

THE PSYCHOLOGY OF

PRICING



Which digits? How high?
Should it be rounded? A
checklist of pricing tactics.

Nick Kolenda

The Psychology of Pricing: Which Digits? How High? Should it be Rounded? A Checklist of Pricing Tactics.

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INTRODUCTION

“All our knowledge has its origin in our perceptions.”

–Leonardo da Vinci

Nothing in this world has concrete meaning.

At the end of the day, price is merely a perception.

Nothing more. Nothing less.

And that’s great news. While large companies can afford expensive pricing research, you can apply psychology.

In this guide, you’ll learn why innocent factors—fonts, colors, digits—can make prices more appealing, boosting the sales of your product.

You can read this guide from beginning to end. Or pick and choose whichever principles fascinate you.

Later, this guide can be your reference manual whenever you need to adjust your prices.

–Nick Kolenda

Theory



Customers Evaluate Prices Through Comparisons

You evaluate prices by comparing them to other numbers (e.g., past prices, competitors, adjacent numbers).

You see a carton of eggs for \$3.

Is \$3 a good deal? How can you tell? What's happening in your brain?

Answer: Reference prices.

You compare \$3 to a “standard” price that you derive from:

- » **Previous Prices.** How much were eggs last time?
- » **Advertised Prices.** What price were you promised?
- » **Estimated Price.** What price were you expecting?
- » **Adjacent Prices.** How much are competing eggs?
- » **Nearby Numbers.** Any numbers in the vicinity?

You merge those sources into a single magnitude called a “reference price.” You then compare this reference price to the current product (see Briesch, Krishnamurthi, Mazumdar, & Raj, 1997; Mazumdar, Raj, & Sinha, 2005).

Briesch, R. A., Krishnamurthi, L., Mazumdar, T., & Raj, S. P. (1997).
A comparative analysis of reference price models. *Journal of Consumer Research*, 24(2), 202-214.

Mazumdar, T., Raj, S. P., & Sinha, I. (2005). Reference price research:
Review and propositions. *Journal of marketing*, 69(4), 84-102.



Visuals



Show Prices in Small Fonts

Customers equate visual size with numerical size.

If you see \$50 in a large font, you think: *Hmm, how big is this price? Something feels big. The price must be high.*

Generally, you should display prices in a small font so that they seem numerically smaller (Coulter & Coulter, 2005).

Caveat: This tactic might only work with single products. Large fonts might work better for multiple products because customers judge the difference between those prices: *Hmm, how big is the price difference? Something feels big. The difference must be big.*

Coulter, K. S., & Coulter, R. A. (2005). Size does matter: The effects of magnitude representation congruency on price perceptions and purchase likelihood. *Journal of Consumer Psychology*, 15(1), 64-76.





Position Prices Near the Top or Left

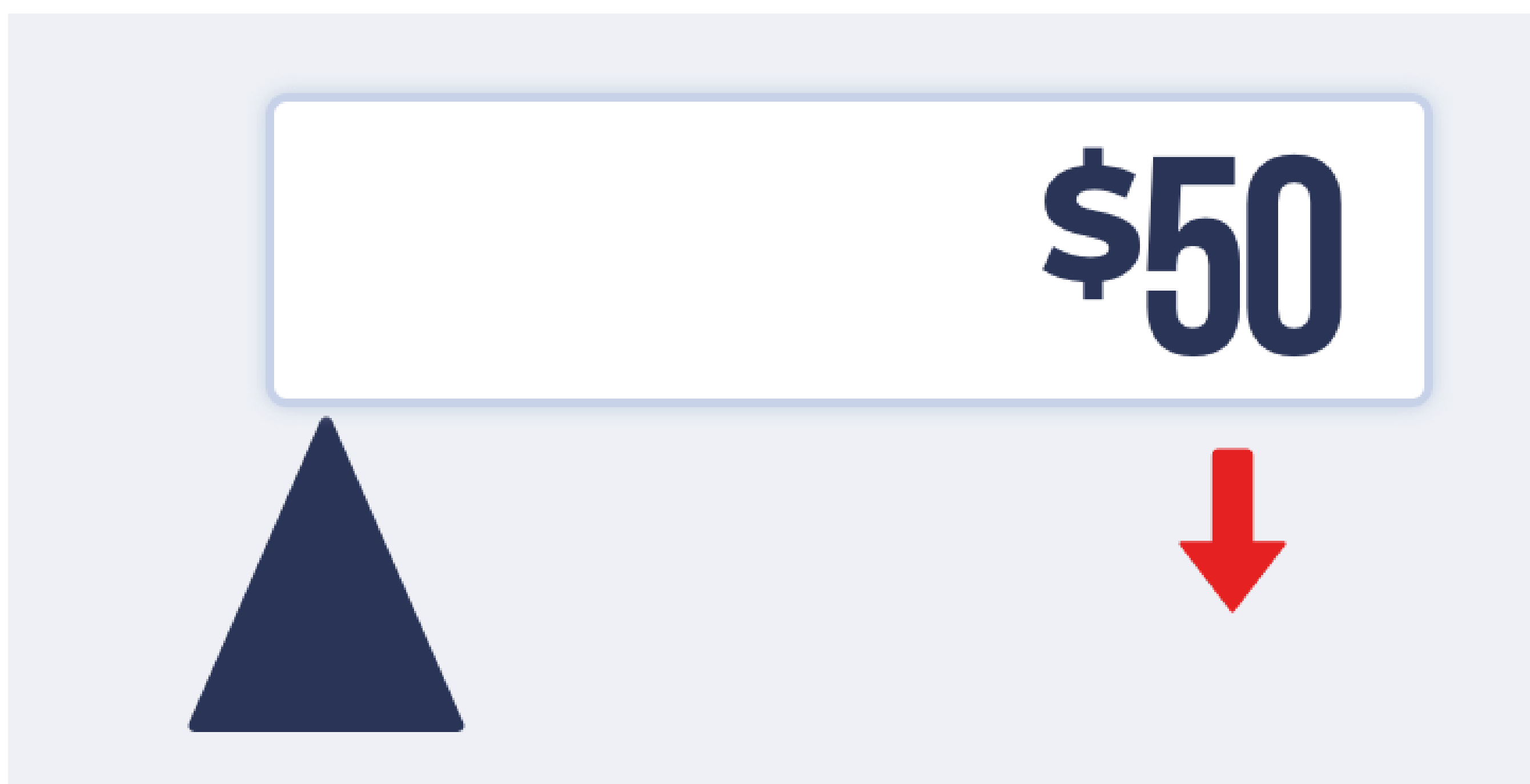
Prices seem cheaper in different locations, particularly toward the top and left.

Why the Left?

Objects on the right pull downward:

...because our eyes enter a visual field from the left, the left naturally becomes the anchor point or 'visual fulcrum.' Thus, the further an object is placed away from the left side (or the fulcrum), the heavier the perceived weight (Deng & Kahn, 2009, p. 9).

Prices might feel heavy toward the right:



Plus, we conceptualize numbers on a horizontal ruler – they get larger from left to right (assuming that you read from left



to right). Thus, small numbers are associated with the left:

...people typically see small numbers to the left of larger ones, [so] they are likely to associate small numerical values with locations on the left (Cai, Shen, & Hui, 2012, p. 723)

Why the Top?

In one study, cookies seemed lighter toward the top of a package (Deng & Kahn, 2009).



Why? Because the cookies seemed lifted to this location — so naturally they must be lighter.



Prices might inherit this effect.



One study confirmed that prices seem expensive in the bottom-right (Park & Ma, 2019; though see Barone, Coulter, & Li, 2020 for a competing result).

Barone, M. J., Coulter, K. S., & Li, X. (2020). The Upside of Down: Presenting a Price in a Low or High Location Influences How Consumers Evaluate It. *Journal of Retailing*, 96(3), 397-410.

Cai, F., Shen, H., & Hui, M. K. (2012). The effect of location on Price estimation: understanding number-location and number-order associations. *Journal of Marketing Research*, 49(5), 718-724.

Casasanto, D. (2009). Embodiment of abstract concepts: good and bad in right-and left- handers. *Journal of Experimental Psychology: General*, 138(3), 351.

Coulter, K. S. (2002). The influence of print advertisement organization on odd-ending price image effects. *Journal of Product & Brand Management*.

Deng, X., & Kahn, B. E. (2009). Is your product on the right side? The "location effect" on perceived product heaviness and package evaluation. *Journal of Marketing Research*, 46(6), 725-738.

Park, J., & Ma, Y. J. (2019). Number-location bias: do consumers



correctly process the number on the product package?. Journal of Product & Brand Management.





Remove Commas From Prices

\$1500 seems cheaper than \$1,500.

Prices seem cheaper without commas (e.g., \$1499; Coulter, Choi, and Monroe, 2012).

Sure, the written length is shorter. But more importantly, the phonetic size is also shorter:

- » **\$1,499:** One-thousand four-hundred and ninety-nine (10 syllables)
- » **\$1499:** Fourteen ninety-nine (5 syllables)

Coulter, K. S., Choi, P., & Monroe, K. B. (2012). Comma N'cents in pricing: The effects of auditory representation encoding on price magnitude perceptions. *Journal of Consumer Psychology*, 22(3), 395-407





Place “Small” Words Near the Price

Small words (e.g., “low,” “tiny”) can be grouped with a price, influencing the perceived size.

People group items that are close together. It's called the *gestalt principle of proximity*.

This visual grouping can trigger a semantic grouping: Grouping merges the semantic meaning of objects. I call it *convergent processing* (see Chapter 4 of my book [The Tangled Mind](#)).

This effect happens with pricing. In one study, an inline skate seemed cheaper when “Low Friction” appeared near the price because people merged the concept of “low” into the price. The skate seemed more expensive when “High Performance” was near the price (Coulter & Coulter, 2005).

Coulter, K. S., & Coulter, R. A. (2005). Size does matter: The effects of magnitude representation congruency on price perceptions and purchase likelihood. *Journal of Consumer Psychology*, 15(1), 64-76.





Insert Alliteration into the Price

Customers were more likely to buy two t-shirts for \$25 because of the matching "t" sounds.

Alliteration feels good. Something just “feels right” – and we misattribute this pleasant sensation to the context.

And it happens with pricing: Customers were more likely to buy two t-shirts for \$25 because of the matching “t” sounds (Davis, Bagchi, & Block, 2016).

Other examples:

- » **Five Dollar Footlong** (Subway)
- » **Four for \$4** (Wendy's)
- » **Ten for \$10** (Kroger)

Davis, D. F., Bagchi, R., & Block, L. G. (2016). Alliteration alters: Phonetic overlap in promotional messages influences evaluations and choice. *Journal of Retailing*, 92(1), 1-12.





Show Two Multiples of the Price Nearby

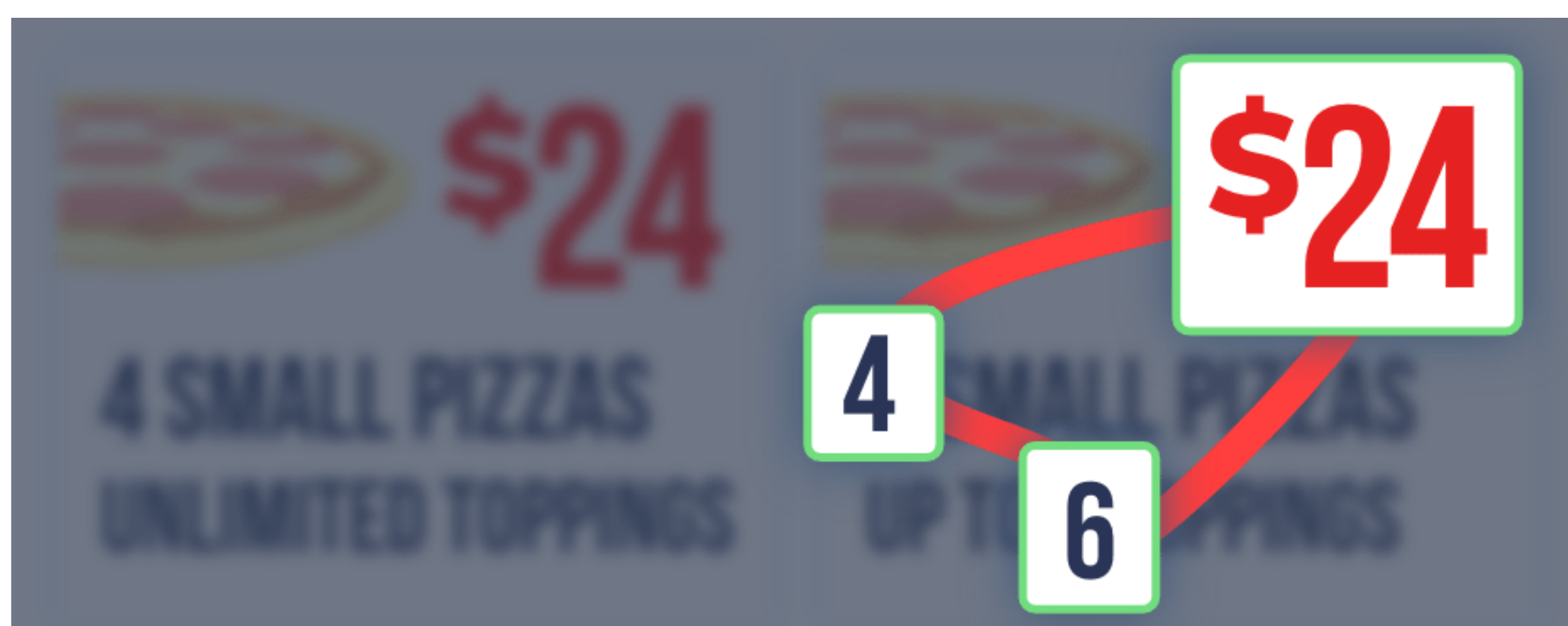
Something will "feel right" about the price.

Compare these two pizza advertisements:



The left ad is economically superior because people have “unlimited” toppings. However, people were more likely to buy the second deal with “6” toppings (King & Janiszewski, 2011).

See the culprit? It involves multiples of the price.



Your brain stores common arithmetic problems:



Over time, children are drilled on simple problems so that an association develops between operands (e.g., 2 x 6) and results (e.g., 12). These stored associations are called “number facts” (Baroody 1985).

Exposure to two numbers (e.g., 2 and 6) immediately activates the sum (e.g., 8) and product (e.g., 12).

In the pizza ads, the price of \$24 seemed better when the ad was showing two multiples (e.g., 6 and 4). Customers misattributed this sensation: *Hmm, something feels right. I must want to buy this deal.*

When possible, show two multiples of your price:

- » **\$15:** 3-Day Sale for \$5 Off
- » **\$120:** Get 4 Weekly 30-Minute Coaching Calls
- » **\$500:** Get 5 Bonus PDFs for Free (\$100 Value)

Caveat: Show two — and only two — multiples. If your price is \$12, many multiples (e.g., 2, 3, 4, *and* 6) will weaken the activation of \$12.

Baroody, A. J. (1985). Mastery of basic number combinations: Internalization of relationships or facts?. *Journal for Research in Mathematics Education*, 16(2), 83-98.

King, D., & Janiszewski, C. (2011). The sources and consequences of the fluent processing of numbers. *Journal of Marketing Research*, 48(2), 327-341.





Display Red Prices to Men

Men make decisions quickly, and they assume that red prices indicate savings.

Men prefer prices in red fonts (Van Droogenbroeck, Van Hove, & Cordemans, 2018).

Men seem to process the ads less in-depth and use price color as a visual heuristic to judge perceived savings (Puccinelli et al., 2013, p. 121).

Caveat: All prices need to be red. Changing the color of one price could backfire (Ye, Bhatt, Jeong, & Zhang, 2020).

Puccinelli, N. M., Chandrashekar, R., Grewal, D., & Suri, R. (2013). Are men seduced by red? The effect of red versus black prices on price perceptions. *Journal of Retailing*, 89(2), 115-125.

Van Droogenbroeck, E., Van Hove, L., & Cordemans, S. (2018). Do red prices also work online?: An extension of Puccinelli et al.(2013). *Color Research & Application*, 43(1), 110- 113.

Ye, H., Bhatt, S., Jeong, H., Zhang, J., & Suri, R. (2020). Red price? Red flag! Eye-tracking reveals how one red price can hurt a retailer. *Psychology & Marketing*, 37(7), 928-941.





Deemphasize the Price of Emotional Products

Emotional products have strong benefits, but weak economic value.

Orient customers toward the benefits of emotional products, rather than the prices,

1. Reduce the Saliency of Prices

Do you sell jewelry? On your website, don't emphasize the prices.



2. Focus on Time and Usage

Avoid references to money. Instead, emphasize the duration of time that customers will spend.



Researchers alternated three signs for a lemonade stand:

- » **Time:** “Spend a little time and enjoy C & D’s lemonade”
- » **Money:** “Spend a little money and enjoy C & D’s lemonade”
- » **Neutral:** “Enjoy C & D’s lemonade”

The “time” sign attracted twice as many people (who paid twice as much; Mogilner & Aaker, 2009).

Mogilner, C., & Aaker, J. (2009). “The time vs. money effect”: Shifting product attitudes and decisions through personal connection. *Journal of Consumer Research*, 36(2), 277-291.





Donate **29** to
feed children

Remove the Currency Symbol When Possible

Removing this symbol reduces the pain of paying.

You should typically include the currency symbol in your prices – these symbols help customers understand when a number is, indeed, a price.

But if your number is clearly a price, perhaps you could remove the symbol (Yang, Kimes, & Sessarego, 2009).

Perhaps this tactic works best in luxury contexts, (e.g., high-end restaurant).

Yang, S. S., Kimes, S. E., & Sessarego, M. M. (2009). Menu price presentation influences on consumer purchase behavior in restaurants. *International Journal of Hospitality Management*, 28(1), 157-160.



Framing



Insert Large Numbers Near Prices

Customers compare these large numbers to the price, which makes it feel smaller.

In one study, researchers sold music CDs on a boardwalk in West Palm Beach. Every 30 minutes, an adjacent vendor switched the price of a sweatshirt between \$10 or \$80.

Turns out, the \$80 sweatshirt boosted sales of CDs because they seemed cheaper (Nunes & Boatwright, 2004).

But surprisingly, this anchoring effect works with any number. In another study, people reflected on the last two digits of their social security number. If those digits were high, they were willing to pay a higher amount for products.

SS NUMBER	WILLING TO PAY
00 - 19	\$16.09
20 - 39	\$26.82
40 - 59	\$29.27
60 - 79	\$34.55
80 - 99	\$55.64

Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *The Quarterly journal of economics*, 118(1), 73-106.



This anchoring effect occurs subconsciously – it even happened when researchers subliminally exposed people to a high number (Adaval & Monroe, 2002).

Therefore, show high numbers near your price:

- » Join 5,487 happy customers
- » Invoice #8986
- » We donated \$100,000 to charity

Those large numbers raise the reference price, which makes your actual price seem cheaper.

Adaval, R., & Monroe, K. B. (2002). Automatic construction and use of contextual information for product and price evaluations. *Journal of Consumer Research*, 28(4), 572- 588.

Ariely, D., Loewenstein, G., & Prelec, D. (2003). "Coherent arbitrariness": Stable demand curves without stable preferences. *The Quarterly journal of economics*, 118(1), 73-106.

Nunes, J. C., & Boatwright, P. (2004). Incidental prices and their effect on willingness to pay. *Journal of Marketing Research*, 41(4), 457-466.





Place a Larger Number on the Left

Customers can subtract these numbers more easily, which makes the difference seem larger.

Displaying a sale price?

Place the original price (the larger number) to the left. It's called the *subtraction principle* (Biswas et al., 2013).

Follow this technique for quantities, too. Which order is better:

- » \$29 for 70 items
- » 70 items for \$29

Answer: The second sequence (Bagchi & Davis, 2012). The large quantity (e.g., 70) made the price seem cheaper.

Bagchi, R., & Davis, D. F. (2012). 29 for 70 items or 70 items for 29? How presentation order affects package perceptions. *Journal of Consumer Research*, 39(1), 62-73.

Biswas, A., Bhowmick, S., Guha, A., & Grewal, D. (2013). Consumer evaluations of sale prices: role of the subtraction principle. *Journal of Marketing*, 77(4), 49-66.



Item A — **\$10**

Item B — **\$9**

Item C — **\$8**



Sort Prices From High to Low

Customers adopt a higher reference price, which makes subsequent prices seem cheaper.

Over an 8-week span, researchers alternated beer prices on a menu. They maximized revenue when prices were sorted from highest to lowest (Suk, Lee, & Lichtenstein, 2012).



Two reasons.

First, initial prices establish a reference price. Higher initial prices? Higher reference prices.

Scenario	Initial Price	BEER 1	BEER 2	BEER 3	BEER 4	BEER 5
LOW → HIGH	\$4	\$4	\$4	\$4	\$5	\$6
HIGH → LOW	\$9	\$10	\$9	\$8	\$8	\$7

Customers use these initial prices to evaluate subsequent prices.

Second, there's loss aversion. While scanning products that get higher in price, customers lose the ability to pay a lower price. They feel pressured to pounce on a cheaper item before they get too expensive.

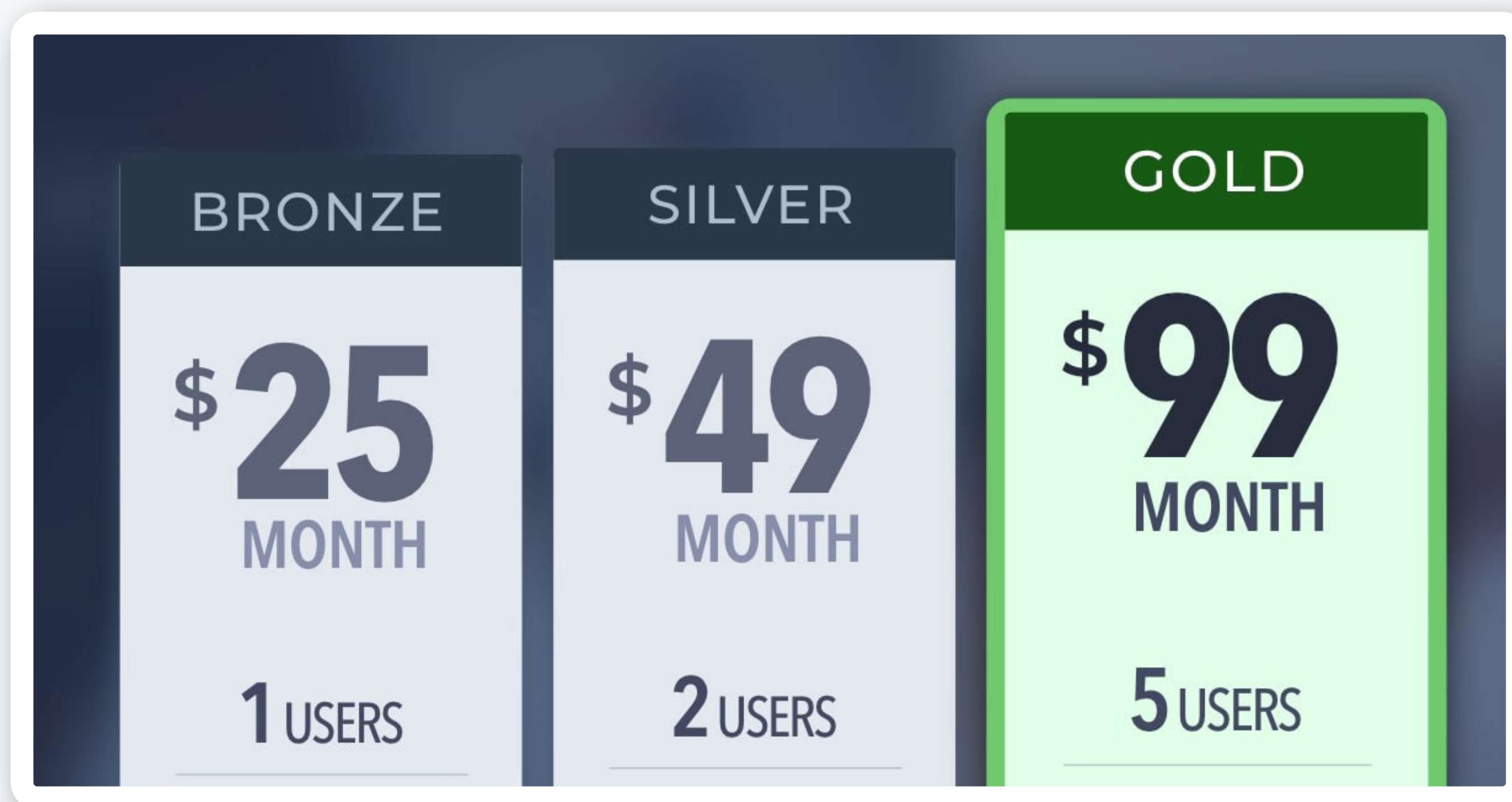
Showing prices in a *decreasing* sequence can trigger the reverse effect. Each new product feels like a loss in quality.



Customers feel pressured to pounce on an option before they lose too much quality.

Suk, K., Lee, J., & Lichtenstein, D. R. (2012). The influence of price presentation order on consumer choice. *Journal of Marketing Research*, 49(5), 708-717.





Distinguish the Most Expensive Option

If customers evaluate this option first, the subsequent options seem cheaper.

Research says to sort prices from high to low (Suk, Lee, & Lichtenstein, 2012).

But it's not necessary. The real effect stems from the order in which prices are evaluated.

You could achieve the same effect by adding a visual distinction to the most expensive option. Customers evaluate this product first, which inflates their reference price. All of the adjacent prices will seem cheaper.

Caveat: If the expensive plan only satisfies a tiny segment of customers, then emphasize a more popular plan.

Suk, K., Lee, J., & Lichtenstein, D. R. (2012). The influence of price presentation order on consumer choice. *Journal of Marketing Research*, 49(5), 708-717.





Offer a Similar (Yet Worse) Product

Your existing product will become more appealing.

A popular study tested subscription options to the *Economist* magazine:

- » **\$59** — Digital
- » **\$125** — Print
- » **\$125** — Print and Digital

At first glance, it seems wrong. You can buy the digital and print for the same price as the print only.

But alas, it's a decoy option.

Nobody chooses the “print” subscription, but this option shifts demand toward the “print and digital” subscription, a more expensive plan (Ariely, 2008).

Ariely, D. (2008). *Predictably irrational* (pp. 278-9). New York: HarperCollins.





or \$1.60/DAY

Mention the Daily Equivalence

Customers compare this daily value to a reference price, so it feels like a better deal.

Frame your price in daily terms (e.g., \$1.60/day) or petty cash expense (e.g., cup of coffee; Gourville, 1998; Gourville, 1999).

But don't exceed \$4 per day If you sell a software license for \$4200 per year, don't frame your price as \$11.50 per day. It will seem more expensive (Gourville, 2003).

That said, college students were the original sample:

...the inflection point for the college students used in this study was somewhere between \$4 and \$11.50 per day. One could speculate how this inflection point might vary across consumer segments... For a college student, whose typical daily expenses may be in the \$1 to \$3 range, \$10 a day may seem like a daunting sum... for an accomplished business person, \$10 per day may still be considered "petty cash" (Gourville, 2003, p. 133)

Perhaps daring marketers could push beyond a daily framing: "Get our new widget for only \$0.00003 per second."

Gourville, J. T. (1998). Pennies-a-day: The effect of temporal reframing on transaction evaluation. *Journal of Consumer Research*, 24(4), 395-408

Gourville, J. T. (1999). The effect of implicit versus explicit comparisons



on temporal pricing claims. *Marketing Letters*, 10(2), 113-124.

Gourville, J. T. (2003). The effects of monetary magnitude and level of aggregation on the temporal framing of price. *Marketing Letters*, 14, 125-135.





Don't Bundle Cheap and Expensive Items

Customers focus on the average, rather than the sum.

Cheap items detract value from expensive items. Don't bundle a \$500 home gym with a \$5 fitness DVD (Brough & Chernev, 2012).

Customers *sum* these values, but subconsciously, they also *average* them. In addition to \$505, it also feels like \$250.

Brough, A. R., & Chernev, A. (2012). When opposites detract: Categorical reasoning and subtractive valuations of product combinations. *Journal of Consumer Research*, 39(2), 399- 414.





Create a Payment Medium

You can transform the payment into a separate medium (e.g., monthly credits, gift cards).

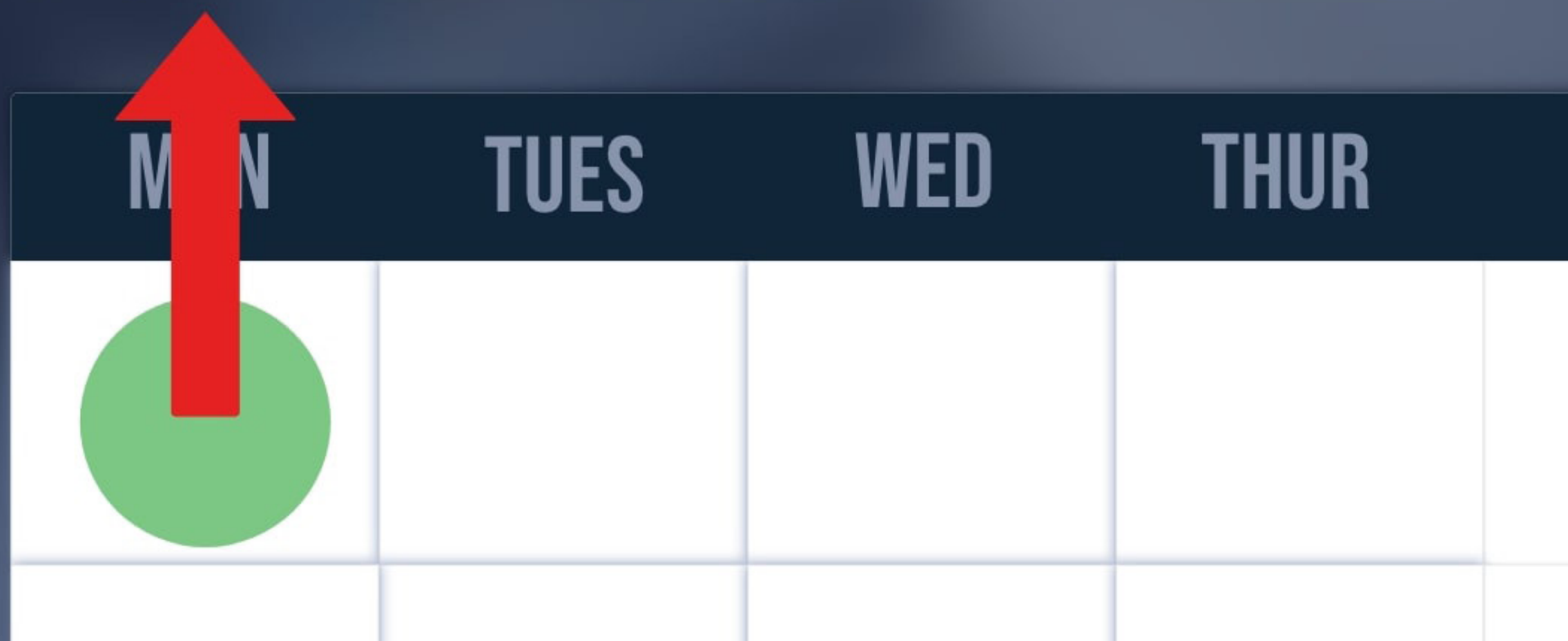
Customers are more likely to spend money from a separate medium because the payment feels less painful (Nunes & Park, 2003).

Perhaps you could require new customers to deposit a refundable \$10 into their account, which they can use for services. Customers will be more willing to spend this money because it resides in a separate medium.

Nunes, J. C., & Park, C. W. (2003). Incommensurate resources: Not just more of the same. *Journal of Marketing Research*, 40(1), 26-38.



You will receive _____



MON	TUES	WED	THUR
●			

Charge Customers Before They Consume

Paying beforehand helps numb the pain of paying because customers can look forward to the benefits.

Customers should pay *before* using your product. For one, you're more likely to get paid. Always nice.

Second, customers will be happier. While prepaying, they can look forward to the benefits. If they already consumed those benefits, nothing will numb the pain of paying (Prelec & Loewenstein, 1998).

If you charge customers every month, charge them at the beginning of the month.

Prelec, D., & Loewenstein, G. (1998). The red and the black: Mental accounting of savings and debt. *Marketing science*, 17(1), 4-28.





Describe the Costs of Your Product

Customers prefer prices that are determined by material costs, rather than supply and demand.

Customers want to pay a "fair" price.

Therefore, describe your costs:

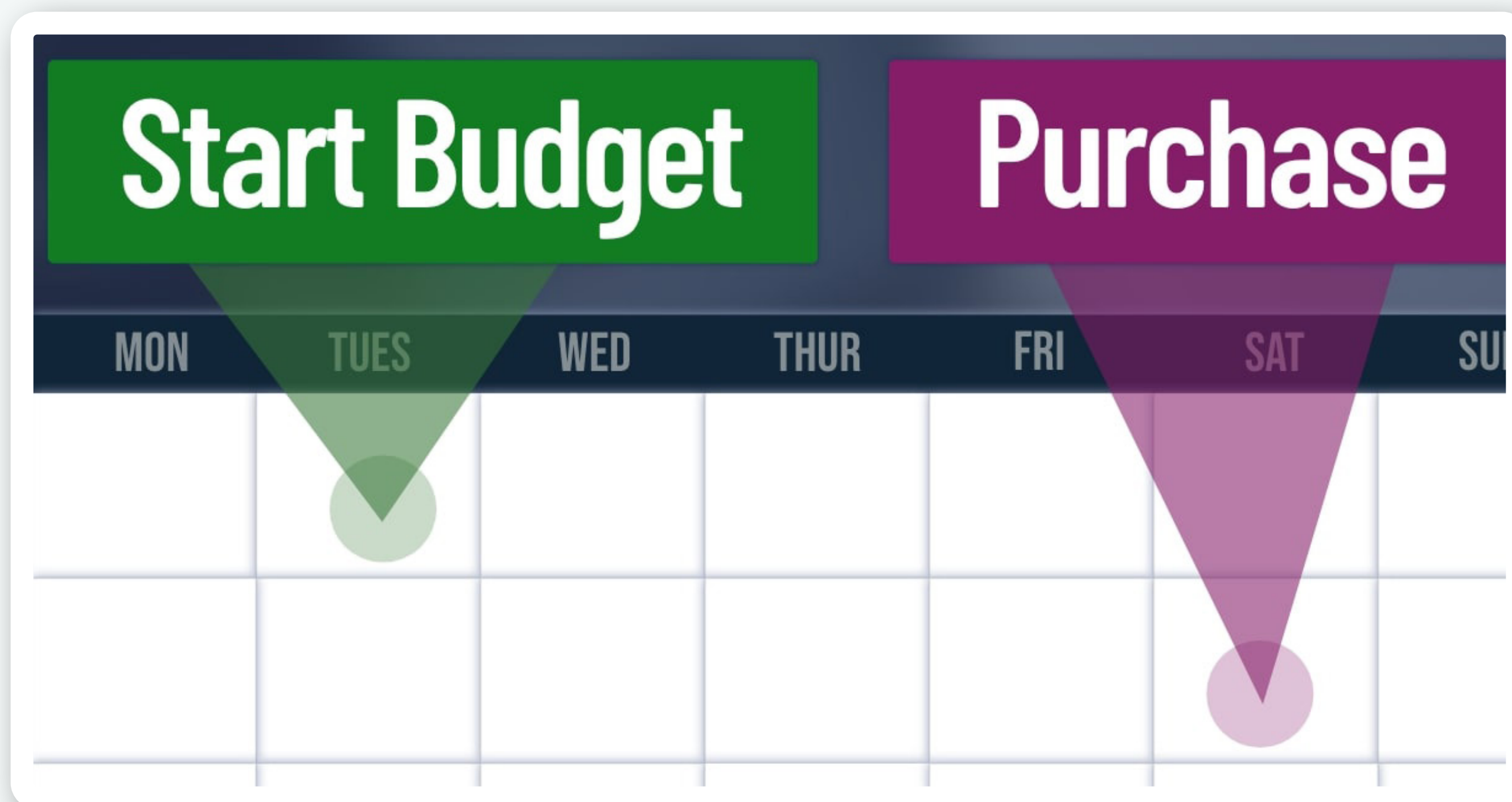
...consumers have little knowledge of a seller's actual costs and profit margins...Therefore, sellers making the relevant cost and quality information transparent helps (Xia, Monroe, & Cox, 2004, pp. 9).

Update (2020): Researchers at Harvard tested this claim. And, indeed, it works (Mohan, Buell, & John, 2020). A retailer boosted sales in an email blast by describing the costs for their wallet (e.g., leather - \$14.68, construction - \$38.56, duties - \$4.26).

Mohan, B., Buell, R. W., & John, L. K. (2020). Lifting the veil: The benefits of cost transparency. *Marketing Science*, 39(6), 1105-1121.

Xia, L., Monroe, K. B., & Cox, J. L. (2004). The price is unfair! A conceptual framework of price fairness perceptions. *Journal of marketing*, 68(4), 1-15.





Encourage Customers to Budget Early

Early budgeting pushes you further away from this initial money, reducing the pain of paying from these funds.

Budgeting is good, right?

Not always. Sometimes it *increases* spending.

Why? Early budgeting separates you from this money. As you move further away from these funds, payments feel less painful. In one study, students spent more money on a class ring when they budgeted early (Chloe & Kan, 2021).

Perhaps hotels and rental car agencies should offer upgrades to customers who make reservations in advance. Or perhaps overly frugal customers should budget for a vacation farther in advance to reduce the pain of spending money.

Choe, Y., & Kan, C. (2021). Budget depreciation: when budgeting early increases spending. *Journal of Consumer Research*, 47(6), 937-958.





Apply Refunds Toward a Purchase

Customers feel less pain spending money from refunds because they feel like "free money."

Money feels different when you receive it as a gift or prize. It doesn't feel like "real" money. It feels easier to spend.

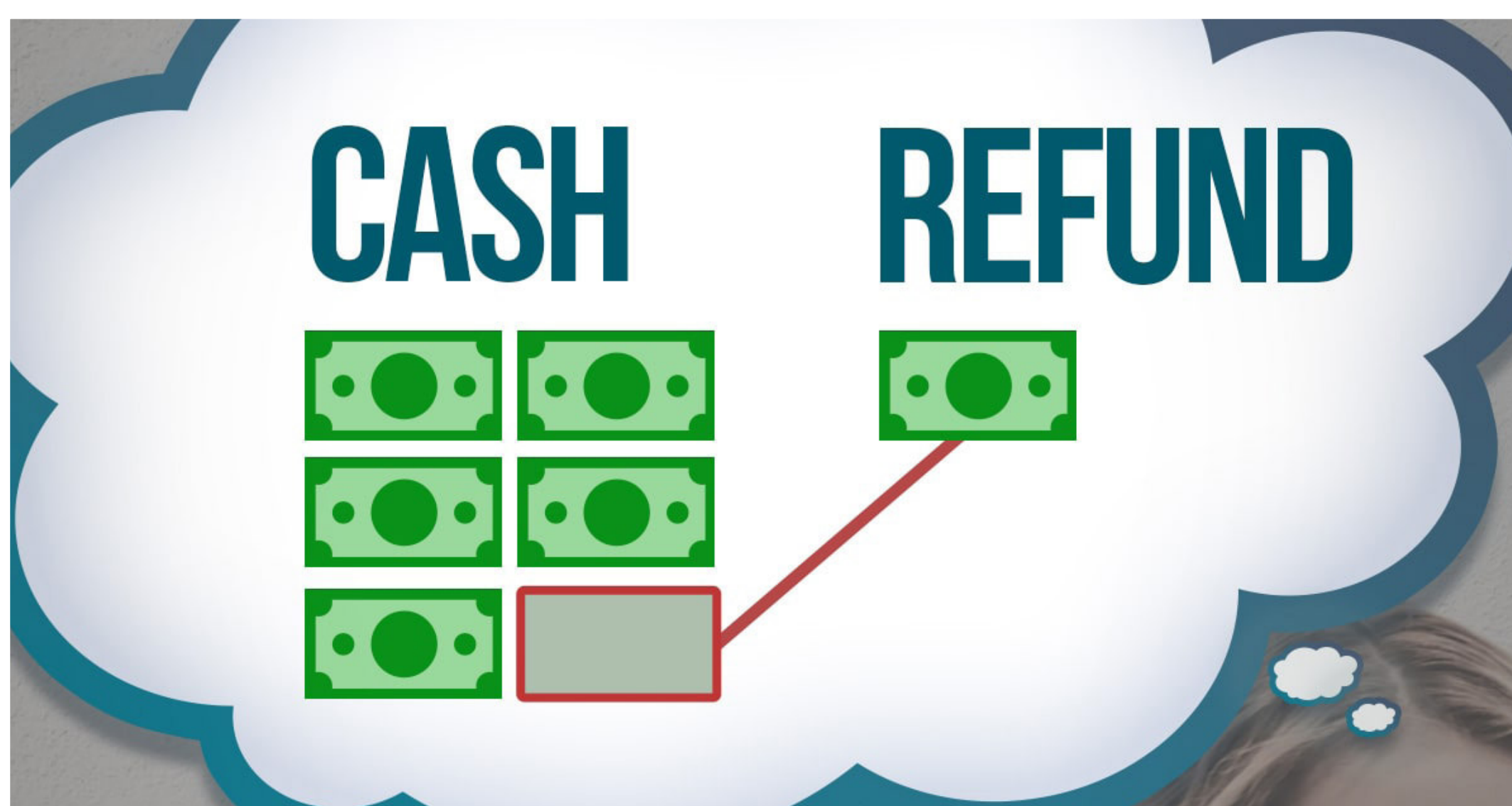
It happens with refunds too (Lee & Morewedge, 2023).

When you receive money after returning a product, you feel tempted to spend this money because it bypasses the *pain of paying*.

Why It Works

You can blame *mental accounting*, popularized by Richard Thaler who won the Nobel prize in Economics.

If you buy a pair of jeans for \$50, this purchase feels painful. But if you receive your money back, you categorize these funds differently:



The refund doesn't feel like "real" cash.



Plus, you felt pain when this money left your possession the first time. Any new purchase will be credited with this original pain.

Once the refund merges into your bank account, the effect disappears. With no invisible boundary to separate this refund, spending it feels painful again because this payment will be coming from your "real" money.

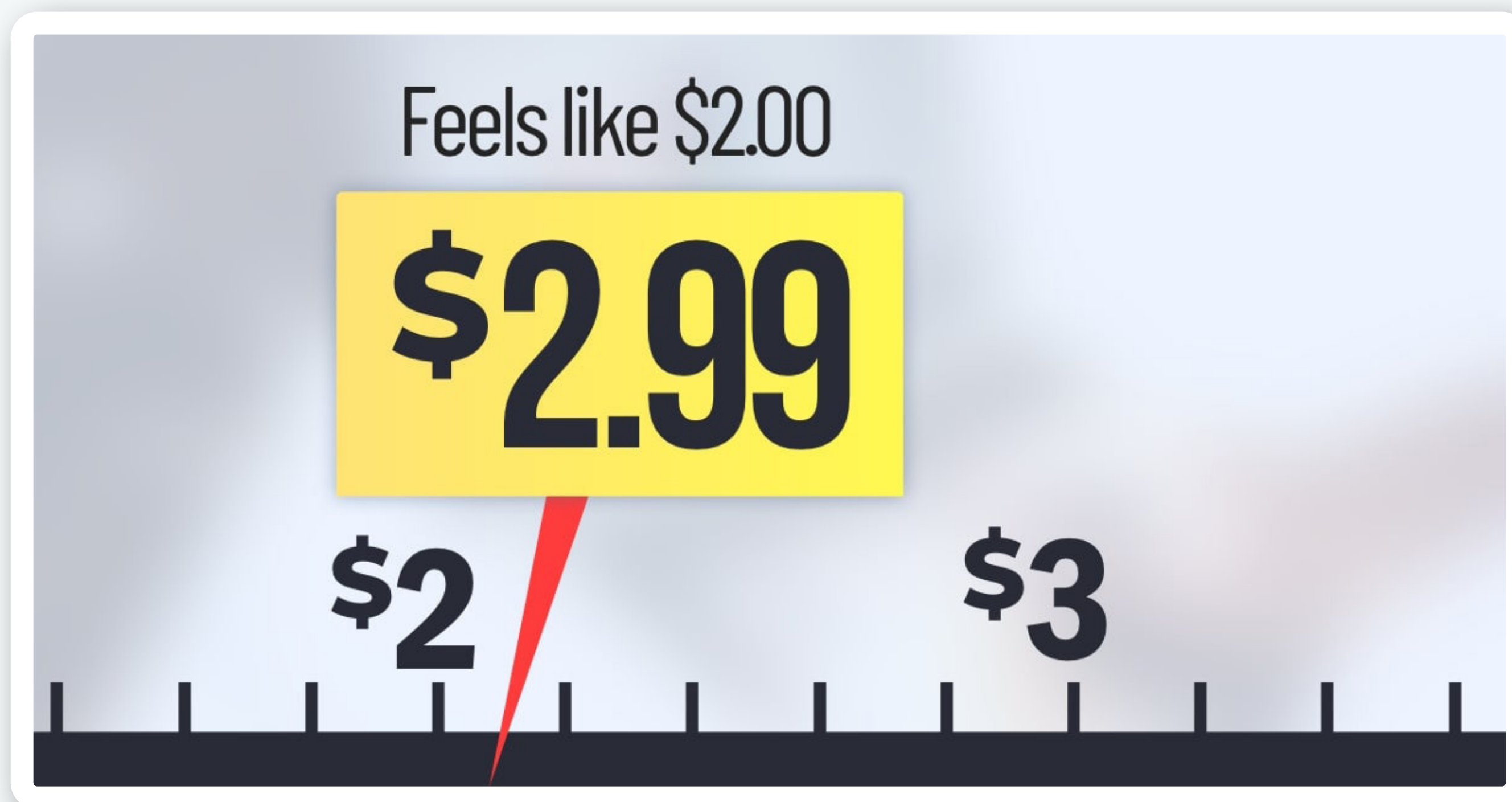
How to Apply It

- » **Cross-Sell During Product Returns.** Suggest other products that customers could buy when returning a product. These payments will feel less painful.
- » **Apply Savings Toward a Purpose.** Are you cheaper than competitors? Explain how these savings could be used for additional services. These savings will feel psychologically different than regular cash.
- » **Control Your Spending.** You can stop businesses from applying this effect on you. With this knowledge, you'll know why it feels easier to spend money after returning a product or receiving a tax refund, and you can modify your decisions accordingly.

Lee, C. Y., & Morewedge, C. K. (2023). Mental accounting of product returns. *Journal of Consumer Psychology*.



Numerals



Reduce the Left Digit By One

Use "charm" prices (e.g., \$2.99, \$49.95) to reduce the left digit as much as possible.

Your brain encodes prices before you finish reading the numerals. Therefore, a one-cent difference between \$2.99 and \$3.00 can feel like a one-dollar difference:

...while evaluating "2.99," the magnitude encoding process starts as soon as our eyes encounter the digit "2." Consequently, the encoded magnitude of \$2.99 gets anchored on the leftmost digit (i.e., \$2) and becomes significantly lower than the encoded magnitude of \$3.00 (Thomas & Morwitz, 2005, p. 55).

Thomas, M., & Morwitz, V. (2005). Penny wise and pound foolish: the left-digit effect in price cognition. *Journal of Consumer Research*, 32(1), 54-64.



\$28.16

“twenty-eight sixteen”



5 syllables

Choose Prices With Fewer Syllables

Subconsciously, phonetic size feels like numerical size.

Prices seem cheaper with fewer syllables (Coulter, Choi, and Monroe, 2012).

Consider two prices:

- » **\$27.82:** Twenty-seven eighty-two (7 syllables)
- » **\$28.16:** Twenty-eight sixteen (5 syllables)

Intriguingly, \$28.16 feels numerically smaller because of the smaller phonetic size. You don't need to say the price out loud – your brain encodes the phonetic version regardless (Dehaene, 1992).

Coulter, K. S., Choi, P., & Monroe, K. B. (2012). Comma N'cents in pricing: The effects of auditory representation encoding on price magnitude perceptions. *Journal of Consumer Psychology*, 22(3), 395-407.

Dehaene, S. (1992). Varieties of numerical abilities. *Cognition*, 44(1-2), 1-42.





Divide Prices Into Smaller Units

These "partitioned prices" are more persuasive.

Reduce your primary price as much as possible. Perhaps you can divide this number into smaller units (e.g., fees; see Morwitz, Greenleaf, & Johnson, 1998).

1. Separate the Shipping Cost

Researchers tested bidding structures in online auctions:

- » \$0.01 with \$3.99 shipping
- » \$4 with free shipping

Auctions with separate shipping generated more revenue (Hossain & Morgan, 2006). Other research confirmed those results (Ward & Clark, 2002).

Caveat: Those studies might be outdated. Today, many customers expect free shipping.

2. Offer Prices in Installments

Instead of selling a course for \$1,250, sell the course for 12 payments of \$115. Customers will compare the installment price (\$115) to the reference price.

Morwitz, V. G., Greenleaf, E. A., & Johnson, E. J. (1998). Divide and prosper: consumers #reactions to partitioned prices. *Journal of marketing research*, 35(4), 453-463.



Hossain, T., & Morgan, J. (2006). ... plus shipping and handling: Revenue (non) equivalence in field experiments on ebay. *Advances in Economic Analysis & Policy*, 5(2).

Ward, S. G., & Clark, J. M. (2002). Bidding behavior in on-line auctions: An examination of the eBay Pokemon card market. *International Journal of Electronic Commerce*, 6(4), 139- 155.





Be Precise With Large Prices

Highly precise numbers feel smaller.

Based on 27,000 real estate transactions, specific prices (e.g., \$362,978) are more effective than rounded prices (\$350,000; Thomas, Simon, & Kadiyali, 2007).

Why? Maybe buyers are less likely to negotiate?

That's what I thought — but nope. We just associate precise numbers with small values.

Think about it. You're more likely to use specific numbers when dealing with small numbers (e.g., 1, 2, 3). These prices just feel smaller.

Thomas, M., Simon, D. H., & Kadiyali, V. (2007). Do consumers perceive precise prices to be lower than round prices? Evidence from laboratory and market data. Johnson School at Cornell University Research Paper, (09-07).





Place Low Numerals After Right-Facing Digits

Right-facing digits push your attention toward adjacent digits. If these digits are low, you round down.

Human bodies guide attention.

You instinctively look in whichever direction a body is facing (Langton, Watt, & Bruce, 2000).

A similar effect happens with digits (Coulter, 2007). Digits can face particular directions:

- » **Left:** 2, 3, 4, 7, 9
- » **Center:** 1, 8, 0
- » **Right:** 5, 6

These orientations guide attention.

For example, rightward digits (e.g., 5, 6) push attention toward the right. In prices, these digits push attention toward the later digits – and customers are more likely to round up or down accordingly. Therefore, place small numerals after rightward digits so that customers round down to a lower price.

Conversely, leftward digits (e.g., 2, 3, 4, 7, 9) keep attention toward the left. In prices, these digits push attention away from the later digits. You can place large numerals at the ends of these prices because customers will ignore them.

Coulter, K. S. (2007). The effects of digit-direction on eye movement bias and price- rounding behavior. *Journal of Product & Brand Management*.



Langton, S. R., Watt, R. J., & Bruce, V. (2000). Do the eyes have it? Cues to the direction of social attention. *Trends in cognitive sciences*, 4(2), 50-59.





Tailor Prices Toward Names or Birthdays

Customers prefer prices that contain the same letters in their name or birthday.

We prefer things that resemble us (Pelham, Carvallo, & Jones, 2005). Some researchers argue that this principle dictates our lives (e.g., people named Dennis are more likely to become dentists; Pelham, Mirenberg, & Jones, 2002).

It happens with prices too:

...consumers like prices (e.g., "fifty-five dollars") that contain digits beginning with the same first letter (e.g., "F") as their own name (e.g., "Fred," "Mr. Frank") more than prices that do not. Similarly, prices that contain cents digits (e.g., \$49.15) that correspond to a consumer's date of birth (e.g., April 15) also enhance pricing liking and purchase intentions. (Coulter and Grewal, 2014, p. 102)

Giving a quote? Perhaps you could adjust the numerals to match their name or birthday (after a quick glance at Facebook).

Coulter, K. S., & Grewal, D. (2014). Name-letters and birthday-numbers: Implicit egotism effects in pricing. *Journal of Marketing*, 78(3), 102-120.

Pelham, B. W., Carvallo, M., & Jones, J. T. (2005). Implicit egotism. *Current Directions in Psychological Science*, 14(2), 106-110.

Pelham, B. W., Mirenberg, M. C., & Jones, J. T. (2002). Why Susie sells seashells by the seashore: implicit egotism and major life decisions. *Journal of personality and social psychology*, 82(4), 469.





Use Round Prices in the Right Context

\$50 is easier to process than \$49.63, which can work better for emotional or convenient purchases.

Round prices work better for:

1. Emotional Purchases

Round prices just “feel right” – a sensation that matches the nature of emotional products. Customers preferred champagne with a round price (\$40), yet preferred a calculator with a sharp price (\$39.72 and \$40.29; Wadhwa and Zhang, 2015).

2. Convenience Purchases

Round prices trigger an “easy” sensation, and customers misattribute this feeling to the transaction – the purchase seems faster and easier (Wieseke, Kolberg, & Schons, 2016). Therefore, use round prices when customers prefer a fast checkout.

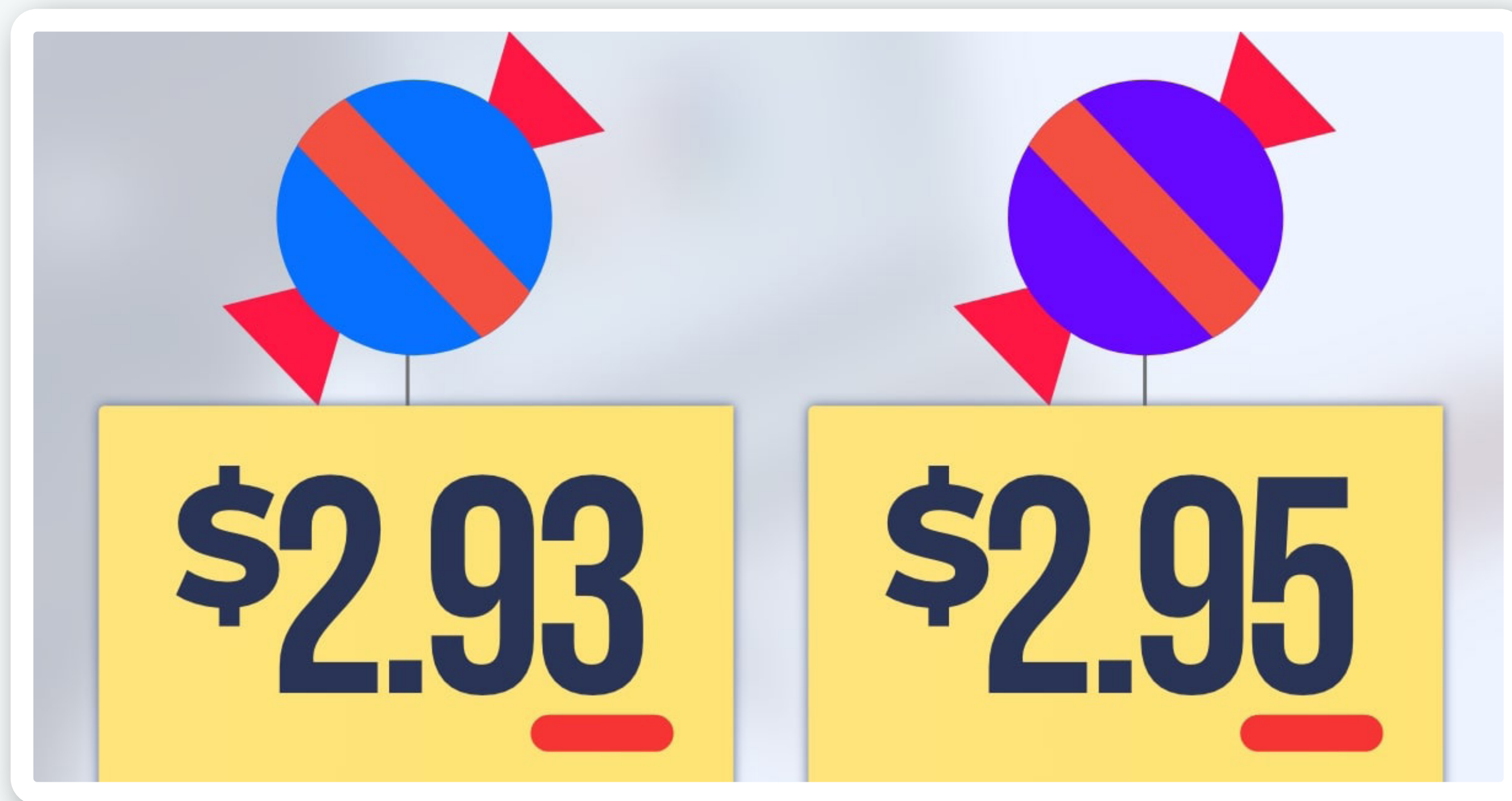
3. Social Benefits

Round prices are divisible by other numbers, and customers misattribute this connectivity. Customers prefer round prices for social products (e.g., conference tickets) because they confuse the numerical connectivity for social connectivity (Yan & Sengupta, 2021).



- Wadhwa, M., & Zhang, K. (2015). This number just feels right: The impact of roundedness of price numbers on product evaluations. *Journal of Consumer Research*, 41(5), 1172- 1185.
- Janiszewski, C., & Uy, D. (2008). Precision of the anchor influences the amount of adjustment. *Psychological Science*, 19(2), 121-127.
- Wieseke, J., Kolberg, A., & Schons, L. M. (2016). Life could be so easy: The convenience effect of round price endings. *Journal of the Academy of Marketing Science*, 44(4), 474- 494.
- Yan, D., & Sengupta, J. (2021). The Effects of Numerical Divisibility on Loneliness Perceptions and Consumer Preferences. *Journal of Consumer Research*, 47(5), 755-771.





Add Slight Price Differences in Your Assortment

Choices become easier with small differences.

You prefer assortments with similar options (Sagi & Friedland, 2007).

In this scenario, you receive the same benefits from every option – so you don't lose any benefits by choosing an option.

In one study, researchers asked two groups if they wanted to buy gum. Each group had two options:

- » **A:** Same price (e.g., 63 cents)
- » **B:** Different price (62 cents vs. 64 cents)

Turns out, the different prices boosted purchases (Kim, Novemsky, & Dhar, 2012).

But why? Shouldn't similar prices perform better?
Surprisingly, no.

Paradoxically, the packs seemed less similar with the same price. In this scenario, customers struggled to distinguish these packs so they searched harder for differences.

However, slightly different prices can reduce this urge. Customers remained focused on similarities, so they are more likely to choose an option because they won't lose benefits by choosing an option.

Kim, J., Novemsky, N., & Dhar, R. (2013). Adding small differences can



increase similarity and choice. *Psychological science*, 24(2), 225-229.

Sagi, A., & Friedland, N. (2007). The cost of richness: The effect of the size and diversity of decision sets on post-decision regret. *Journal of personality and social psychology*, 93(4), 515.





Raise Your Prices in Small Increments

Use frequent (yet smaller) price changes. Avoid waiting until the moment of desperation.

Adjust prices based on the *just noticeable difference* (i.e., the difference that's *just* noticeable)

If your price is \$11, an increase to \$20 will be more noticeable than an increase to \$12.

It seems obvious, but many businesses fail here. They are scared to raise their price, so they wait until it's *absolutely necessary*. By that point, however, they need to raise their price by a wide margin.

Plus, if your price stays the same for years, then customers become accustomed to this price. Any change will be highly noticeable.





Downsize Features Besides Price

You can change prices without changing the numerals.

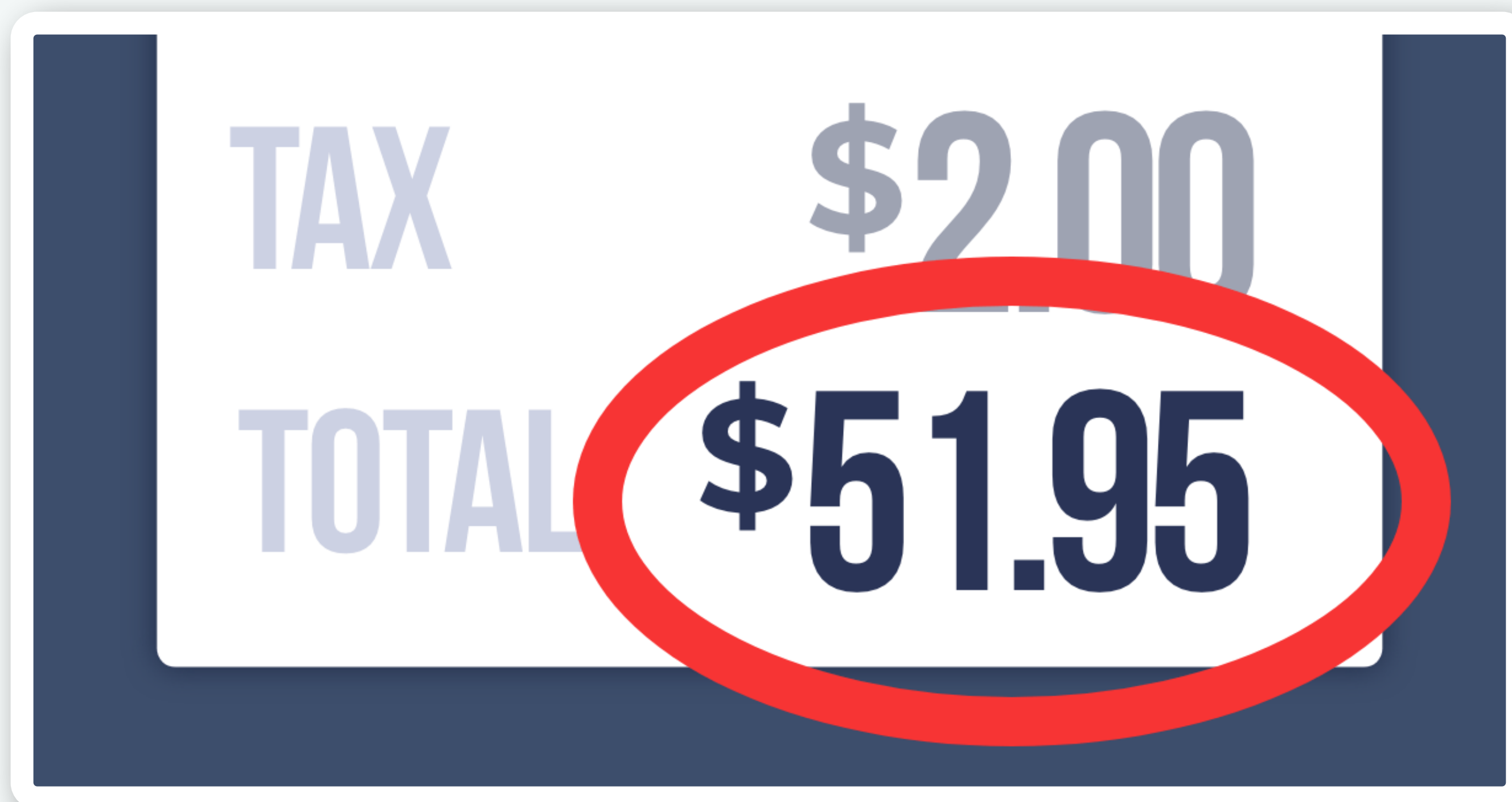
Some markets are highly price sensitive.

In these scenarios, you might need to adjust a less noticeable feature, like size. Lower costs will increase your margins without alerting people to a negative change.

If you downsize physical size, reduce all three dimensions: height, width, length. Changing a single dimension is more noticeable (Chandon & Ordabayeva, 2009).

But obviously, be transparent and use your judgment. Don't take advantage of customers.





Set Prices Above Round Numbers to Sell Upgrades

It feels easier to spend money when prices surpass a round number (\$51.95).

Charm prices (e.g., \$19.95) aren't always effective.

Pricing above a round number (e.g., \$20.05) can influence customers to upgrade their purchase ([Kim, Malkoc, & Goodman, 2022](#)).

In a recent study, researchers sold coffee:

- » **Small Coffee:** \$0.95
- » **Large Coffee:** \$1.20

Customers preferred the small coffee because it seemed like a better deal.

But then researchers added \$0.05 to each price:

- » **Small Coffee:** \$1.00
- » **Large Coffee:** \$1.25

In this new assortment, customers preferred the large coffee. Even though the large coffee was still \$0.25 more expensive, it seemed like a better deal because both coffees were above \$1.

Round numbers are thresholds that influence our spending.

Suppose that you see a \$49.95 backpack. Your budget was \$50, so you proceed to the checkout.

But hmm, the total (with tax) is now \$51.95.



It's only \$2 more, right? So you still plan to buy it.

However, look closely: You're now prepared to spend above \$50. If you see a superior backpack for \$65, you're more likely to buy this upgraded version instead of the \$49.95 backpack.

Once you pass a round number, like \$50, new expenditures feel less distinguishable (and thus less painful).

That same effect could happen with:

- » \$500 flight
- » \$5,000 deposit
- » \$50,000 car

When you pass round prices, it feels easier to spend more money.

Kim, J., Malkoc, S. A., & Goodman, J. K. (2022). The threshold-crossing effect: Just-below pricing discourages consumers to upgrade. *Journal of Consumer Research*, 48(6), 1096-1112.



Discounts



Make Sale Prices Look Different From Original Prices

A visual difference feels like a numerical difference.

Add visual distinctions to sales prices (e.g., color, size, font; Coulter and Coulter, 2005).

Why? Think of infomercials.

Viewers typically see the current problem in black-and-white, yet the new solution in vibrant color.

I call it *contrast fluency*. Your brain misattributes these visual distinctions to abstract distinctions: *Hmm, something seems different. This product must make a big difference.*

Likewise, with numbers: *Hmm, this sale price feels different. It must be numerically different.*

Coulter, K. S., & Coulter, R. A. (2005). Size does matter: The effects of magnitude representation congruency on price perceptions and purchase likelihood. *Journal of Consumer Psychology*, 15(1), 64-76.





Add Space Between Discounted Prices

A visual gap makes the numerical gap seem larger.

You conceive numbers along a horizontal ruler.

Therefore, you confuse *visual* distance for numerical distance: Numbers seem numerically further when they are visually further (Coulter & Norberg, 2009).

Obviously, the gap can't be too wide — you still need to group these numbers into a meaningful unit. But always leave a breathable gap between the original and discounted price.

Coulter, K. S., & Norberg, P. A. (2009). The effects of physical distance between regular and sale prices on numerical difference perceptions. *Journal of Consumer Psychology*, 19(2), 144-157.



A dark blue rectangular box with rounded corners and a white border. Inside, the word "ORIGINAL" is written in bold, dark blue capital letters on a yellow rectangular background. To its right, "\$50" is written in large, white, sans-serif font. Below "ORIGINAL", the word "SALE" is written in bold, dark blue capital letters on another yellow rectangular background. To its right, "\$25" is written in large, white, sans-serif font.

Place Sale Prices Below Original Prices

Vertical numbers are easier to subtract because of the digit-by-digit comparison.

Arrange your discounts vertically to ease the subtraction (Feng, Suri, Chao, & Koc, 2017). Easy calculations enlarge the gap between numbers (Thomas & Morwitz, 2009).

Caveat: Horizontal formats work better for small discounts because they impede the calculation.

Feng, S., Suri, R., Chao, M. C. H., & Koc, U. (2017). Presenting comparative price promotions vertically or horizontally: Does it matter?. *Journal of Business Research*, 76, 209-218.

Thomas, M., & Morwitz, V. G. (2009). The ease-of-computation effect: The interplay of metacognitive experiences and naive theories in judgments of price differences. *Journal of Marketing Research*, 46(1), 81-91.





Reduce Every Digit in the Discounted Price

If your price is \$465, aim for a discounted price across every digit.

You compare numbers in a digit-by-digit manner. Therefore, reduce *every* digit in your sale price (see Korvorst & Damian, 2008).

ORIGINAL \$465

SALE \$□□□

CHOOSE FROM

1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Caveat: Perhaps keep the rightmost digit the same to ease the subtraction of the leftmost digits (see Hung et al., 2021).

Hung, H. H., Cheng, Y. H., Chuang, S. C., Yu, A. P. I., & Lin, Y. T. (2021). Consistent price endings increase consumers perceptions of cheapness. *Journal of Retailing and Consumer Services*, 61, 102590.

Korvorst, M., & Damian, M. F. (2008). The differential influence of decades and units on multidigit number comparison. *Quarterly Journal of Experimental Psychology*, 61(8), 1250- 1264.





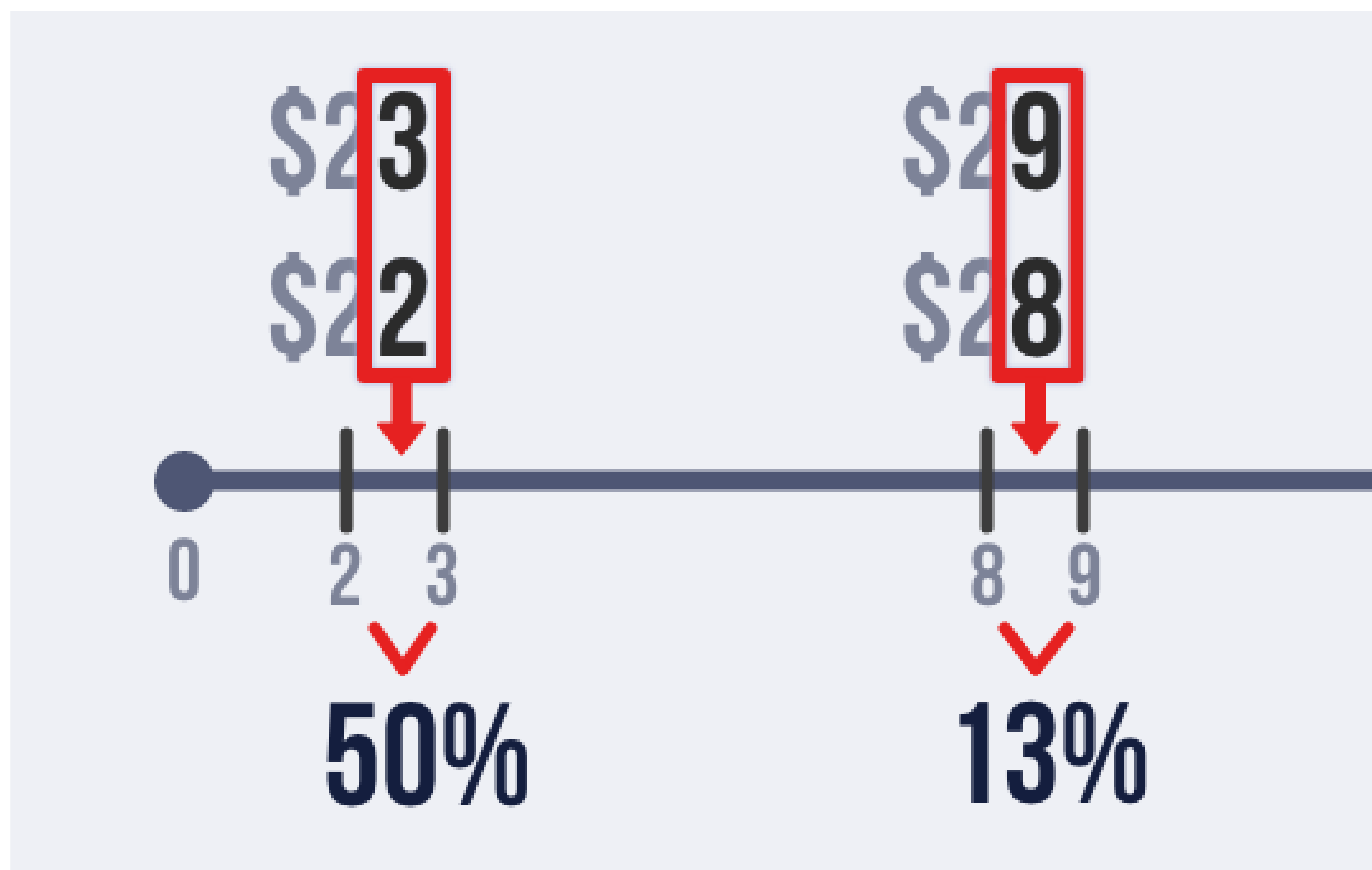
\$122

Offer Discounts With Low Right Digits

The difference between \$22 and \$23 seems more significant than \$28 and \$29

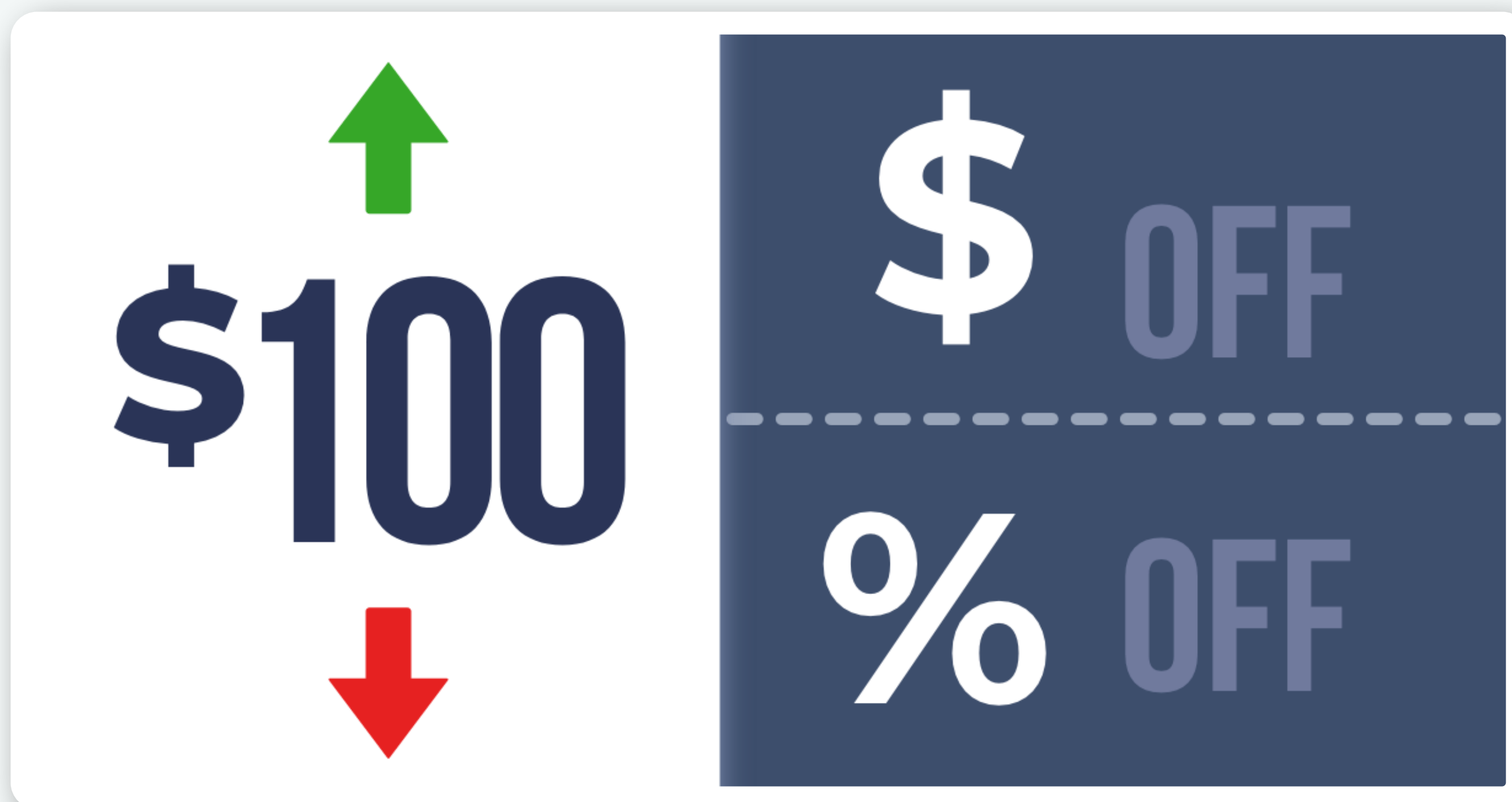
Small digits can enlarge a perceived gap:

...because 3 is 50% greater than 2, and 8 is 14% greater than 7, the absolute difference between 2 and 3 is perceived to be greater than that between 7 and 8, even though their absolute differences are identical. (Coulter & Coulter, 2007, p. 163)



Coulter, K. S., & Coulter, R. A. (2007). Distortion of price discount perceptions: The right digit effect. *Journal of Consumer Research*, 34(2), 162-173.





Give Percentage Discounts for Prices Below \$100

Below \$100? Give a percentage discount (20% off). Above \$100? Give an absolute discount (\$20 off).

Consider a \$150 blender. A 20% discount would be \$30 off. So which is better to say: 20% off or save \$30?

The answer depends on your price:

- » **Over \$100?** Give absolutes (e.g., \$30)
- » **Under \$100?** Give percentages (e.g., 20%)

In both cases, you show the higher numeral.

- » **\$50 blender:** 20% off is the same as \$10 off — yet 20 is a higher numeral than 10.
- » **\$150 blender:** The absolute discount (\$30 off) is a higher numeral (González, Esteva, Roggeveen, & Grewal, 2016).

González, E. M., Esteva, E., Roggeveen, A. L., & Grewal, D. (2016). Amount off versus percentage off—when does it matter?. *Journal of Business Research*, 69(3), 1022-1027.



A screenshot of a document with a green arrow pointing to a specific line of text. The text in the screenshot is mostly illegible but appears to be a list item. The text in the white box is "was 25% higher".

was 25% higher

Mention the Increase From the Discounted Price

"Was 25% higher" is more persuasive than
an equivalent discount of "20% off."

Most discounts emphasize a decrease: “Now 20% off.”

Researchers tested the reverse framing (“was X% higher”) in a Swedish grocery chain. Across products, they showed the original and sale price, yet they modified the framing:

- » Now 31% lower
- » Was 44% higher

Both magnitudes were equal, yet the latter framing — “Was X% higher” — increased daily unit sales because it depicted a larger numeral (Guha et al., 2018).



Guha, A., Biswas, A., Grewal, D., Verma, S., Banerjee, S., & Nordfält, J. (2018). Reframing the discount as a comparison against the sale price: does it make the discount more attractive?. *Journal of Marketing Research*, 55(3), 339-351.





Provide a Reason for the Discount

Customers should believe that your discount is temporary so that this lower price doesn't become a new permanent reference price.

Explain *why* you're offering a discount.

Otherwise, your regular price will seem more more expensive when it returns. Customers will compare your regular with the discounted price. Temporary discounts will impede this mental process.

Plus, customers are more apt to pounce on a temporary discount. Perhaps you could mention a "clearance" sale. Or you could refer to supplier price cuts:

[some stores] often convey the message that additional cost savings they are able to obtain from suppliers are being passed on to customers... presumably to minimize the negative effects of promotions (Mazumdar, Raj, & Sinha, 2005, p. 88)

Mazumdar, T., Raj, S. P., & Sinha, I. (2005). Reference price research: Review and propositions. *Journal of marketing*, 69(4), 84-102.





\$25 OFF

Offer Discounts in Round Numbers

Round numbers seem larger.

Specific prices (e.g., \$21.87) seem smaller (Thomas, Simon, & Kadiyali, 2007).

Therefore, choose round numerals for discounts to *enlarge* their perceived size.

Plus, rounded discounts are easier to calculate. And numerical differences seem larger when they are easy to calculate (Thomas & Morwitz, 2009).

Thomas, M., & Morwitz, V. G. (2009). The ease-of-computation effect: The interplay of metacognitive experiences and naive theories in judgments of price differences. *Journal of Marketing Research*, 46(1), 81-91.

Thomas, M., Simon, D. H., & Kadiyali, V. (2007). Do consumers perceive precise prices to be lower than round prices? Evidence from laboratory and market data. Johnson School at Cornell University Research Paper, (09-07).



20% OFF

...THEN AN EXTRA **10%**

Give Two Discounts in Ascending Order

Two discounts feel better than one.

Two gains are often preferred to a single lump sum (Kahneman & Tversky, 1979).

Therefore, double discounts can be helpful: Perhaps offer 10% then an extra 40%.

If possible, arrange these discounts in ascending order: 10% *then* 40%. Ascending momentum makes the total discount seem larger (Gong, Huang, & Goh, 2019).

Gong, H., Huang, J., & Goh, K. H. (2019). The illusion of double-discount: using reference points in promotion framing. *Journal of Consumer Psychology*, 29(3), 483-491.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263-292.





Offer Discounts Toward the End of the Month

By the end of the months, customers have depleted their monthly budgets. They're seeking ways to save money.

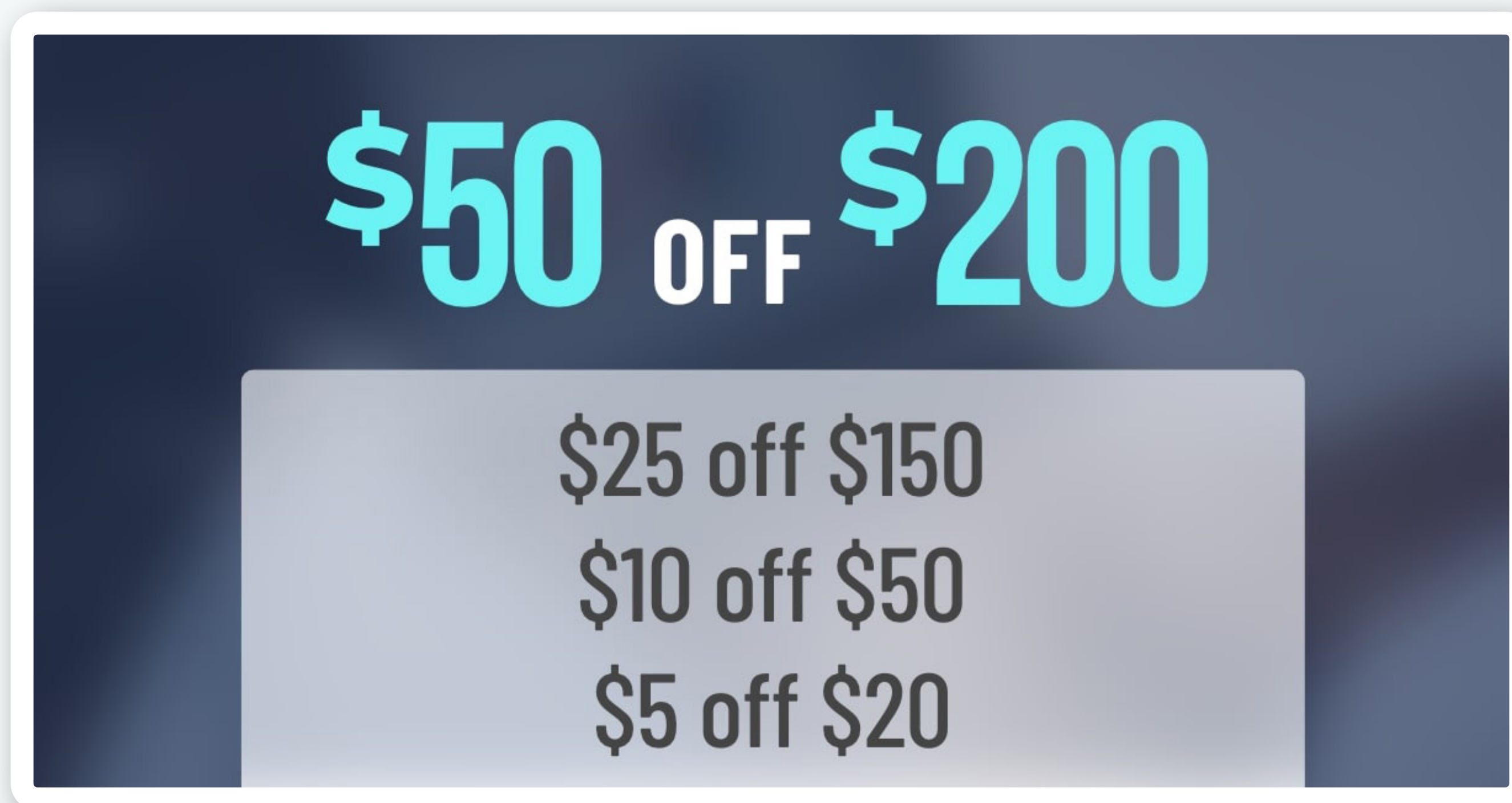
Payments are more painful with small budgets (Soster, Gershoff, & Bearden, 2014). Discounts are more appealing toward the end of the month when budgets have been depleted.

Alternatively, give free trials at the beginnings of months when budgets are higher:

[free trials] might be better timed at the beginning of the month, or immediately after consumers receive tax refunds, in order to ensure that budgets are not approaching exhaustion at the time of purchase (Soster, Gershoff, & Bearden, 2014, pp. 672-673).

Soster, R. L., Gershoff, A. D., & Bearden, W. O. (2014). The bottom dollar effect: the influence of spending to zero on pain of payment and satisfaction. *Journal of Consumer Research*, 41(3), 656-677.





Arrange Discounts in Tiered Amounts

Reaching one threshold makes it easier to enter another threshold.

Suppose that customers get \$50 off when they spend \$200.

In this scenario, customers need to spend \$200 – which might be tough to imagine. In order to make this discount more realistic (and thus enticing), businesses need to strengthen the mental imagery of spending \$200.

How? They can offer tiered discounts.

- » \$50 off \$200
- » \$25 off \$150
- » \$10 off \$50
- » \$5 off \$20

Customers might struggle to imagine the \$200 threshold, but the lowest tier – \$20 – is easy to imagine.

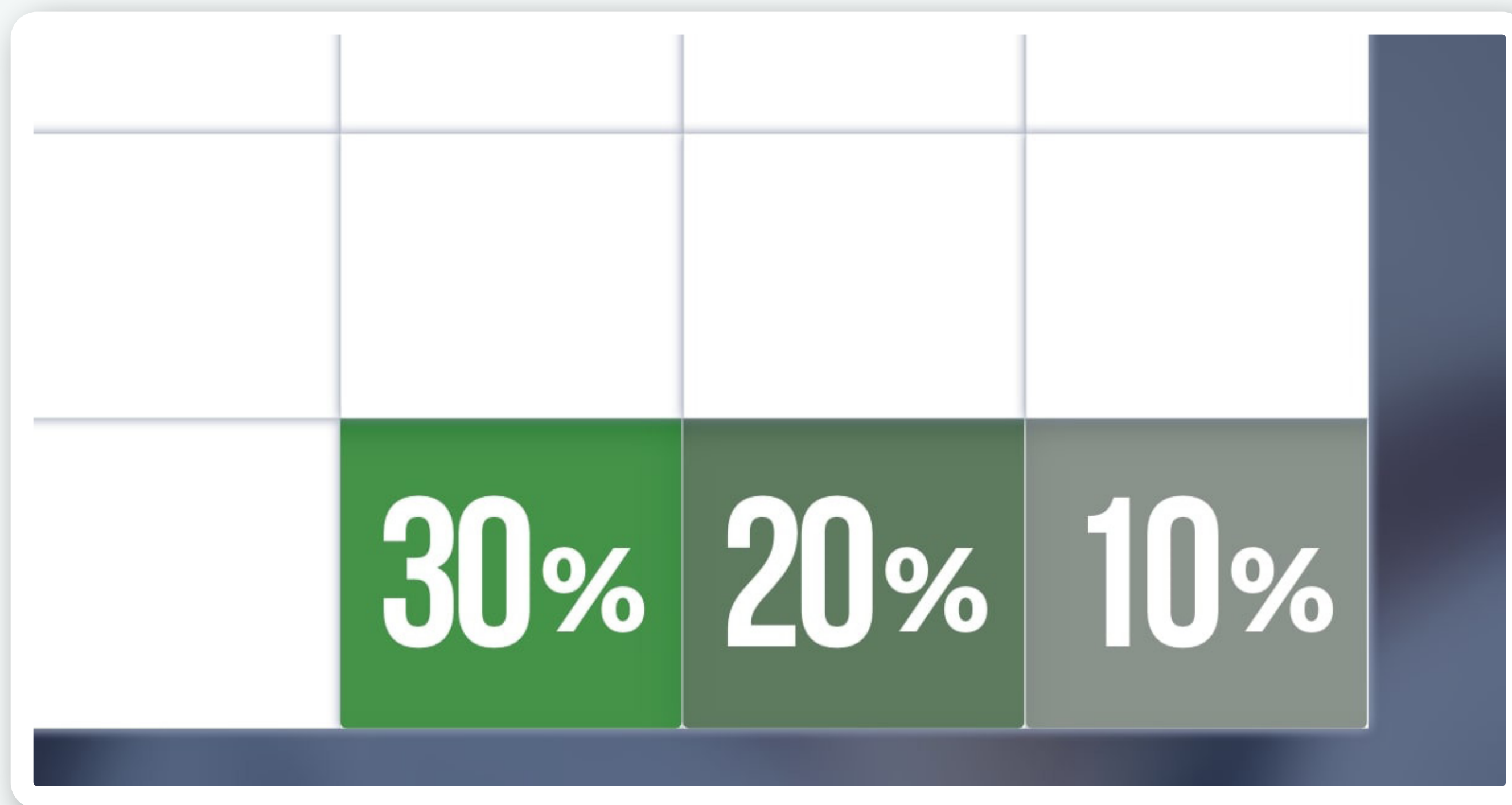
And now it gets sneaky: Once they imagine spending \$20, it becomes easier to imagine the next threshold of \$50.

Then it becomes easy to imagine \$150. Then \$200.

Lower tiers provide a sequence of images that transform a high threshold into a feasible reality.

Deep Dive: Pick up my book [Imagine Reading This Book](#) to learn the detailed mechanism behind this “simulation fluency.”





End Discounts Gradually

Gradually retracting a discount boosts sales.

Consider the price of a television. Most businesses choose one of two pricing strategies:

- » **Hi-Lo Pricing.** \$999...then \$799...then \$999.
- » **Everyday Low Pricing.** \$919 every week.

But recently, there's a new strategy called *steadily decreasing discounts*. You gradually retract a discount:

\$999...then \$799...then \$899...then \$999

Over a 30-week span, researchers tested all three pricing strategies for a \$24.95 wine bottle stopper. Revenue was highest with the gradual retraction (Tsiros & Hardesty, 2010).

Tsiros, M., & Hardesty, D. M. (2010). Ending a price promotion: retracting it in one step or phasing it out gradually. *Journal of marketing*, 74(1), 49-64.





Don't Discount Premium Products

Emphasize the the quality of your product instead.

Luxury discounts are usually harmful:

- » **Weaker Brand.** Customers buy luxury brands to boost status. Discounts tarnish this status because the brand is more accessible to a wider audience.
- » **Price Sensitivity.** Customers focus on price, rather than quality. And luxury products don't win on price.
- » **More Likely to Wait.** Customers are more likely to wait for the next discount, especially for premium products (Wathieu, Muthukrishnan, & Bronnenberg, 2004).

Wathieu, L., Muthukrishnan, A. V., & Bronnenberg, B. J. (2004). The asymmetric effect of discount retraction on subsequent choice. *Journal of Consumer Research*, 31(3), 652-657.



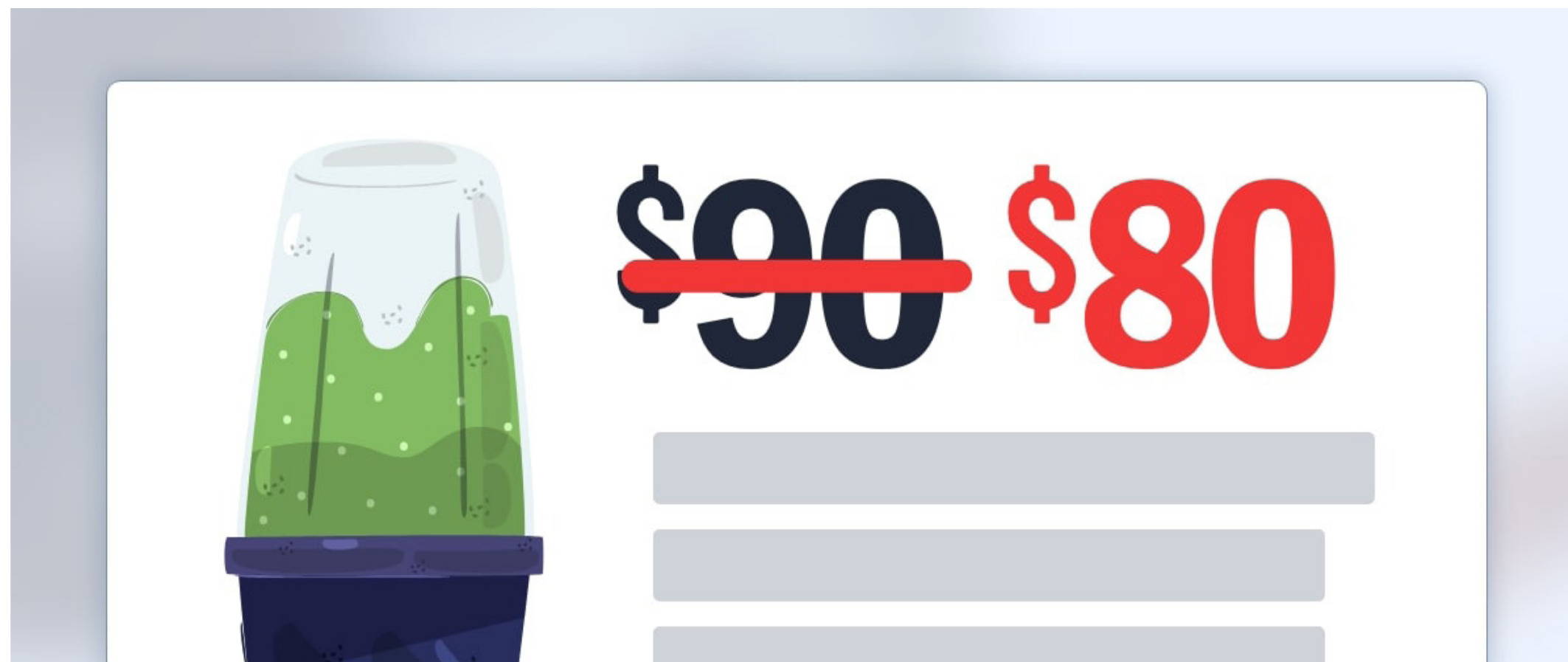


Separate Your Discounts When Possible

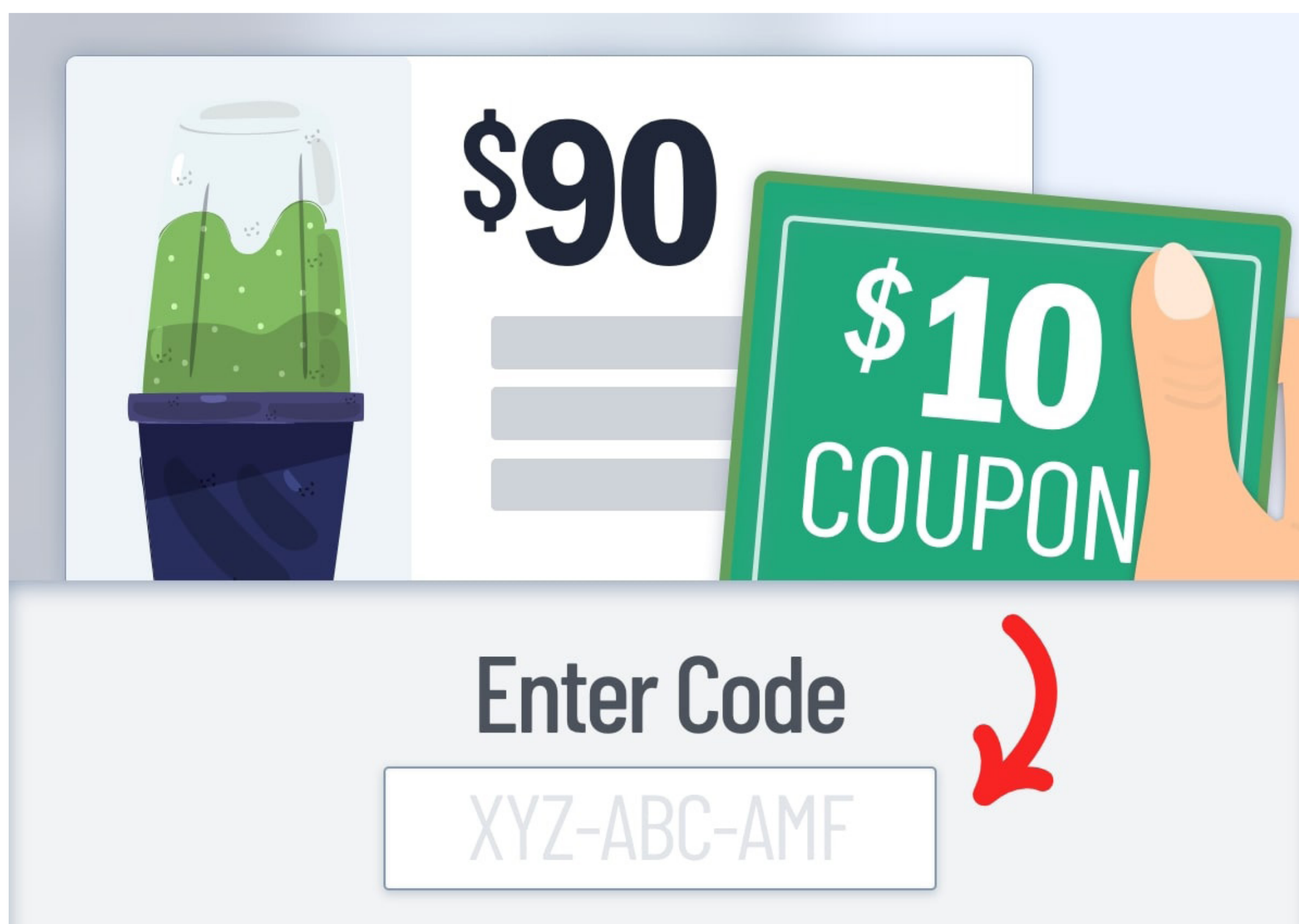
All else equal, coupons are more effective than visibly reduced prices.

Consider a \$10 discount.

Marketers could show a discounted price:



Or they could supply coupons. In this case, customers would see current prices until they apply this discount in the checkout:



Would it matter? It's still a \$10 discount either way.



Turns out, yes – it matters.

In a new study, customers preferred larger purchases when they received a separate discount (e.g., coupon code; [Jia, Huang, Zhang, Shi, & Zhang, 2023](#)).

Why? Because they felt satisfaction imagining the price reduction.

For discounts that were visibly shown, prices were already reduced. Customers had no wiggle room in price, so they preferred cheaper options.

It's called *final price neglect*. When customers possess their own discount, they browse products by fixating on the price reduction (rather than the final price). It feels good. And this numbs the pain of larger purchases.



Takeaways:

- » **Give Tangible Discounts.** All else equal, coupons might be more effective than visibly reduced prices for the same amount.
- » **Delay Showing Discounted Prices.** Usually marketers want to show the lowest price possible. But stay patient. Even if you can activate a 15% discount before the purchase, you should wait until the checkout if customers are aware of the discount. Let them envision this price flexibility while browsing. It cushions their pain.
- » **Be Cognizant.** Next time you possess a coupon, notice your emotions while envisioning these reductions. Don't let these emotions distract you from the final price.

Jia, H., Huang, Y., Zhang, Q., Shi, Z., & Zhang, K. (2023). Final Price Neglect in Multi-Product Promotions: How Non-Integrated Price Reductions Promote Higher-Priced Products. *Journal of Consumer Research*, ucad045.





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