

## When Remembering Disrupts Knowing: Blocking Implicit Price Memory

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This web appendix contains details on experiment stimuli and supplemental analyses.

### Web Appendix A: Stimuli Products and Prices


<b>Product</b>	<b>Original Price</b>	<b>New Price</b>
Nacho Cheese Doritos	\$3.45	\$2.45
Del Monte Diced Peaches	\$3.95	\$4.95
Arnold Whole Grains Bread	\$3.85	\$4.85
Bush's Baked Beans - Original	\$2.19	\$1.19
Kashi Go Lean Crunch Cereal	\$3.75	\$4.75
Health Valley Granola Bars - Blueberry	\$4.59	\$3.59
Honey Nut Cheerios Cereal	\$5.95	\$6.95
Quaker Oatmeal - Variety Pack	\$5.39	\$4.39
Mrs. Smith's Apple Crumb Pie	\$5.85	\$6.85
Coca Cola Classic - 6 pack	\$4.99	\$3.99
Aquafina Pure Water - 6 pack	\$6.99	\$7.99
Cape Cod Potato Chips	\$2.99	\$3.99
Chips Ahoy Chocolate Chip Cookies	\$3.19	\$2.19
DiGiorno Rising Crust Pizza - 4 Cheese	\$7.99	\$8.99
Sara Lee Cheesecake	\$8.99	\$7.99
Ghirardelli Hot Cocoa	\$6.39	\$5.39
Oreo Cookies - Chocolate Sandwich	\$3.71	\$2.71
Little Debbie Muffins - Banana Nut	\$3.85	\$2.85
Drake's Coffee Cakes	\$5.15	\$6.15
Yoplait 99% Fat Free Yogurt	\$1.45	\$2.45

*JPEG photos of all products can be provided by e-mailing the first author.*

## Web Appendix B

### ***B.1 SHOPPING TASK (ENCODING TASK): IDENTICAL FOR ALL PARTICIPANTS***

Would you like to purchase this item?




**Arnold Whole Grains  
Bread**  
**\$3.85**

 Add to Cart

DO NOT  
Add to Cart

**B.2 COMPARISON STUDY: COMPARE-ONLY CONDITION**



**Arnold Whole Grains  
Bread**  
**\$4.85**


**Is the new price lower than, the same as, or higher than the previous price?** *(Click one)*

Lower

Same

Higher

**B.3 COMPARISON STUDY: RECALL-AND-COMPARE CONDITION**



**Arnold Whole Grains  
Bread**  
**\$4.85**

**1) Can you recall the price of this product from when you saw it the first time? IF you can recall it, enter the previous price below. Otherwise, leave this box blank:**

\$

*Enter the numeric price only without any other text or symbols like "\$".*

**2) Is the new price lower than, the same as, or higher than the previous price?** *(Click one)*

Lower

Same

Higher

## Web Appendix C

### ***PARTICIPANTS REMOVED FROM EXPERIMENTS BASED ON REACTION TIME***

Participants whose total experiment time was more than three standard deviations from the mean for all participants were removed to ensure that the results did not depend on respondents who spent excessive time on the encoding or recall tasks. While this was done as a measure of abundant caution, none of the main results changed with this removal.

<b>Experiment</b>	<b>Subjects more than 3 STDV from the mean (total time for experiment)</b>
1A	2
1B	1
2	6
3	4
4A	3
4B	3

All repeated measures logistic regressions were done in SAS using PROC GENMOD, capturing the subject-specific effect (see Allison 1999).

## Web Appendix D

### ***EFFECT OF CORRECT PRICE RECALL ON PRICE COMPARISONS RECALL-AND-COMPARE CONDITIONS ONLY***


<b>Experiment and Condition</b>	$B_{correct\ recall}^*$	$t$	$p$
Experiment 1A: Recall-and-Compare	3.31	4.59	<.01
Experiment 1B: Recall-and-Compare	3.28	6.53	<.01
Experiment 2: Recall-and-Compare	1.80	6.47	<.01
Experiment 2: Unrelated-Recall-and-Compare	-.01	-.08	.94
Experiment 3: Recall-and-Compare (control)	1.65	4.64	<.01
Experiment 3: Recall-and-Compare (attention to metacognitive experience)	2.31	8.09	<.01
Experiment 4A: Recall-and-Compare (concrete mindset)	1.93	5.21	<.01
Experiment 4A: Recall-and-Compare (abstract mindset)	2.32	7.91	<.01
Experiment 4B: Recall-and-Compare	2.37	9.19	<.01

\*Coefficient of recall from the repeated measures logistic regression of only those participants in the recall-and-compare conditions. The predictor was price recall (*incorrect* = 0, *correct* = 1) and the dependent measure was price comparison (*incorrect* = 0, *correct* = 1).

Tables 1 and 2 from the paper include the rate of correct price recall across all experiments. These results show that while overall, attempting price recall decreases the accuracy of price comparisons, for the small number of instances when participants can actually recall the correct price, correct price recall is associated with more correct price comparisons.

## Web Appendix E: Experiment 1B

### *E.1 COMPARE-ONLY CONDITION*




Arnold/Brownberry 100% Whole Wheat Bread  
\$4.85

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Is the new price lower than, higher than or same as the old price?

### *E.2 RECALL-AND-COMPARE CONDITION*



Arnold/Brownberry 100% Whole Wheat Bread  
\$4.85

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Can you recall the price of this product when you saw it the first time? If you can recall the old price, then please enter it in the box below. If you cannot recall the old price, please do not enter anything in the box. Leave it blank. Please do not enter any other text or symbols (e.g., \$) in the box below as it will record only numeric responses.

If you can recall the old price, please enter it here: \$

Is the new price lower than, higher than or same as the old price?

## Web Appendix F: Experiment 2

### UNRELATED-RECALL CONDITION



**Arnold Whole Grains  
Bread**  
**\$4.85**

1) Can you remember the last name that goes with this first name? IF you can, enter it in the box below. Otherwise leave the box blank.

*Enter your answer here.*

**LINDA**

2) Is the new price above lower than, the same as, or higher than the previous price? *(Click one)*

**Lower** **Same** **Higher**

## **Web Appendix G: Experiment 2**

### ***STIMULI FROM THE UNRELATED-RECALL CONDITION***

The 20 names were constructed using 20 of the 21 most frequent first names and 20 of the most frequent last names in the United States, according to the U.S. Census Bureau.

BARBARA MARTIN  
CHARLES SMITH  
CHRISTOPHER WILLIAMS  
DAVID MOORE  
DOROTHY WILSON  
ELIZABETH HARRIS  
JAMES MARTINEZ  
JENNIFER BROWN  
JOHN THOMPSON  
JOSEPH GARCIA  
LINDA ANDERSON  
MARGARET TAYLOR  
MARIA ROBINSON  
MARY JOHNSON  
MICHAEL WHITE  
PATRICIA THOMAS  
RICHARD JONES  
ROBERT DAVIS  
SUSAN MILLER  
WILLIAM JACKSON



## Web Appendix H

### EXPERIMENT 4B FLOODLIGHT ANALYSIS

BIF Value (0=most concrete, 20=most abstract)	Judgment Type Coefficient	SE	Lower 95% CI	Upper 95% CI	<i>t</i> -value	p-value
0	-0.67	0.162	-0.99	-0.35	-4.31	<.001
1	-0.63	0.151	-0.93	-0.34	-4.21	<.001
2	-0.60	0.139	-0.87	-0.32	-4.29	<.001
3	-0.56	0.128	-0.81	-0.31	-4.38	<.001
4	-0.52	0.117	-0.75	-0.29	-4.48	<.001
5	-0.49	0.106	-0.69	-0.28	-4.58	<.001
6	-0.45	0.096	-0.64	-0.26	-4.70	<.001
7	-0.41	0.086	-0.58	-0.24	-4.81	<.001
8	-0.38	0.077	-0.53	-0.23	-4.92	<.001
9	-0.34	0.068	-0.47	-0.21	-4.97	<.001
10	-0.30	0.061	-0.42	-0.18	-4.93	<.001
11	-0.27	0.056	-0.38	-0.16	-4.72	<.001
12	-0.23	0.054	-0.33	-0.12	-4.27	<.001
13	-0.19	0.054	-0.30	-0.09	-3.58	<.001
14	-0.16	0.057	-0.27	-0.05	-2.76	0.01
15	-0.12	0.062	-0.24	0.00	-1.93	0.05
16	-0.08	0.069	-0.22	0.05	-1.20	0.23
17	-0.05	0.077	-0.20	0.11	-0.59	0.55
18	-0.01	0.086	-0.18	0.16	-0.10	0.92
19	0.03	0.096	-0.16	0.22	0.29	0.77
20	0.06	0.107	-0.14	0.27	0.60	0.55

Per Spiller et al. (2013), the compare-only condition was coded as 0 and the recall-and-compare condition was coded as 1 and the analyses were conducted using repeated measures logistic regression. The Johnson-Neyman point where the effect of comparison type goes from statistically significant to not is 15 on the BIF scale.

## Web Appendix I: Meta-Analysis Study Details

Exp	Manuscript Exp	Study Name	N*
1	--	Original Exp 1a : Price recall disrupts price comparisons <i>Currently removed from paper</i>	55
2	Exp 1A	Price recall disrupts price comparisons	141
3	Exp 2	Relevance of metacognitive experience <i>Compare only and Recall-and-compare conditions only</i>	146
4	Exp 3	Drawing attention to feeling-of-not-knowing <i>Control conditions only</i>	95
5	Exp 4a	Reducing feeling-of-not-knowing through construal mindset (manipulated) <i>Abstract conditions only</i>	182
6	Exp 4b	Reducing feeling-of-not-knowing through construal mindset (measured)	284

\*N is for only those condition included in the meta-analysis.

## Web Appendix J: All Experiment Stimuli

All experiments were programmed using Adobe Flash, with the exception of experiment 1B, which was programmed using Adobe Authorware. The components of each experiment from sections of the appendix are outlined in this section. The table below outlines the order of these components for each of the experiments in the paper. The blocks of stimuli are grouped as follows:

- Block 1: Encoding Tasks
- Block 2: Recall Tasks
- Block 3: Attention to Feeling-of-Not-Knowing (FONK) Manipulation
- Block 4: Construal Mindset Manipulation & Measurement
- Block 5: Key Dependent Measures

<b>Experiment 1A</b>			
<i>Compare-Only</i>	<i>Recall-and-Compare</i>		
Blocks 1A, 2A, 5A	Blocks 1A, 2B, 5A		
<b>Experiment 1B</b>			
<i>Compare-Only</i>	<i>Recall-and-Compare</i>		
Blocks 1A, 2A, 5A <i>See Web Appendix C.1</i>	Blocks 1A, 2A, 5A <i>See Web Appendix C.2</i>		
<b>Experiment 2</b>			
<i>Compare-Only</i>	<i>Recall-and-Compare</i>	<i>Unrelated-Recall-and-Compare</i>	
Blocks 1A, 1B, 2A, 5A	Blocks 1A, 1B, 2B, 5A	Blocks 1A, 1B, 2C, 5A	
<b>Experiment 3</b>			
<i>Control: Compare-Only</i>	<i>Control: Recall-and-Compare</i>	<i>Attn. to FONK: Compare-Only</i>	<i>Attn. to FONK: Recall-and-Compare</i>
Blocks 1A, 2A, 5A, 5B, 5C	Blocks 1A, 2B, 5A, 5B, 5C	Blocks 1A, 2A, 3, 5A, 5B, 5C	Blocks 1A, 2B, 3, 5A, 5B, 5C
<b>Experiment 4A</b>			
<i>Concrete Mindset Compare-Only</i>	<i>Concrete Mindset Recall-and-Compare</i>	<i>Abstract Mindset Compare-Only</i>	<i>Abstract Mindset Recall-and-Compare</i>
Blocks 1A, 4A, 2A, 5A, 5B	Blocks 1A, 4A, 2B, 5A, 5B	Blocks 1A, 4B, 2A, 5A, 5B	Blocks 1A, 4B, 2B, 5A, 5B
<b>Experiment 4B</b>			
<i>Compare-Only</i>	<i>Recall-and-Compare</i>		
Blocks 1A, 4C, 2A, 5A	Blocks 1B, 4C, 2B, 5A		

## **BLOCK 1: ENCODING TASKS**

### **Block 1A: Encoding Task (“Shopping Study”)**

*Identical for all experiments for all conditions.*

#### **Screen 1:**

We are interested in your shopping habits - specifically food products you typically purchase from convenience stores.

Imagine that you are at a convenience store right now and you see several food items available in the aisles.

Your task is simple: You just have to indicate whether you would buy each product if you were shopping right now.

#### **Screen 2:**

You will see about twenty food items one at a time.

If you want to buy the item, click on the "ADD TO CART" button.

If you do NOT want to buy the item, click on the "DO NOT ADD TO CART" button.

**Screen 3 onwards:** 20 iterations of the screenshot shown in Web Appendix B.1 with each of the products and prices listed in Web Appendix A (presented in randomized order).

### **Block 1B: Unrelated Recall Encoding Task: (“Name Preference Study”), Experiment 2 only**

*Completed by participants in all conditions for Experiment 2.*

#### **Screen 1:**

We are considering different names to use in a future study and would like your opinions on them.

You will see a series of names in the center of the screen. Please indicate to what extent you like each name.

#### **Screen 2 onwards:**

*[Each of the 20 names in Appendix E was listed on top of the question:]*

How much do you like this name? [1 = not at all, 2 = very much]

## **BLOCK 2: RECALL TASKS**

### **Block 2A: Recall Task—Compare-Only Condition (“Comparison Study”)**

*Identical for experiments 1A, 2, 3, 4A, and 4B – differences noted for experiment 1B in Web Appendix C.*

#### **Screen 1:**

We are interested in consumers' memory for prices. You will now see the same products from the earlier shopping task, but this time, the new price might be:

- 1) Lower than
- 2) The same as, or
- 3) Higher than the previous price you saw.

#### **Screen 2:**

For each product, indicate whether you believe the new price is:

- 1) Lower than,
- 2) The same as, or
- 3) Higher than the previous price by clicking the associated button.

The program will advance to the next product as soon as you select a button.

**Screen 3 onwards:** 20 iterations of the screenshot shown in Web Appendix B.2 for each of the 20 products and their new prices as shown in Web Appendix A.

### **BLOCK 2B: RECALL TASK—RECALL-AND-COMPARE CONDITION (“COMPARISON STUDY”)**

*Identical for experiments 1A, 2, 3, 4A, and 4B – differences noted for experiment 1B in Web Appendix C.*

**Screen 1:** *Identical to screen 1 of the compare-only condition*

#### **Screen 2:**

First: For each product, try and recall the previous price and enter it in the space provided. If you cannot remember, leave the space blank and answer the comparison question below it.

Second: Indicate whether you believe the new price is:

- 1) Lower than,
- 2) The same as, or
- 3) Higher than the previous price by clicking the associated button.

The program will advance to the next product as soon as you select a button.

**Screen 3 onwards:** 20 iterations of the screenshot shown in Web Appendix B.3 for each of the 20 products and their new prices as shown in Web Appendix A.

***BLOCK 2C: RECALL TASK—UNRELATED-RECALL-AND-COMPARE CONDITION  
("COMPARISON TASK"), EXPERIMENT 2 ONLY***

**Screen 1:** *Identical to screen 1 of the compare-only condition*

**Screen 2:**

We are also interested in how people work on two tasks simultaneously. We will ask you to try a name recall task while comparing these prices.

Name Recall Task: We are interested in what you remember from the study where you evaluated different names. You will see the first name from one of the names that you saw. IF you can remember it, enter the LAST NAME that goes with the first name.

If you cannot remember the name, leave it blank. Please note that we are interested in what you remember, so if you cannot remember something specific, it is okay to leave this box blank.

**Screen 3:**

You will see the product and price on top of the screen.

First: IF you can remember it, enter the LAST NAME that went with the FIRST NAME from the earlier study. If you cannot remember it, leave the space blank and answer the comparison question below it.

Second: Indicate whether you believe the new price is:

- 1) Lower than,
- 2) The same as, or
- 3) Higher than the previous price by clicking the associated button.

The program will advance to the next product as soon as you select a button.

**Screen 4 onwards:** 20 iterations of the screenshot shown in Web Appendix D for each of the 20 products and their new prices as shown in Web Appendix A.

### ***BLOCK 3: ATTENTION TO FEELING-OF-NOT-KNOWING MANIPULATION***

#### **Block 3: Attention to Feeling-of-Not-Knowing Conditions (Experiment 3 only)**

*Manipulation was inserted after screen 2 of the recall tasks in Blocks 2A or 2B.*

##### **Screen 1:**

For this study, we are interested in understanding the extent to which you feel you know or do NOT know the answers when making price judgments.

Please focus on these feelings while making the price evaluations on the following screens.

##### **Screen 2:**

I will focus on my feelings of knowing and not knowing the answers while evaluating the prices on the following screens:

1 = *Disagree*, 9 = *Agree*

### ***BLOCK 4: CONSTRUAL MINDSET MANIPULATION & MEASUREMENT***

#### **Block 4A: Concrete Construal Mindset Manipulation (Experiment 4A only)**

*Administered after the Block 1A encoding task and before recall tasks in Blocks 2A or 2B.*

##### **Screen 1**

How Do You Make Price Comparisons?

Many consumers compare prices in their every day life. There are many ways in which you might do this.

For this next study, we are interested in understanding the process of HOW consumers compare prices for products. Take a moment and think about HOW you compare prices for products.

On the next screen, we will ask you to describe how you compare prices for products in three ways.

##### **Screen 2**

HOW do you go about comparing the prices for products? Please give three ways in which you do this.

*Followed by three numbered text boxes to give answers. Text boxes filled the width of the page and accommodated several sentences of text.*

**Block 4B: Abstract Construal Mindset Manipulation (Experiment 4A only)**  
*Administered after the Block 1A encoding task and before recall tasks in Blocks 2A or 2B.*

**Screen 1**

Why Do You Make Price Comparisons?

Many consumers compare prices in their every day life. There are many reasons why you might do this.

For this next study, we are interested in understanding the reasons WHY consumers compare prices for products. Take a moment and think about WHY you compare prices for products.

On the next screen, we will ask you to describe three reasons why you compare prices for products.

**Screen 2**

WHY do you go about comparing the prices for products? Please give three reasons why you do this.

*Followed by three numbered text boxes to give answers. Text boxes filled the width of the page and accommodated several sentences of text.*

**Block 4C: Behavior Identification Form Construal Mindset Measure (Experiment 4B only)**  
*Administered after the Block 1A encoding task and before recall tasks in Blocks 2A or 2B.*

**Screen 1**

Understanding Actions Study

Any behavior can be identified in many ways. For example, one person might describe a behavior as "typing a paper," while another might describe the behavior as "pushing keys." Yet another person might describe the behavior as "expressing thoughts." We are interested in your personal preferences for how a number of different behaviors should be described.

**Screen 2**

For the following questions, you will find several different behaviors listed. After each behavior will be two choices of different ways the behavior might be identified.

Your task is to choose the identification that best describes the behavior for you. Simply select the button beside the statement that you pick. Please mark only one alternative for each pair. There are no right or wrong answers – simply choose the description that you personally believe is more appropriate in each pair.

The program will automatically advance as you make your choices.

**Screen 3 onwards:** 19 items and choices from BIF shown one at a time on the screen.



## ***BLOCK 5: KEY DEPENDENT MEASURES SUMMARY OF DEPENDENT MEASURES***

*Summary of measures other than price comparisons and price recall.*

**Block 5a: Demographic Questions** (all experiments, questions were optional and could be left blank)

- Gender
- Age
- Ethnicity
- Marital Status
- Number of children
- Occupation
- Household income

**Block 5b: Feeling-of-Not-Knowing Mediator Measure** (Experiments 3 and 4A only)

- For the questions where you were asked whether the new price was higher, lower, or the same as the previous price, how many of your 20 answers do you think were correct?  
[Answer box provided to fill in number from 1 to 20]

**Block 5c: Feeling-of-Not-Knowing Manipulation Check Measure** (Experiment 3 only)

- When evaluating the prices, I focused on my feelings of knowing and not knowing the answers when making judgments. [1 = *Strongly Disagree*, 9 = *Strongly Agree*]