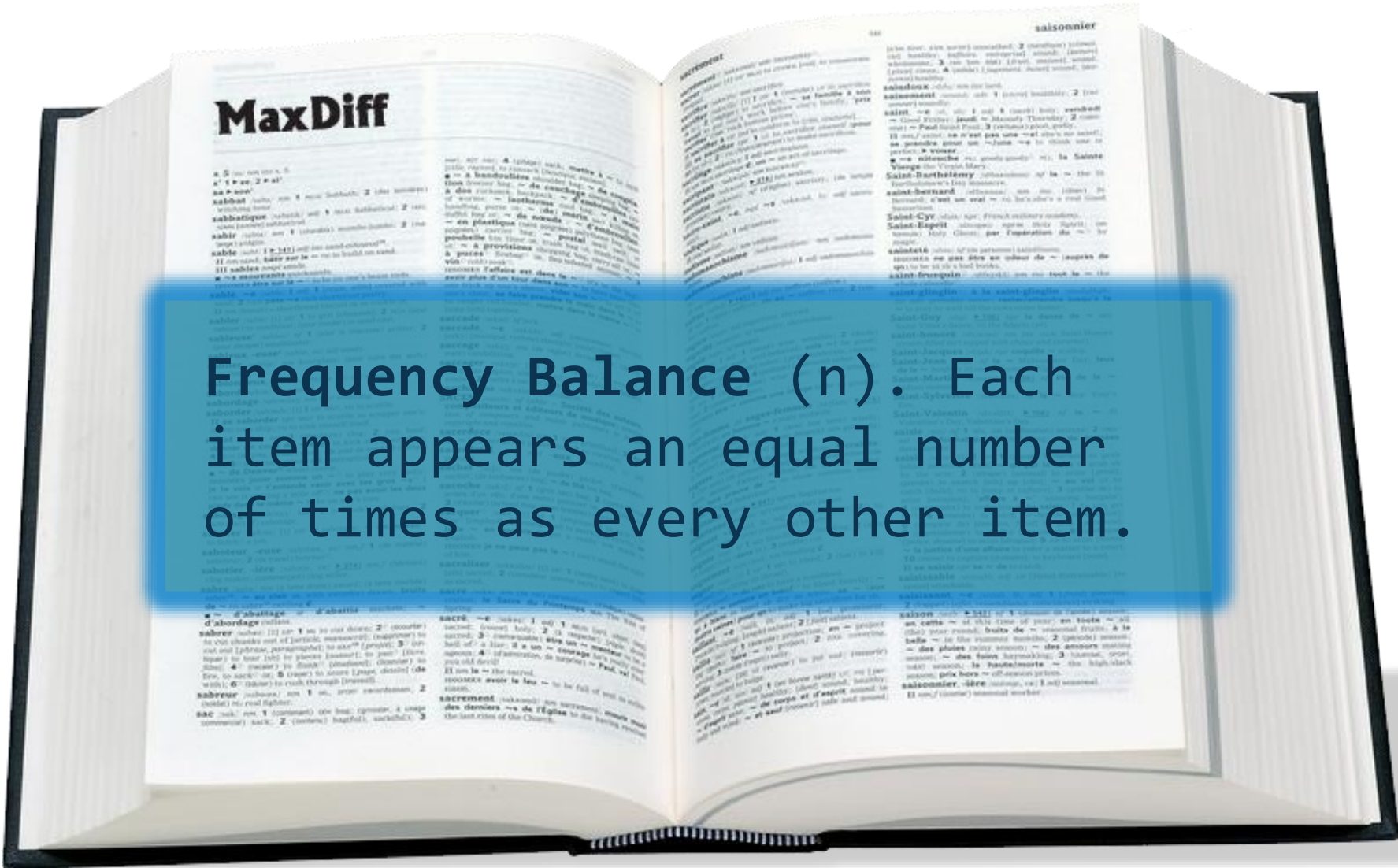
Choose the number
of items, sets, and
versions



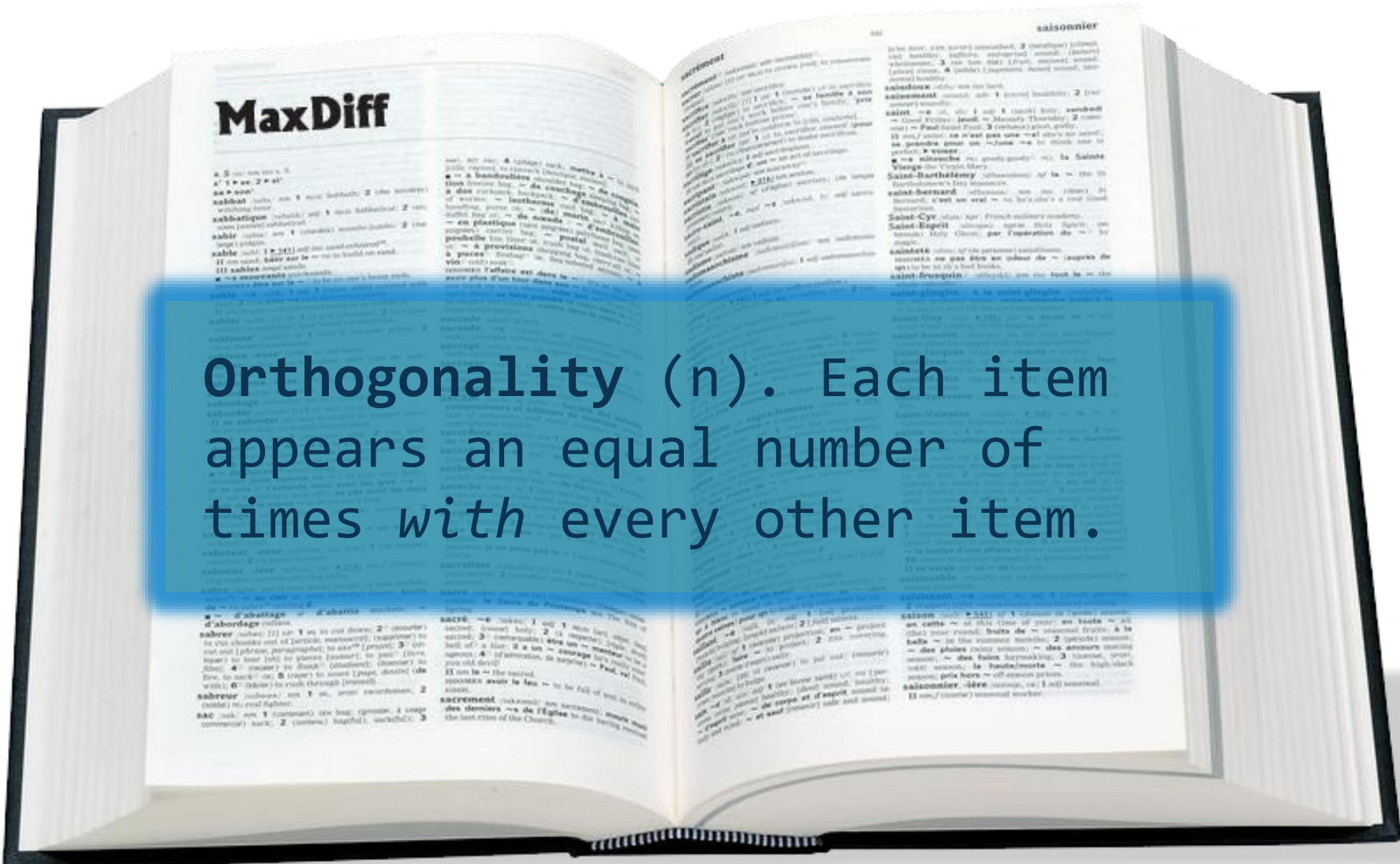


STEP 3

Generate design

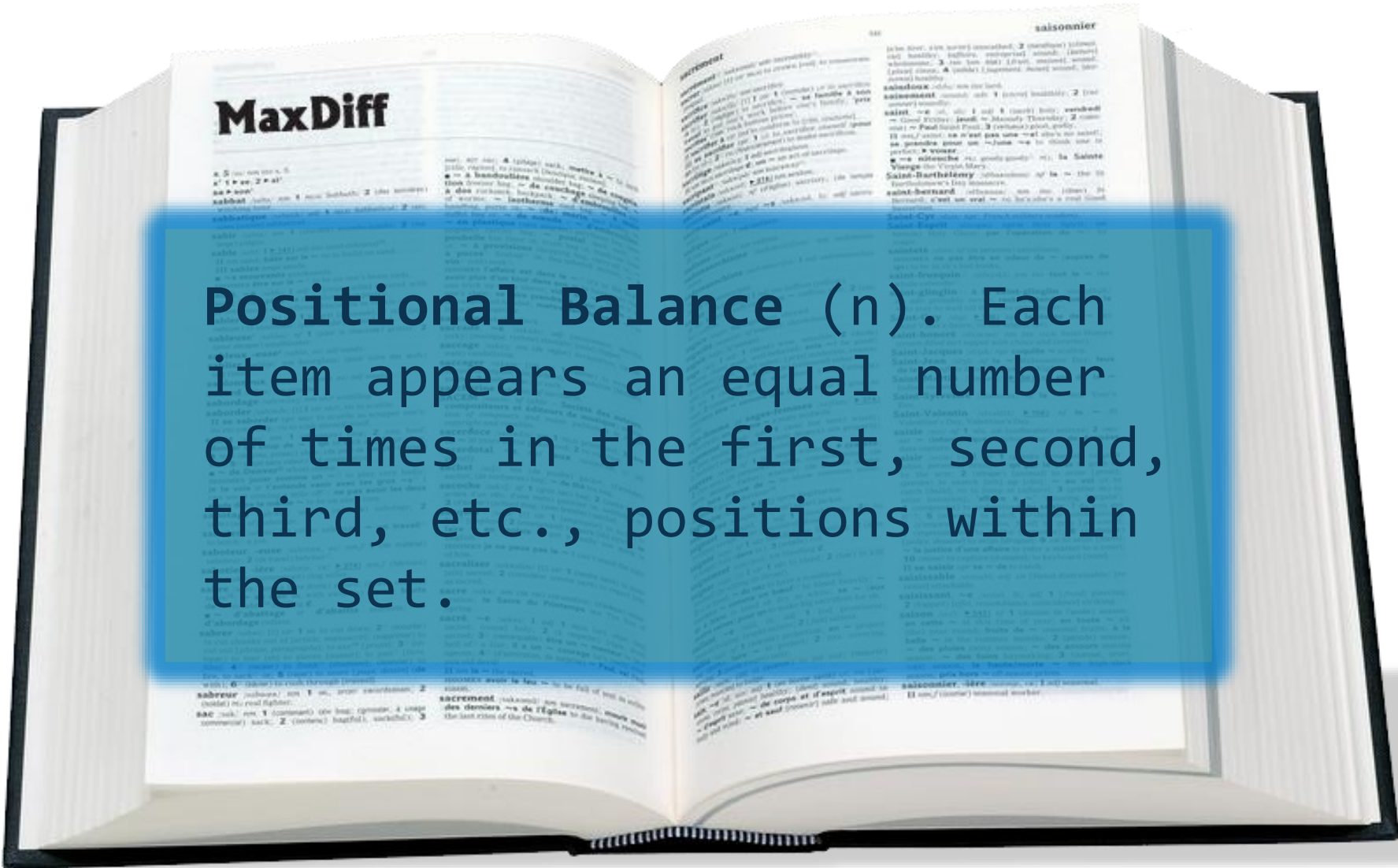


Frequency Balance (n). Each item appears an equal number of times as every other item.

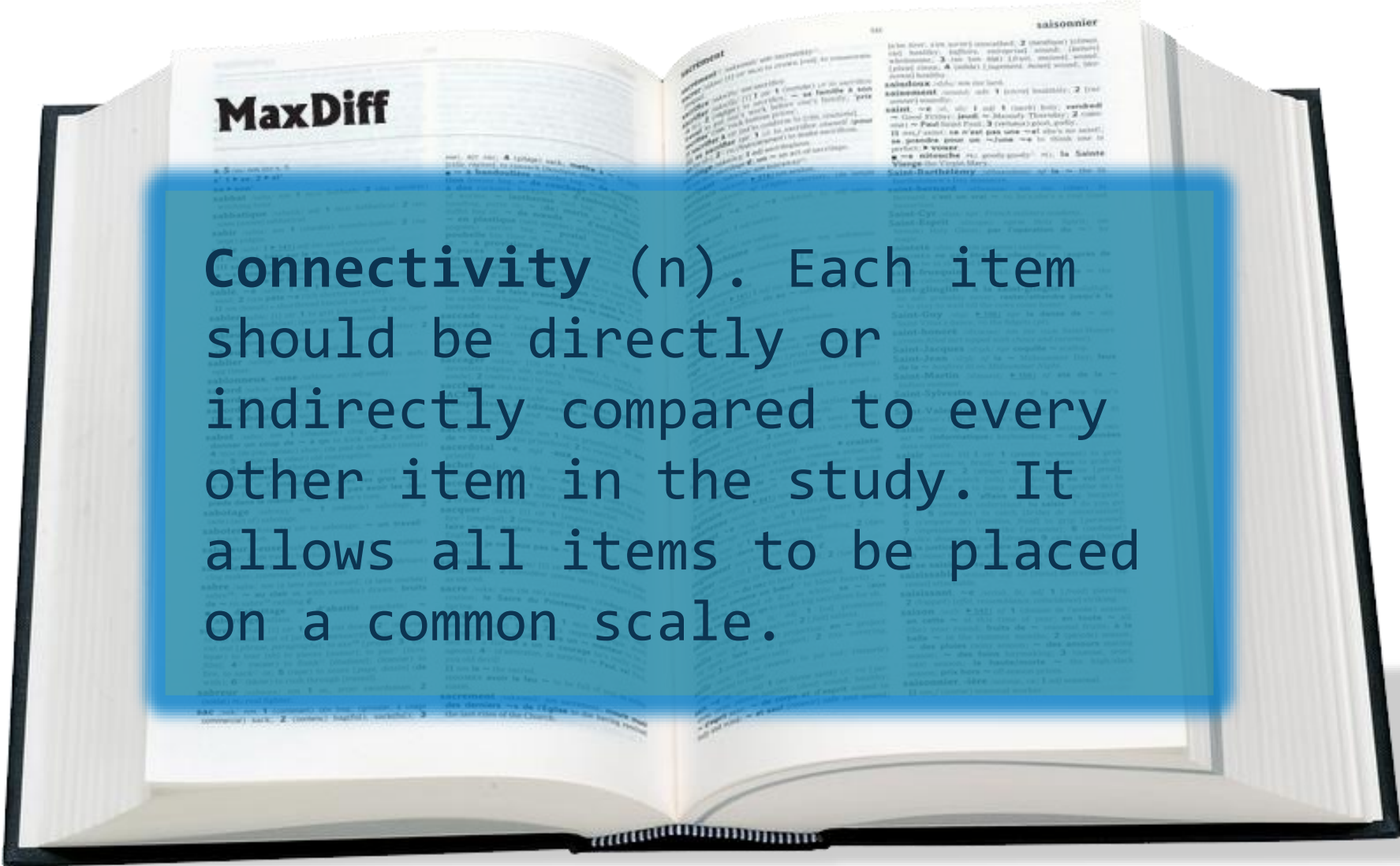


MaxDiff

Orthogonality (n). Each item appears an equal number of times with every other item.



Positional Balance (n). Each item appears an equal number of times in the first, second, third, etc., positions within the set.



Connectivity (n). Each item should be directly or indirectly compared to every other item in the study. It allows all items to be placed on a common scale.



Develop attribute list and prohibitions

- ▶ Clean eating areas (floors, tables, and chairs)
- ▶ Clean bathrooms
- ▶ Has health food items on the menu
- ▶ Typical wait time is about 5 minutes in line
- ▶ Typical wait time is about 15 minutes in line
- ▶ Prices are a good value
- ▶ Your order is always completed correctly
- ▶ Has a play area for children
- ▶ Food tastes wonderful
- ▶ Restaurant gives generously to charities



Choose items, sets, and versions

Number of items:
Number of sets:
Number of versions:



Number of Items Per Set

4/5

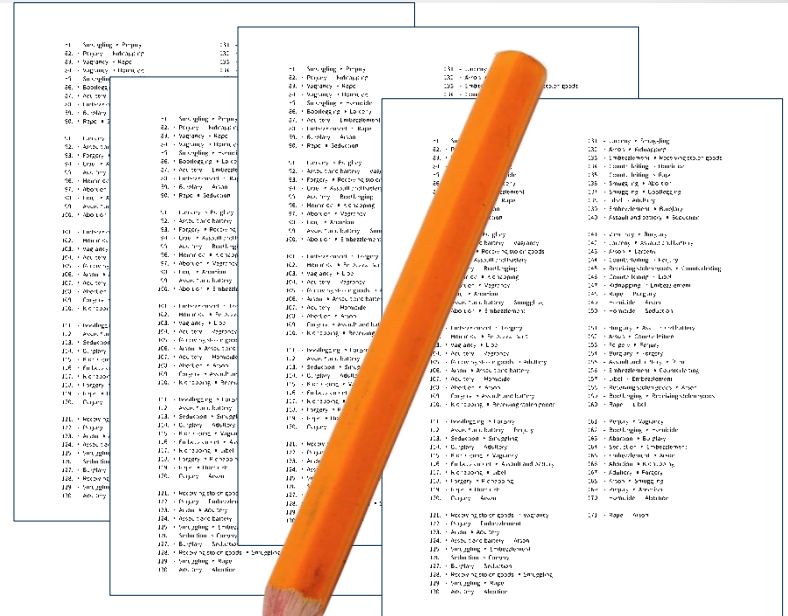
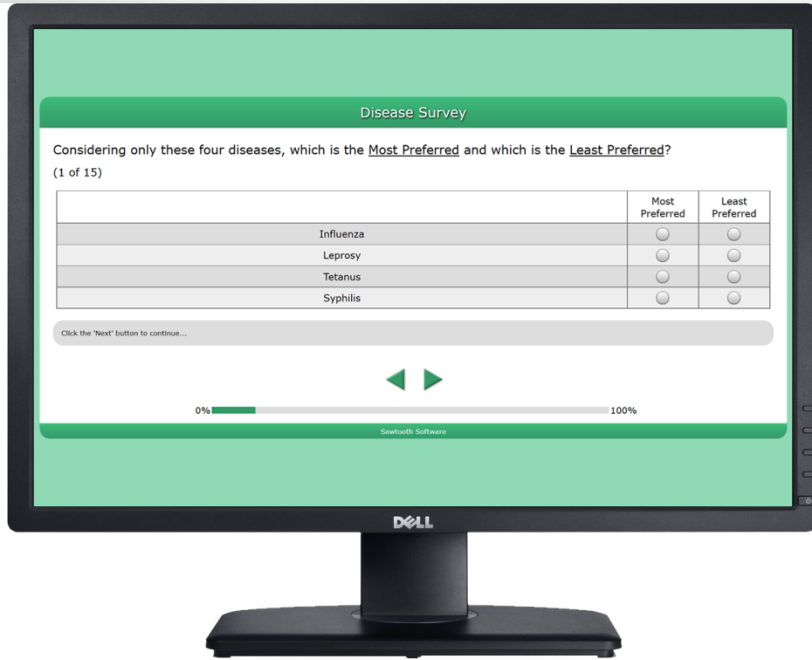
- ▶ 4 to 5 items per set
- ▶ Don't show more than half of the total items in a set
- ▶ More than 5 items is detrimental

Number of Sets per Respondent

$$\frac{\# \text{ tasks X } \# \text{ items per task}}{\text{Total } \# \text{ items}} > 3$$

$$\frac{?? \times 4}{10} > 3$$

Number of Versions/Blocks



3000

4



Choose items, sets, and versions

Number of items per set: **4**

Number of sets: **10**

Number of versions: **300**



Generate design

MaxDiff Exercise - fastfood

Question Text | Label Text | Items | Format | Design | Skip Logic

Design Settings

Number of Items (Attributes)

Number of Items per Set (Question)

Number of Sets (Questions) per Respondent

Number of Versions

Number of Iterations

Design Seed

Allow Individual Designs Lacking Connectivity

There is 1 prohibition.

Design Settings Help

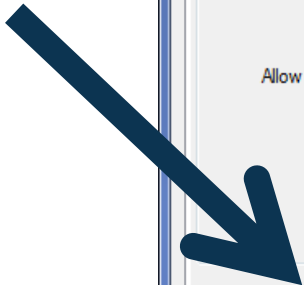
Import / Export Design

First row contains column headers (these will be ignored)

Note: Most users will not import a design, but will use those generated by the MaxDiff designer.

Press F1 on the keyboard for information about the import / export file layout.

Note: All MaxDiff questions in this exercise use this format.



How the Design Program Works

- ▶ Design algorithm similar to CBC. Algorithm “builds up” the tasks, seeking one- and two-way frequency balance. Then, it “swaps” item positions on cards for positional balance.
- ▶ The design process is repeated 1000 separate times, and the replication that demonstrates the best one-way balance is selected.
 - If multiple designs have the same degree of one-way balance, then we select among those designs based on the best two-way balance.
 - If multiple designs have the same degree of one-way and two-way balance, then we select among those designs based on the best positional balance.

SECTION 3

SSI Web Demo

1. Enter question text

MaxDiff Exercise - fastfood

Question Text Label Text Items Format Design Skip Logic

Header 1 Please consider how important different features are when selecting a restaurant to visit.

Header 2 Considering only these four features, which is the <u>Most Important</u> and which is the <u>Least Important</u>?

Footer Click the 'Next' button to continue...

Rename Advanced... Note: All MaxDiff questions in this exercise use this format. Preview OK Cancel

2. Paste items from document

MaxDiff Exercise - fastfood

Question Text | Label Text | **Items** | Format | Design | Skip Logic

List

New List

Existing List

Predefined List Members

1. Clean eating areas (floors, tables, and chairs)
2. Clean bathrooms
3. Has health food items on the menu
4. Typical wait time is about 5 minutes in line
5. Typical wait time is about 15 minutes in line
6. Prices are very reasonable
7. Your order is always completed correctly
8. Has a play area for children
9. Food tastes wonderful
10. Restaurant gives generously to charities

Item Format

Add... Edit Delete

Settings for Selected List Member(s)

Respondent Specify ("Other Specify")

Exclusive ("None of the Above")

Rename Advanced... Note: All MaxDiff questions in this exercise use this format. Preview OK Cancel

Click this button to paste items

3. Type in your design numbers

MaxDiff Exercise - fastfood

Question Text | Label Text | Items | Format | Design | Skip Logic

Design Settings

Design Settings Help

Number of Items (Attributes)

Number of Items per Set (Question)

Number of Sets (Questions) per Respondent

Show Advanced Settings

Import / Export Design

Import Design...

First row contains column headers (these will be ignored)

Note: Most users will not import a design, but will use those generated by the MaxDiff designer.

Export Design...

Press F1 on the keyboard for information about the import / export file layout.

Generate Design Test Design

Rename Advanced... Note: All MaxDiff questions in this exercise use this format. Preview OK Cancel

4. Specify the prohibitions

The image shows two overlapping windows from the Sawtooth Software MaxDiff application. The background window is titled "MaxDiff Exercise - fastfood" and has tabs for "Question Text", "Label Text", "Items", "Format", "Design", and "Skip Logic". The "Design" tab is active, showing "Design Settings" with various input fields and checkboxes. A green circle highlights the "Hide Advanced Settings" button. The foreground window is titled "MaxDiff Prohibitions" and contains two lists. The "Prohibit item" list has 10 items, with item 4, "Typical wait time is about 5 minutes in line", selected. The "from appearing with item(s)" list has 9 items, with item 5, "Typical wait time is about 15 minutes in line", checked. At the bottom of the foreground window are buttons for "Import", "Export", "Delete All", "OK", and "Cancel".

MaxDiff Exercise - fastfood

Question Text | Label Text | Items | Format | Design | Skip Logic

Design Settings

Number of Items (Attributes) 10

Number of Items per Set (Question) 4

Number of Sets (Questions) per Respondent 10

Hide Advanced Settings

Number of Versions 300

Number of Iterations 1000

Design Seed 1

Favor Two-Way Balance

Allow Individual Designs Lacking Connectivity

Prohibitions...

There is 1 prohibition.

Generate Design Test Design

Rename Advanced... Note: All MaxDiff questions

MaxDiff Prohibitions

Prohibit item

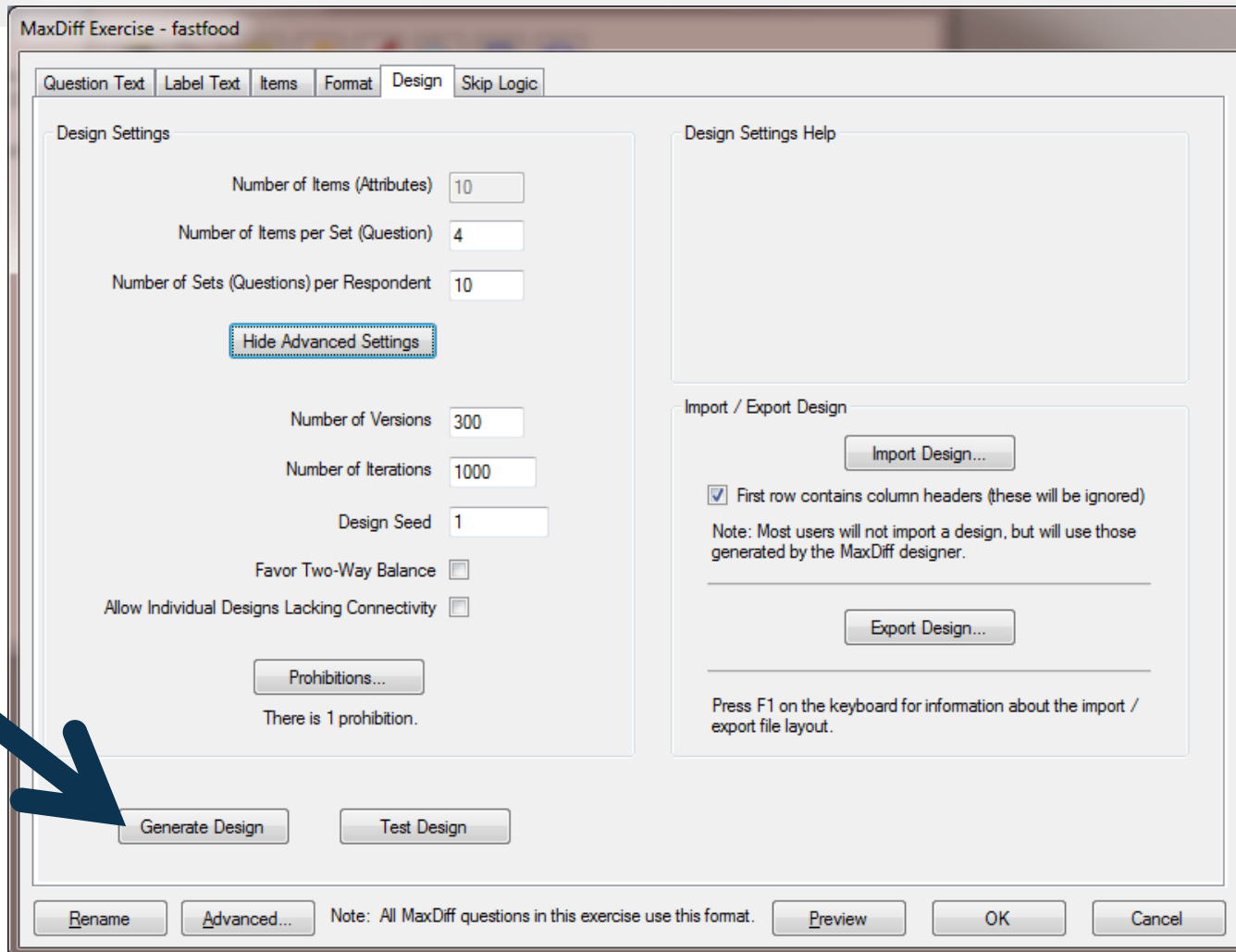
- Clean eating areas (floors, tables, and chairs)
- Clean bathrooms
- Has health food items on the menu
- Typical wait time is about 5 minutes in line
- Typical wait time is about 15 minutes in line
- Prices are very reasonable
- Your order is always completed correctly
- Has a play area for children
- Food tastes wonderful
- Restaurant gives generously to charities

from appearing with item(s)

- Clean eating areas (floors, tables, and chairs)
- Clean bathrooms
- Has health food items on the menu
- Typical wait time is about 15 minutes in line
- Prices are very reasonable
- Your order is always completed correctly
- Has a play area for children
- Food tastes wonderful
- Restaurant gives generously to charities

Import Export Delete All OK Cancel

5. Click “generate design”



MaxDiff Exercise - fastfood

Question Text | Label Text | Items | Format | Design | Skip Logic

Design Settings

Number of Items (Attributes)

Number of Items per Set (Question)

Number of Sets (Questions) per Respondent

Number of Versions

Number of Iterations

Design Seed

Favor Two-Way Balance

Allow Individual Designs Lacking Connectivity

There is 1 prohibition.

Design Settings Help

Import / Export Design

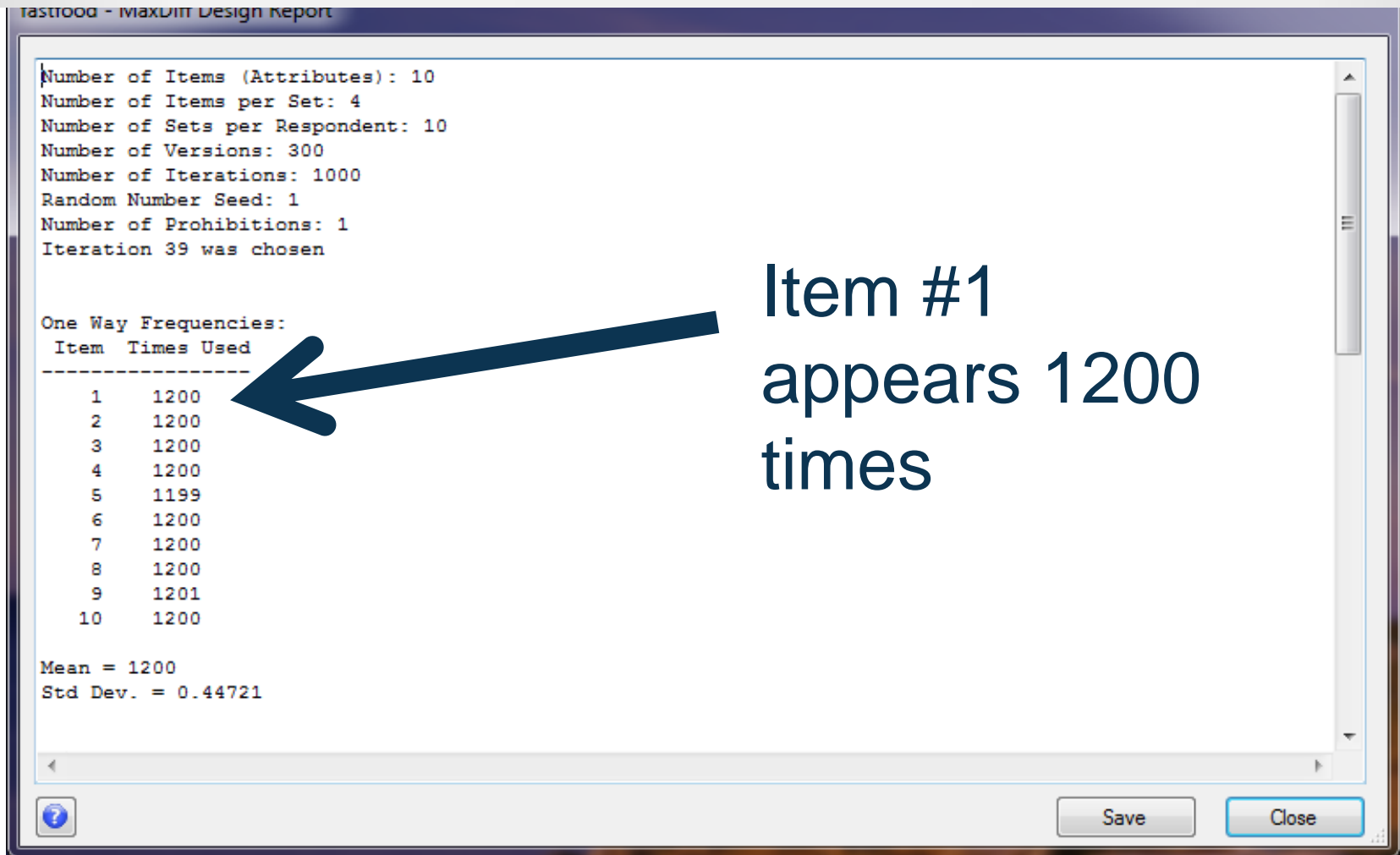
First row contains column headers (these will be ignored)

Note: Most users will not import a design, but will use those generated by the MaxDiff designer.

Press F1 on the keyboard for information about the import / export file layout.

Note: All MaxDiff questions in this exercise use this format.

6. Review the design report



Design Report

Number of Items (Attributes): 10
Number of Items per Set: 4
Number of Sets per Respondent: 10
Number of Versions: 300
Number of Iterations: 1000
Random Number Seed: 1
Number of Prohibitions: 1
Iteration 39 was chosen

One Way Frequencies:

Item	Times Used
1	1200
2	1200
3	1200
4	1200
5	1199
6	1200
7	1200
8	1200
9	1201
10	1200

Mean = 1200
Std Dev. = 0.44721

Item #1
appears 1200
times

Save Close

fastfood - MaxDiff Design Report

Two Way Frequencies:

Item\	1	2	3	4	5	6	7	8	9	10
1	1200	386	385	450	451	385	385	386	386	386
2	386	1200	386	450	449	385	386	386	387	385
3	385	386	1200	450	449	386	386	386	386	386
4	450	450	450	1200	0	450	449	450	451	450
5	451	449	449	0	1199	450	449	449	450	450
6	385	385	386	450	450	1200	387	386	385	386
7	385	386	386	449	449	386	1200	386	386	386
8	386	386	386	450	449	386	386	1200	386	385
9	386	387	386	451	450	385	386	386	1201	386
10	386	385	386	450	450	450	386	385	386	1200

Off Diagonal Non-prohibited Elements
Mean = 409.09091
Std Dev. = 30.788

Positional Frequencies:

Item	Pos.	1	2	3	4
1		300	301	299	300
2		300	300	301	299
3		300	301	299	300
4		300	300	300	300

Prohibitions

Save Close

fastfood - MaxDiff Design Report

7	385	386	386	449	449	387	1200	386	386	386
8	386	386	386	450	449	386	386	1200	386	385
9	386	387	386	451	450	385	386	386	1201	386
10	386	385	386	450	450	386	386	385	386	1200

Off Diagonal Non-prohibited Elements
Mean = 409.09091
Std Dev. = 30.788

Positional Frequencies:

	Pos.	1	2	3
Item	1	300	301	299
	2	300	300	301
	3	300	301	299
	4	300	300	300
	5	300	299	300
	6	300	300	300
	7	300	300	300
	8	300	299	301
	9	300	300	300
	10	300	300	300

Mean = 300
Std Dev. = 0.5

Item 1 appears in the third position 299 times

Save Close

7. Click “Preview”

MaxDiff Exercise - fastrood

Question Text | Label Text | Items | Format | Design | Skip Logic

Design Settings

Number of Items (Attributes)

Number of Items per Set (Question)

Number of Sets (Questions) per Respondent

Number of Versions

Number of Iterations

Design Seed

Favor Two-Way Balance

Allow Individual Designs Lacking Connectivity

There is 1 prohibition.

Design Settings Help

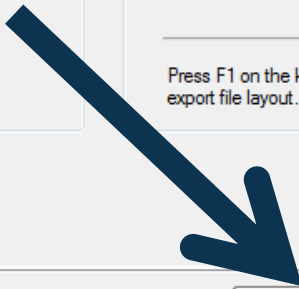
Import / Export Design

First row contains column headers (these will be ignored)

Note: Most users will not import a design, but will use those generated by the MaxDiff designer.

Press F1 on the keyboard for information about the import / export file layout.

Note: All MaxDiff questions in this exercise use this format.



Preview

Please consider how important different features are when selecting a restaurant to visit.
Considering only these four features, which is the Most Important and which is the Least Important?

	Most Important	Least Important
Has health food items on the menu	<input type="radio"/>	<input type="radio"/>
Food tastes wonderful	<input type="radio"/>	<input type="radio"/>
Typical wait time is about 15 minutes in line	<input type="radio"/>	<input type="radio"/>
Clean eating areas (floors, tables, and chairs)	<input type="radio"/>	<input type="radio"/>

Click the 'Next' button to continue...

OK

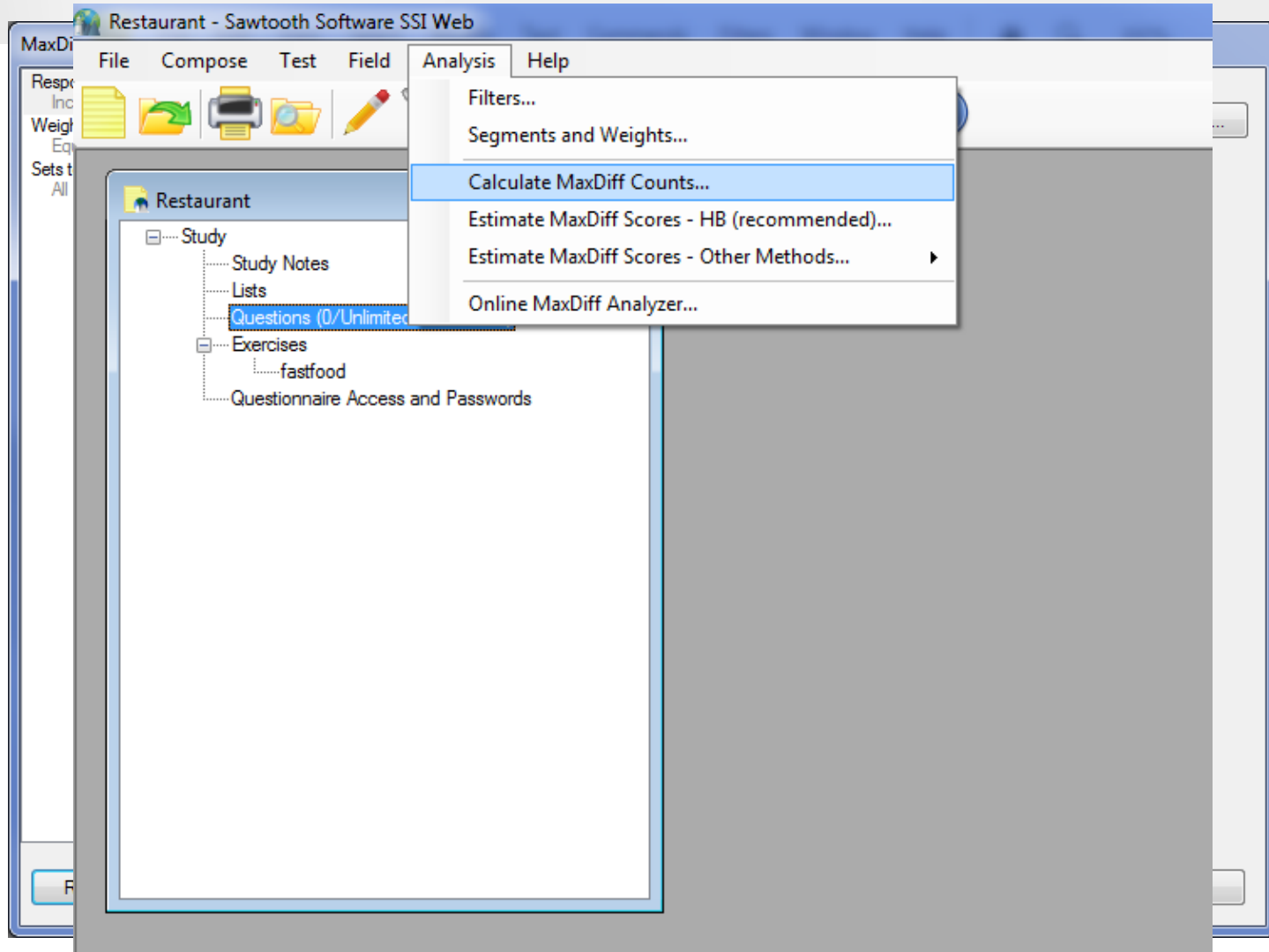
SECTION 4

Analyzing MaxDiff Data

Methods of Analysis

- ▶ Counting
- ▶ Aggregate Logit
- ▶ Latent Class
- ▶ Hierarchical Bayes

Counting



Aggregate Logit

MaxDiff Logit Analysis

Respondent Filter Place a check in the box next to any set to include it in analysis

MaxDiff/Logit Scores Report

Zero-Centered Interval Scores		
Label	Item Number	Score
Clean eating areas (floors, tables, and chairs)	1	-0.89821
Clean bathrooms	2	58.48833
Has health food items on the menu	3	-30.64842
Typical wait time is about 5 minutes in line	4	-15.30723
Typical wait time is about 15 minutes in line	5	-41.51167
Prices are very reasonable	6	9.79344
Your order is always completed correctly	7	-31.73571
Has a play area for children	8	33.52618
Food tastes wonderful	9	32.28355
Restaurant gives generously to charities	10	-13.99024

Rescaled Scores (0 to 100 scaling)		
Label	Item Number	Score
Clean eating areas (floors, tables, and chairs)	1	9.97882
Clean bathrooms	2	10.90823
Has health food items on the menu	3	9.53357
Typical wait time is about 5 minutes in line	4	9.76145
Typical wait time is about 15 minutes in line	5	9.37443
Prices are very reasonable	6	10.14218

Open Output Folder... Close

Restore defaults OK Cancel

Latent Class

MaxDiff Latent Class Analysis

Respondent Filter

General Settings

MaxDiff/Latent Class Scores Report

Respondent	2 Group Me	3 Group Me	4 Group Me	5 Group Me	Prob_Mem1	Prob_Mem2	Prob_Mem3	Prob_Mem4	Prob_Mem5	Prob_Mem6	Prob_Mem7	Prob_Mem8	Prob_Mem9	Prob_Mem10	Prob_Mem11
2	2	1	2	4	0.00615	0.99385	0.96166	0.00156	0.03677	0.00036	0.96927	0.00080	0.02956		
3	2	3	4	3	0.19104	0.80896	0.26248	0.14908	0.58844	0.09738	0.14340	0.00469	0.75452		
4	1	2	1	2	0.97506	0.02494	0.00820	0.96467	0.02713	0.98699	0.00200	0.00368	0.00733		
5	1	1	2	1	0.51605	0.48395	0.77846	0.21840	0.00315	0.12262	0.84541	0.02078	0.01119		
6	2	1	2	4	0.00396	0.99604	0.96999	0.00147	0.02854	0.00048	0.95878	0.00008	0.04065		
7	2	1	3	5	0.34672	0.65328	0.50645	0.33918	0.15437	0.03865	0.30289	0.55732	0.10114		
8	1	2	1	2	0.92776	0.07224	0.06576	0.89936	0.03488	0.86372	0.05001	0.03848	0.04779		
9	2	3	4	3	0.36019	0.63981	0.04359	0.07052	0.88589	0.21180	0.04464	0.00194	0.74163		
10	1	2	1	1	0.74916	0.25084	0.13403	0.66375	0.20222	0.41431	0.20261	0.08031	0.30276		
11	2	1	2	4	0.38452	0.61548	0.74956	0.21084	0.03960	0.09087	0.77944	0.04560	0.08409		
12	2	1	2	4	0.49827	0.50173	0.41029	0.38542	0.20430	0.28943	0.46263	0.04271	0.20523		
13	2	1	2	3	0.27210	0.72790	0.69573	0.20244	0.10183	0.10937	0.48025	0.02190	0.38848		
14	2	1	4	3	0.06327	0.93673	0.50235	0.02062	0.47703	0.01675	0.28302	0.00046	0.69977		
15	2	3	4	3	0.14591	0.85409	0.03176	0.02076	0.94748	0.04199	0.08746	0.00795	0.86260		
16	2	1	4	3	0.02549	0.97451	0.50738	0.02225	0.47038	0.06110	0.37153	0.00005	0.56732		
17	1	2	1	1	0.81089	0.18911	0.10861	0.75310	0.13830	0.77399	0.03334	0.00194	0.19073		
18	2	3	4	3	0.04947	0.95053	0.11790	0.01296	0.86914	0.00275	0.02072	0.00019	0.97635		
19	2	3	4	3	0.12291	0.87709	0.33102	0.07470	0.59428	0.01085	0.23415	0.10267	0.65232		
20	1	2	1	1	0.93509	0.06491	0.02950	0.92801	0.04249	0.76964	0.01681	0.02540	0.18815		
21	2	1	2	4	0.00764	0.99236	0.94469	0.00349	0.05182	0.00444	0.94341	0.00011	0.05204		

Summary | 2 Groups | 3 Groups | 4 Groups | 5 Groups | Segmen

Open Output Folder... Close

Restore defaults OK Cancel

Hierarchical Bayes

Build Report

MaxDiff Scores / HB

Respondent Id

MaxDiff/HB Scores Report

Internal Interview Numbers	Fit Statistic	Clean eating area	Clean bathrooms	Has health food it	Typical wait time	Typical wait time	Prices are very re	Your order is alwa
2	0.26995	12.64862	5.23249	12.73702	11.13751	11.39126	9.58483	7.03753
3	0.28137	6.38185	10.56479	5.79562	14.67672	7.50221	8.22321	12.95337
4	0.31953	6.86797	16.07149	6.82399	7.95975	9.29571	17.70905	6.30901
5	0.26808	10.82167	11.22106	9.78911	6.16876	8.24522	6.23141	8.96973
6	0.27735	16.09719	5.87491	12.31923	9.97480	7.40836	7.77116	11.36394
7	0.26551	7.63677	12.27139	9.88781	11.56801	7.73738	12.50306	6.33264
8	0.25729	7.90254	13.34314	10.48908	5.21051	9.93358	12.87702	9.41754
9	0.28433	5.87979	6.74149	12.23877	10.33814	8.89405	18.09812	8.94212
10	0.28290	11.22987	11.02869	7.64598	6.41274	6.09409	17.10635	12.20915
11	0.27267	11.32566	12.99967	8.08444	9.17302	16.30070	8.10967	7.40932
12	0.24397	10.00988	10.73996	10.10121	7.72523	11.57832	12.23414	9.44143
13	0.24939	9.50752	12.33291	10.57778	9.66461	11.31057	6.62999	11.26691
14	0.27375	11.67690	5.12367	11.59131	7.84569	10.98078	11.76261	11.46222
15	0.28737	6.25162	8.18505	11.71621	11.93912	9.56939	18.28897	9.35513
16	0.27576	13.84172	7.39733	8.33381	14.33868	6.90897	12.31617	10.12321
17	0.26228	9.20874	10.68736	7.61774	7.68283	7.74545	11.73401	11.82816
18	0.30480	7.82467	8.12813	5.42411	14.91028	10.46052	6.01260	17.28719
19	0.26017	9.12658	12.29885	6.21268	14.28560	11.67892	9.36767	10.05377
20	0.28464	9.33873	15.73420	5.31656	7.10886	7.61498	9.62163	14.52191
21	0.28397	13.69338	5.90557	14.94742	12.46275	7.26878	11.97951	5.71598

Summary Rescaled Scores Raw Scores

Open Output Folder... Close

Restore defaults Estimate Scores Quit Cancel

SECTION 5

Additional Analyses

Segmentation

Strategic business decisions rely on segmenting the market and reaching the target.

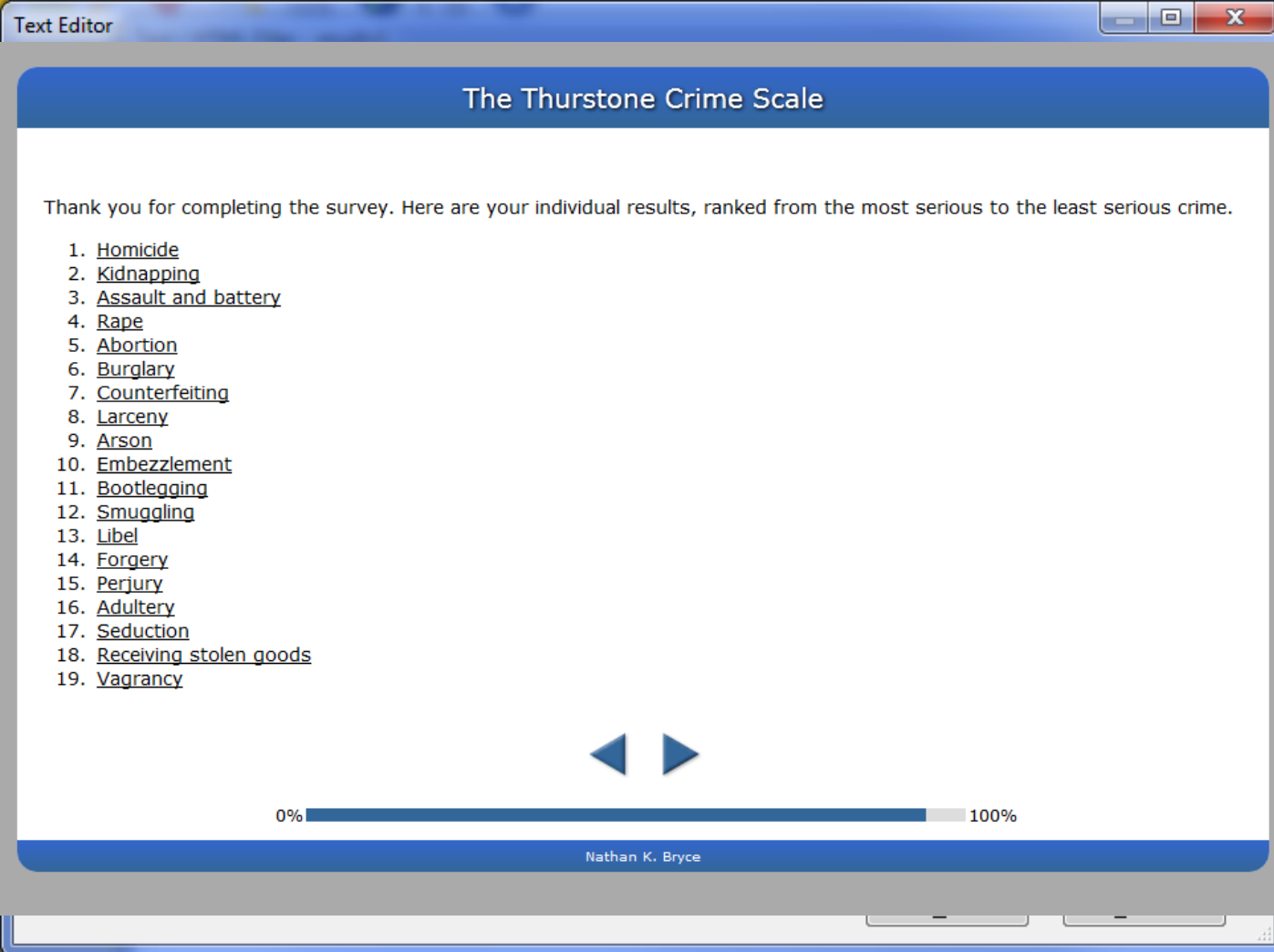
Analyzing MaxDiff scores with our Latent Class or Convergent Cluster Ensemble Analysis software results in:

- Greater between-item and between-respondent discrimination
- Greater predictive accuracy

Than either monadic ratings or paired comparisons differentiated solutions.



“On The Fly” Scores



The screenshot shows a window titled "Text Editor" with a blue header bar containing the text "The Thurstone Crime Scale". Below the header, a message reads: "Thank you for completing the survey. Here are your individual results, ranked from the most serious to the least serious crime." This is followed by a numbered list of 19 crimes, each underlined: 1. Homicide, 2. Kidnapping, 3. Assault and battery, 4. Rape, 5. Abortion, 6. Burglary, 7. Counterfeiting, 8. Larceny, 9. Arson, 10. Embezzlement, 11. Bootlegging, 12. Smuggling, 13. Libel, 14. Forgery, 15. Perjury, 16. Adultery, 17. Seduction, 18. Receiving stolen goods, and 19. Vagrancy. At the bottom of the window, there is a progress bar showing 0% to 100% with a blue fill up to approximately 75%, and the name "Nathan K. Bryce" centered below it. Navigation arrows are positioned above the progress bar.

Text Editor

The Thurstone Crime Scale

Thank you for completing the survey. Here are your individual results, ranked from the most serious to the least serious crime.

1. Homicide
2. Kidnapping
3. Assault and battery
4. Rape
5. Abortion
6. Burglary
7. Counterfeiting
8. Larceny
9. Arson
10. Embezzlement
11. Bootlegging
12. Smuggling
13. Libel
14. Forgery
15. Perjury
16. Adultery
17. Seduction
18. Receiving stolen goods
19. Vagrancy

0% 100%

Nathan K. Bryce

MaxDiff Analyzer

1. Display average values for the sample, or by segment
2. Conduct simulations, projecting “market choices”
3. Optimize portfolios of items to “reach” respondents, via TURF analysis
4. Automatically rescale scores, like probability or 0-100 scales, with 95% confidence intervals

Simulator

- **First Choice Rule.** Each respondent “casts a vote” for the item that has the highest score within the items included in the simulation set.
- **Share of Preference (Logit) Rule.** Respondents are allowed to split their votes across the items included in the simulation set.

Total Unduplicated Reach and Frequency (TURF) Analysis



Finds the items that will reach the maximum number of people

Anchoring

1

Ask to identify acceptable items from entire list (**Lattery's Direct Approach**)

2

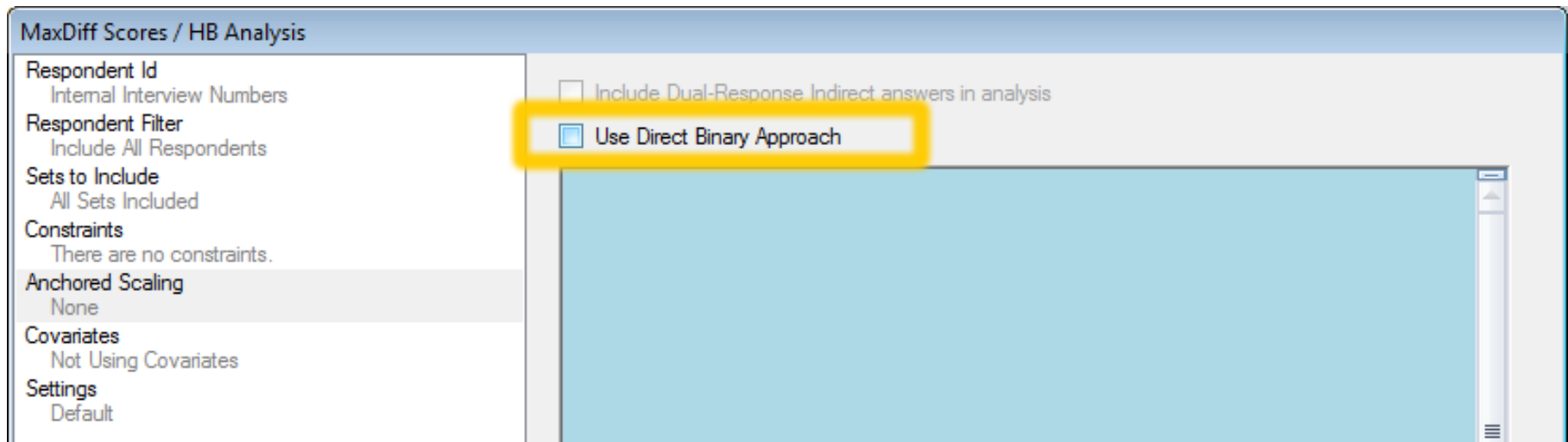
Ask to indicate whether all items in a set are all good, all bad, or some good and some bad (**Louviere's Indirect Approach**)

Direct Approach

This one is kind of long, but remember: For Science!

Please consider each pie below. If only that pie was available, would you take a slice?

	I would definitely take a slice	I probably would take a slice	Undecided	I probably would not take a slice	I would definitely not take a slice
Apple Crumb	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Banana Cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berry Patch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blackberry Bavarian Bliss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blueberry Sour Cream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caramel Pecan Silk Supreme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cherry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



After you've collected the data, during score estimation, you simply indicate that you wish to use the **Direct Binary Anchoring** method.

You then specify the logic that references the scaling questions and identifies which values on the scale indicate that an item has exceeded the anchor threshold.

MaxDiff Scores / HB Analysis

- Respondent Id
 - Internal Interview Numbers
- Respondent Filter
 - Include All Respondents
- Sets to Include
 - All Sets Included
- Constraints
 - There are no constraints.
- Anchored Scaling
 - None
- Covariates
 - Not Using Covariates
- Settings
 - Default

Include Dual-Response Indirect answers in analysis
 Use Direct Binary Approach

	MaxDiff List Items:	Item Exceeds Threshold if Logic Evaluates to "True":
1	3-year reenlistment obligation	
2	5-year reenlistment obligation	
3	Location guarantee for next assignment	
4	Duty guarantee for next assignment	Items_r1 > 1
5	Both location and duty guarantees for next assignment	
6	Get promoted 6-months sooner than expected	
7	Live in 2-person barracks when in port	
8	Live in 4-person barracks when in port	
9	Choice between living in 2-person barracks or 4-person barracks	
10	\$50 per month pay increase when out at sea	
11	\$75 per month pay increase when out at sea	
12	Half of on-job time using your skills and training	
13	Three-quarters of on-job time using your skills and training	
14	Time off each week allowed for on-line college courses	

[Warning: The symbol 'Items_r1' does not exist.](#)

You may leave a cell in this grid blank if there is no direct information regarding this item relative to the anchor. Press F1 for more details.

Restore defaults OK Cancel

Indirect Approach

The screenshot shows the 'MaxDiff Exercise - disease' window. The 'Question Style' section has 'Ask "Best" and "Worst"' selected. A table below shows 'Best' and 'Which item is Best, and...' with three items. The 'Anchored Scaling (Dual-Response Indirect Method)' section has 'Add Dual-Response Question' checked. The 'Anchored Scaling (Direct Binary Approach)' section is also visible. A red oval highlights the 'Add Dual-Response Question' checkbox and the 'Anchored Scaling (Direct Binary Approach)' section.

Best	Which item is Best, and...
<input checked="" type="radio"/>	Item
<input type="radio"/>	Item
<input type="radio"/>	Item

This dialog box is titled 'Anchored Scaling (Dual-Response Indirect) Settings'. It contains a 'Question Text' field with the text 'Considering only the items above...'. Below it is a 'Response Options Text' table with three rows: 'None', 'Some', and 'All', each with a corresponding text description and an edit icon.

Field	Text
None	None of these are important to me
Some	Some of these are important to me
All	All of these are important to me

Considering only these four diseases, which is the Most Preferred and which is the Least Preferred?

(1 of 20)

Most Preferred		Least Preferred
<input type="radio"/>	Gum disease	<input type="radio"/>
<input type="radio"/>	Broken leg	<input type="radio"/>
<input type="radio"/>	Heart attack	<input type="radio"/>
<input type="radio"/>	Brain aneurysm	<input type="radio"/>

Considering only the items above...

- None of these diseases are acceptable to me
- Some of diseases are acceptable to me
- All of these diseases are acceptable to me

Click the 'Next' button to continue...

In celebration of Pi Day, Sawtooth Software is going to pick up some pies. Hooray!

If Becky presented you with just the following 4 pie options, of which would you most like a slice?

Most Desirable		Least Desirable
<input type="radio"/>	Triple Chocolate Cream	<input type="radio"/>
<input type="radio"/>	French Silk	<input type="radio"/>
<input type="radio"/>	Strawberry Rhubarb	<input type="radio"/>
<input type="radio"/>	Chocolate Caramel Delight	<input type="radio"/>

If Becky went ahead and bought all 4 of these pies I would...

- Not take a slice of any of them
- Happily take a slice of any of them (or all of them!)
- Probably take a slice of at least one

Anchoring Issues

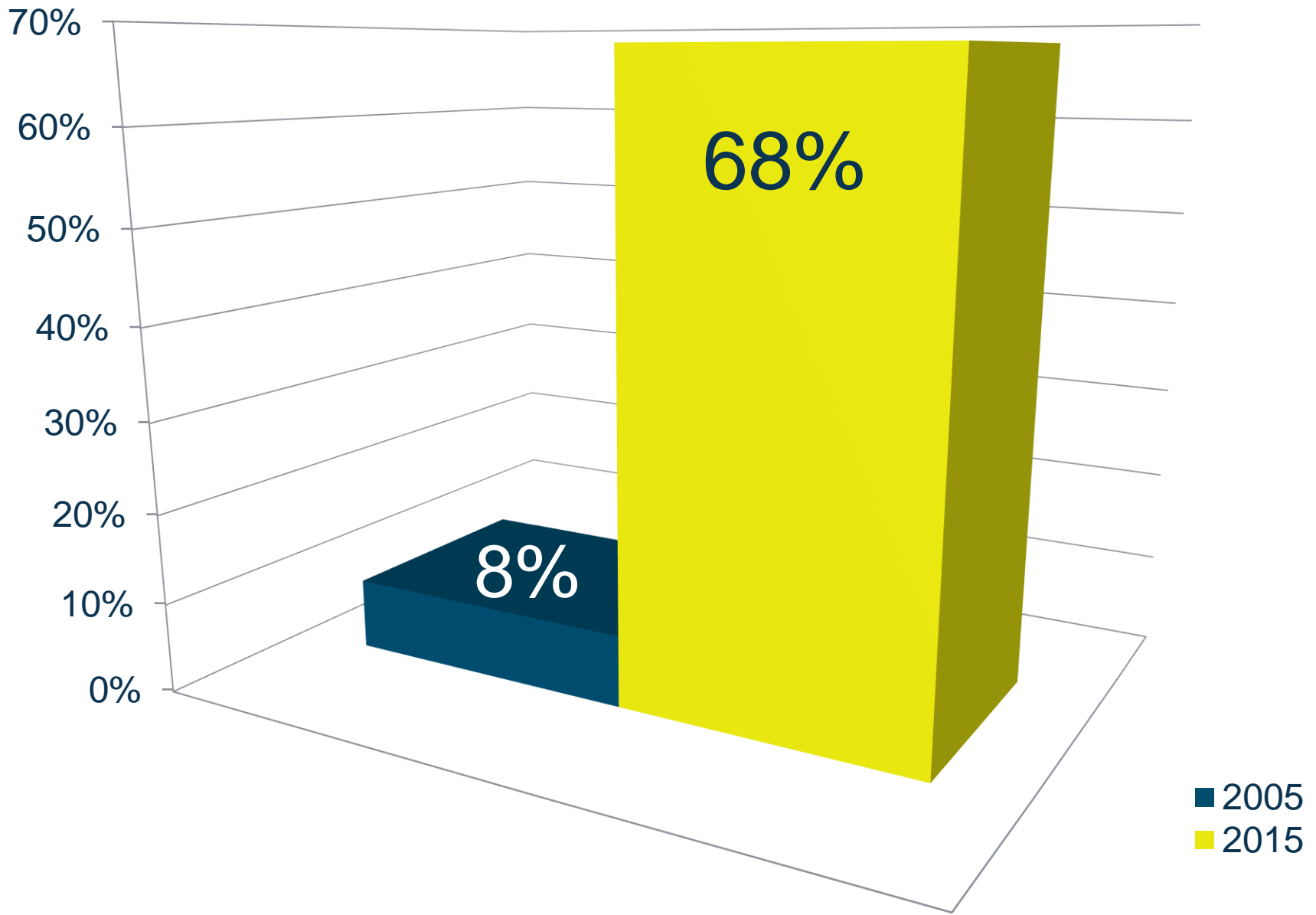
- ▶ Questionnaire is now longer
- ▶ Re-introduces scale bias
 - ✓ Still not using scale, but propensity to mark things as acceptable or not is different
 - ✓ Clustering may find similarities based primarily on use of cutoff rather than actual differences in which items are preferred

Express, Sparse and Constructed Lists

- ▶ Express – Creates different subsets of the larger number of items and asks a given respondent only about that subset, using HB analysis to fill in the blanks for the missing items.
- ▶ Sparse – Each respondent sees all items in the study, but fewer than the recommended number of times (<3, perhaps just once).
- ▶ Constructed list – Base the items on previous answers in a study, but all respondents must see the same number of items in total.

SECTION 6

Conclusions





Sawtooth Software

The survey software of choice

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SECTION 7

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