The hidden mind:

How behavioural science can unlock additional pricing power

In partnership with behavioural scientist, Richard Shotton, we've shortlisted 10 behavioural insights to *power your pricing*. By the end of the paper, you'll understand how the quirks of human decision-making can be powerful tools for smarter pricing, and greater persuasion.

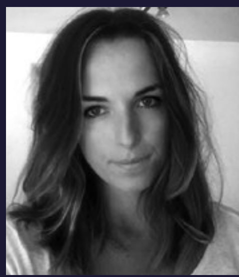
acuitypricing

Contents

Introduction

Today, pricing success comes from being informed and intentional; using data not just to keep up with the market, but to lead it. There's also hidden pricing power in insights that come in unexpected forms...

In this paper, we look into the hidden mind behind pricing - the psychology of pricing - with behavioural scientist, Richard Shotton. Richard is the author of two best-selling books, and is an associate of numerous institutions including Cambridge University, and an honorary fellow of the Institute of Practitioners in Advertising (IPA).



Managing Director, Acuity Pricing, Sophie Bailey

It's tempting to base pricing on the assumption that we, people, are rational calculators who calmly weigh cost and value. But the reality is, humans don't shop with spreadsheets - we shop with shortcuts and subconscious biases.

We've shortlisted 10 behavioural science insights to power your pricing, and ultimately, your bottom line. This paper explores how the quirks of human decision-making can be powerful tools for smarter pricing, and greater persuasion.

Behavioural scientist and author, Richard Shotton

Sophie Bailey, Managing Director, Acuity Pricing

"

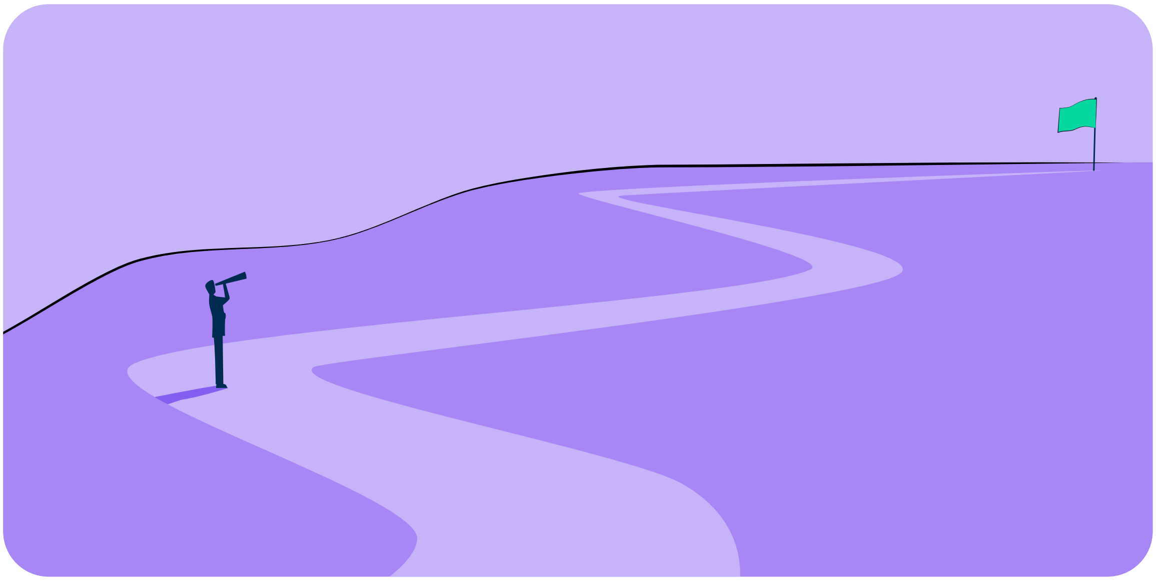
Behavioural science reveals why perceived value often outweighs actual cost, and how context, framing, and expectation shape what people are willing to pay. A 99p price isn't just convention; it's a psychological trigger. Higher prices don't always deter - sometimes they do the opposite.

Richard Shotton

How to set prices

1 Present bias: Now is the most important

The present bias means that what happens in the present matters much more to people than what happens in the future. You can use this to help shape your pricing and promotion mechanics.



Clear evidence for the present bias comes from a 2006 study by Anna Breman, Economist at the Stockholm School of Economics. Working with a Swedish charity called Diakonia, she conducted a large-scale test applying present bias:

The experiment involved 1,134 regular monthly donors. Half of the supporters were asked to increase their regular donations, starting immediately. The other half were asked if they would agree to larger donations, but these higher payments would start in two months.

On average, **the donations in the delayed group increased by 32%,** a significant difference. Breman also found that the results hold in the long run. After 12 months, cancellation rates were nearly identical in the two groups. The increase in contributions more than made up for the two-month delay.

What this means for you

Shoppers are **less price sensitive** if you push payments into the future.

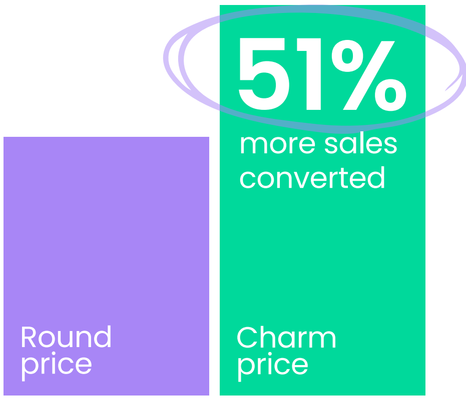
There are a couple of ways you can do this:

- Allow customers to pay only a portion of the full amount upfront and the rest in instalments (e.g. via Klarna, PayPal Pay in 3 etc)
- Offer a lower initial payment, with higher amounts later to balance this out (e.g. £5 a month for the first 3 months and then £11.67 for the next 9, instead of £10 a month for 12 months)

2 Charm pricing: 99p prices work

It's nothing new - 0.99 prices have been around since the dawn of selling. And there's now a large body of evidence to show how well these charm prices work.

In 2013 Gumroad, a US platform that lets creators sell content directly to the public, analysed all the items on the site under $6. They split sales data according to whether the price ended in 99c or a round dollar figure. Results showed that the conversion rate for items with a charm price was 3.5%, compared to 2.3% for those that cost one cent more - that's **a difference of 51%.**



So why doesn't everyone do it? While charm pricing boosts sales, **some sellers worry that this might come at the expense of quality perceptions.** However, evidence suggests it does not...

A 2023 review by Eve Sarah Troll, a Research Associate from Leuphana University of Lüneburg in Germany, and colleagues, analysed the results of 69 studies on charm pricing, including 40,541 participants. They found that charm pricing was a robust phenomenon - prices ending in nine were perceived as significantly better value, led to higher purchase intentions and, importantly, had no effect on perceived product quality.

What this means for you

Prices **ending in nine** boost sales.

It's likely due to the "left-digit effect" - we read from left to right and naturally focus on the first digit we see. Also, people generally don't recall exact prices - we remember a price like £2.99 as £2-something.

You can leverage the principle in two ways:

- Boost sales at a minimal loss of margin per customer (e.g. £17.99 instead of £18.00)
- Increase prices without damaging volume (e.g. by increasing prices from £10.75 to £10.99)

Applications in practice:

Adfree Cities

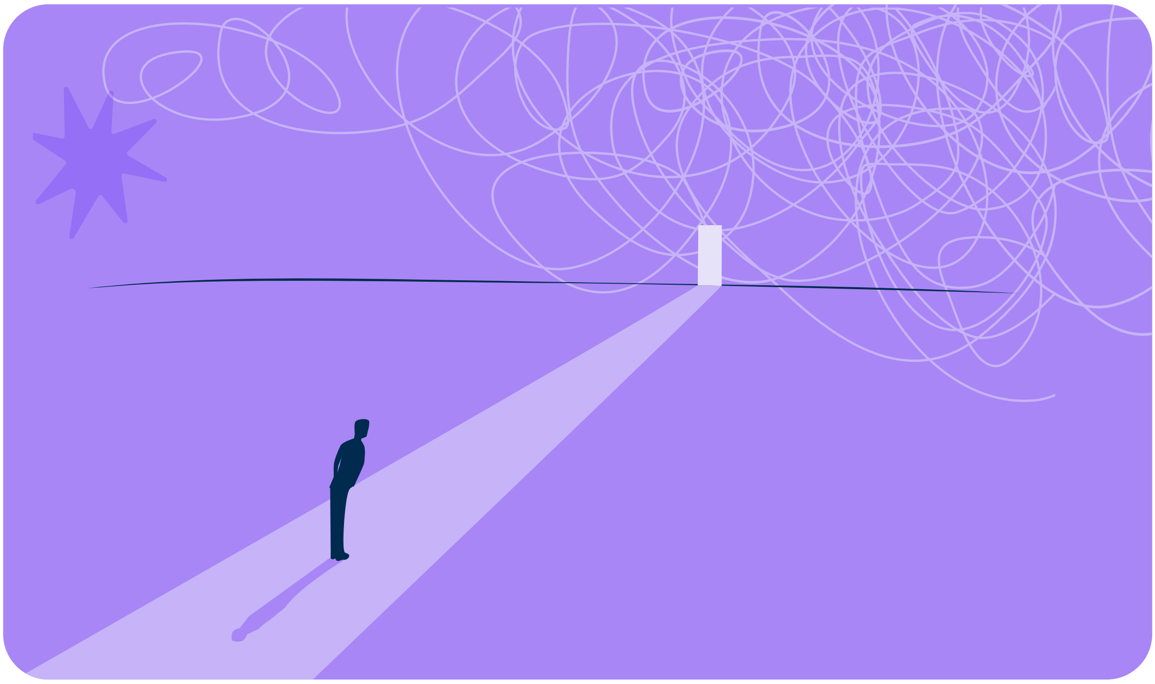
McDonald's utilises charm pricing across its Saver Menu to enhance the deal's value

Mother London

Gousto utilises charm pricing to focus attention on the cost per meal, rather than the overall monthly cost

Campaign

Aldi harnesses charm pricing for certain products



3 Precise pricing: Zoom in on a specific price

Related to charm pricing, there's evidence that people are generally sceptical about whole number prices - we assume a price has been rounded up.

In 2008, a study by two University of Florida psychologists, Chris Janiszewski and Dan Uy, demonstrated this. Participants saw the asking price for a series of goods, some with a round price, others with a precise one. **Participants invariably thought that rounded prices were marked up to a higher degree.**

The researchers tested the findings in the real world too - they analysed 25,564 house sales from Alachua County, Florida. The data showed that sellers who set a precise asking price - e.g. $800,475 rather than $800,000 - sold their home for closer to the asking price than those who opted for a rounded figure.

A real-world example: Keith Chen, previously head of economic research at Uber, observed that when surge pricing was shown, people who saw a rounded price (e.g. 2.0x higher) were less likely to accept the trip than when the surge price was precise (e.g. 2.1x higher). Even though it was more expensive, the precise price was more acceptable.

What this means for you

People assume a rounded price has been inflated to reach a whole number, we have a tendency **to trust precise prices more.**

You can use a precise price to charge more without dampening demand (e.g. £20.12 rather than £20).

It's an alternative approach if you prefer not to use charm pricing, perhaps because you want to increase a little, but not as far as a .99 value.

Application in practice:

Asda applies precision with prices such as £1.48 and £6.17

"

Acuity Pricing are the safest pair of hands on the market.

- Top 5 grocery retailer in the UK, 2024

How to reduce price sensitivity

4 Price relativity: Judgements are all relative

People find it near-impossible to judge value in absolute terms. Instead, we judge prices relative to those of similar products. This presents an opportunity to shape the context in which prices are viewed.

In a 2014 study by Richard Shotton, customers were told that a 250g box of PG Tips tea bags cost £2.29, while the same weight of Tesco's own-label teabags cost £1. In this scenario, 31% of the audience thought the PG Tips were good value.

Another group were asked the same question, with one tweak. Rather than compare PG Tips to own-label tea, it was contrasted with Twinings, priced at £3.49. In this scenario, the number who thought PG Tips represented good value more than doubled to 65%.

Even though the price and quality of the PG Tips teabags didn't change between the settings, perception of their value did. Many other studies have shown similar results.

PG Tips price	Comparison price	Proportion thinking PG Tips was good value
£2.29	£1 (Tesco own label)	31%
£2.29	£3.49 (Twinings)	65%

What this means for you

When it comes to calculating what an item is worth, working out its 'genuine' value is complex. Instead, people **think about similar products and compare.**

Control the comparison set, and you can change willingness to pay:

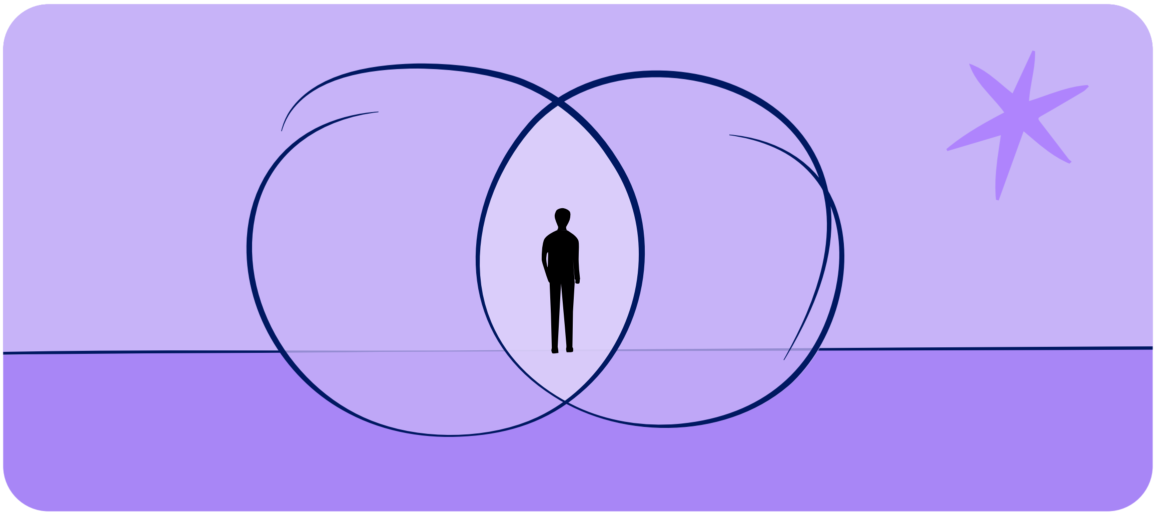
- Show people a higher-priced comparison e.g. highlight your pre-discount price, or frame next to a more higher-priced competitor
- Contrast to a higher-priced alternative from a different but related category. This could be an idea applied across multiple disciplines. For example:
  - A beer brand could sell pint-sized cans, rather than 330ml bottles, prompting people to make a comparison with what they'd pay in a pub
  - A premium chocolate brand could locate a stand next to the champagnes in-store rather than the usual category aisle, where it appears expensive

Applications in practice:

Lidl harnesses price relativity by displaying the old price above the new one. Emphasising being only £2.39 isn't motivating enough for customers alone - brands also need to emphasise previous prices were

The Times

Seedlip is marketed as a distilled non-alcoholic spirit, is sold in the spirit aisle, and has packaging reminiscent of craft gins. This means their comparison set is craft gin, therefore its £25 price point appears reasonable. In comparison, if the product's positioning and packaging had looked like a cordial (what it arguably is) and was sold next to the Ribena, its cost would be capped at closer to £5 or £6



5 Extremeness aversion: The middle ground feels safest

When presented with three differently priced options, we gravitate towards the middle one, as demonstrated by a classic study from 1992, by psychologist, Amos Tversky, and professor of marketing, Itamar Simonson, at Stanford University.

They asked 221 participants which camera they would prefer to buy. One group was offered the choice of two camera models: Model 1 priced at $170 or higher-spec Model 2 at $240. Roughly 50% chose each option.

The second group were shown three cameras: the original two plus a top-end Model 3, retailing at $470. The introduction of a top-end option led to Model 2 - the middle option - becoming much more popular. This time, 57% chose it. Just 22% went for the cheapest model, and 21% for the high-spec one.

		Proportion choosing each model
Group One	Model 1 ($170)	50%
	Model 2 ($240)	50%
Group Two	Model 1 ($170)	22%
	Model 2 ($240)	57%
	Model 3 ($470)	21%

What this means for you

With three options available, people assume the cheapest will be poor quality and the costliest is overpriced - **the middle-priced option feels most comfortable.**

So, if you offer two tiers - standard and premium - add a third, super-premium. You'll drive more people to consider the premium, and this should be where you put your best profit margin.

Applications in practice:

Joe Howard Photography

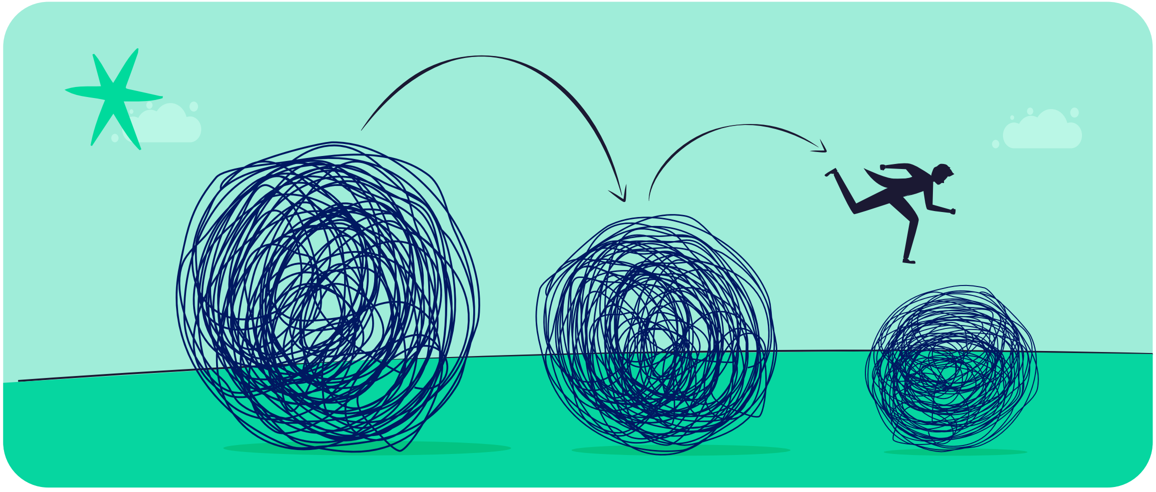
Istockphoto.com

Marmite released a premium, truffle version, which made its regular product appear better value

90% of clients agree or strongly agree that **Acuity Pricing supports their overall business strategy**

84% of clients agree or strongly agree that **Acuity Pricing delivers incremental business value**

Source: Acuity Pricing NPS 2025



6 The Order Effect: Anchor high

An initial number - even an irrelevant one - acts as a comparison for numbers that follow. This can be easily used when deciding how to order items in a display, website or menu.

A study showing how impactful this effect can be was conducted by marketing professor, Kwanho Suk, and colleagues from Korea University.

Over eight weeks, the researchers changed the listing order of 13 imported and domestic beers on the menus of a small pub in the USA. Sometimes the beers were presented in increasing price order. Other times, the beers were listed in descending price order.

The psychologists found that when prices were listed from low to high, the average spend on a beer was $5.78. But when prices were listed with the highest first, the average price paid was $6.02 - an increase of 4% ($0.24). A simple tweak in return for what would be a significant business uplift.

It happens because of the anchor effect - the first price we see is disproportionately influential.

Low to High		High to Low	
Beer 1	$4	Beer 1	$10
Beer 2	$4	Beer 2	$9
Beer 3	$4	Beer 3	$8
Beer 4	$5	Beer 4	$8
Beer 5	$6	Beer 5	$7
Beer 6	$7	Beer 6	$7
Beer 7	$7	Beer 7	$7
Beer 8	$7	Beer 8	$7
Beer 9	$7	Beer 9	$6
Beer 10	$8	Beer 10	$5
Beer 11	$8	Beer 11	$4
Beer 12	$9	Beer 12	$4
Beer 13	$10	Beer 13	$4
Average Sale $5.78		**Average Sale $6.02**	

What this means for you

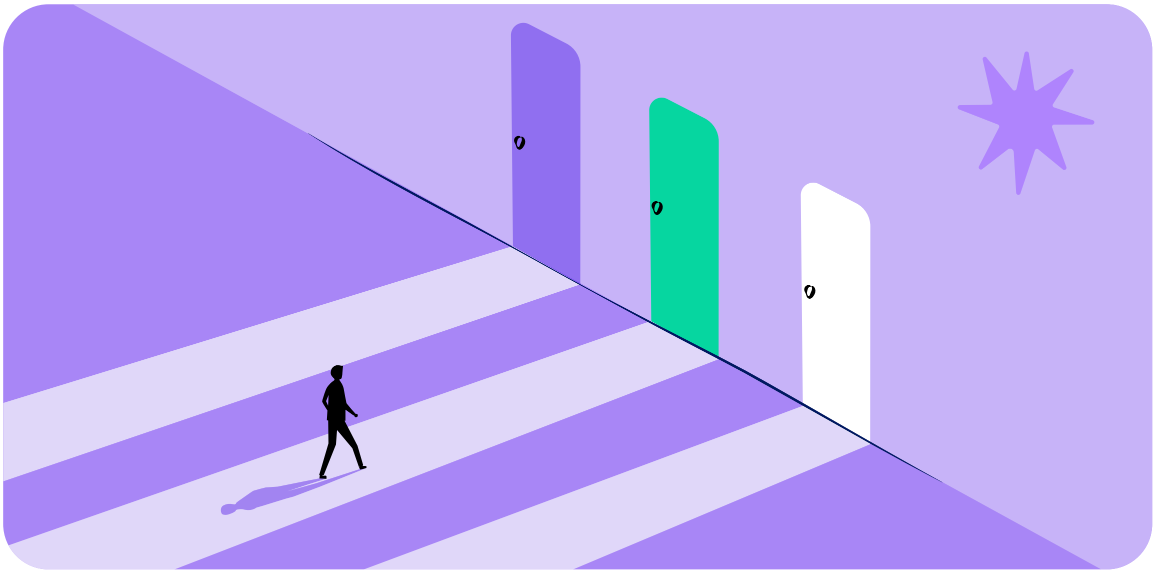
When listing prices, **place high numbers first.** The ones that follow will feel more **reasonable** in comparison.

If you're listing prices online ensure you show sums from highest to lowest, left to right. And if you're selling items on a shop floor, place some high-ticket items prominently, near the door for example, to make other items seem cheaper.

"

Comprehensive, accurate pricing data that's delivered exactly when we need it. Brilliant client service too. A partnership that is crucial to our business.

Matt Apps, Marketing Manager, Pricing & Promotions, Superdrug



7 The Decoy Effect: Distract with a poor value option

Showing a third, less appealing option, can help to sell your target offering — it's called the decoy effect.

A 2014 study by professor of marketing, Ricardo Sellers-Rubio, and professor of (revenue) management, Juan-Luis Nicolau-Gonzalbez, from the University of Alicante in Spain explores this.

Participants were split into two groups. The first group was shown two choices of chicken broth:

- Gallina Blanca broth – €1.55
- Knorr broth – €1.65 with 10% extra free (the target)

In this scenario, the decision isn't straightforward: Gallina Blanca is cheaper, but Knorr offers more soup. Neither is clearly better, and as you might expect, the result was an even split: 51% of participants chose the Knorr broth.

But for a second group, people saw three different options — the original two, plus a decoy:

- Broth from Gallina Blanca - €1.55
- Broth from Knorr - €1.65 (the decoy)
- Broth from Knorr - €1.65 + 10% extra free (the target)

In this set-up, 58% went for the Knorr with the promotion, the target. That's because it provided simplicity and an objectively better deal than one of the other options.

People prefer quick and easy decisions. They can easily compare the two £1.65 offerings, rather than the more complex calculation between the £1.65 and £1.55 options.

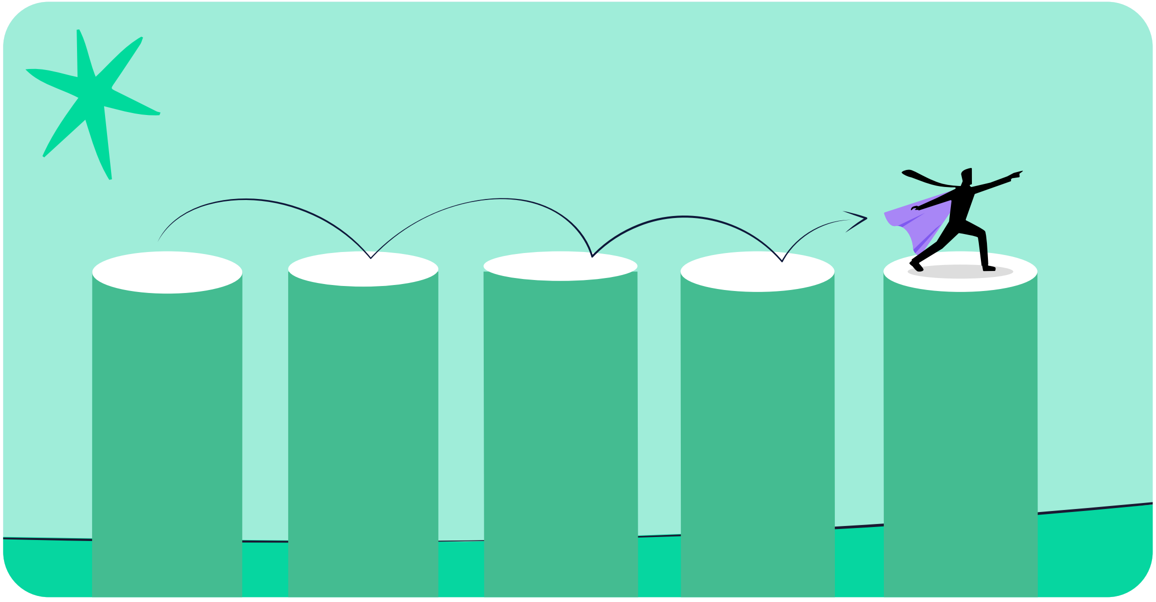
		Proportion choosing each broth
Group One	Gallina Blanca (€1.55)	49%
	Knorr with 10% extra (€1.65)	51%
Group Two	Gallina Blanca (€1.55)	42%
	Knorr (€1.65)	0%
	Knorr with 10% extra (€1.65)	58%

What this means for you

Choosing between two products can be tricky if the options vary on more than one attribute e.g. price and size.

You can avoid this issue **by adding a third - decoy - option,** costing the same as the most expensive one, but with fewer features.

For example, a company might offer three coffee machine models: essential (£40), advanced (£80) and pro (£80). Here, the advanced option is the decoy - it's the same price as the pro, but with fewer features. The pro becomes an easier choice.



8 Unit reframing: Break prices down

We focus on the number we're presented with, so make it as small as you can by reframing prices as cost per unit. People generally dislike doing any kind of mental mathematics - so, do it for them.

Support for this pricing approach comes from a study in 2022 by Richard Shotton and Michael Aaron Flicker. They asked 282 consumers to imagine they saw a beer brand for sale in a supermarket. Half the participants were told the ale cost $18.99 for twelve bottles. The other half were told that the price was '$18.99 - that's the same as $1.58 a bottle'.

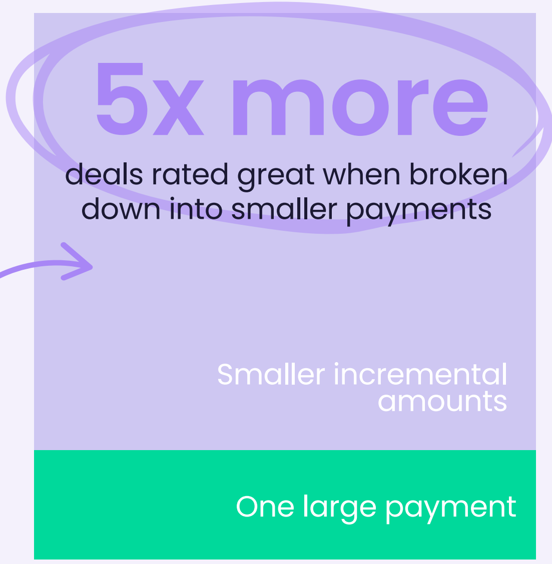
Participants were then asked how good value they thought the beer was.

Those who saw the per-unit equivalent were more than twice as likely to think the ale was quite good or very good value.

Group	Proportion saying good or very good value
No unit reframing ($18.99)	13.7%
Unit reframing ($1.58 per bottle)	28.6%

Similar results were seen in a study by Richard Shotton looking at temporal reframing. 500 participants saw a car finance deal with the price given as either daily, weekly, monthly or annual. Afterwards, participants were questioned on how good-value they thought the offer was.

The results were clear: **the longer the time frame, the less appealing the deal.** When prices were shown as smaller daily amounts, they were almost **5x more** likely to be rated as a great deal than when they were shown as a large annual sum.

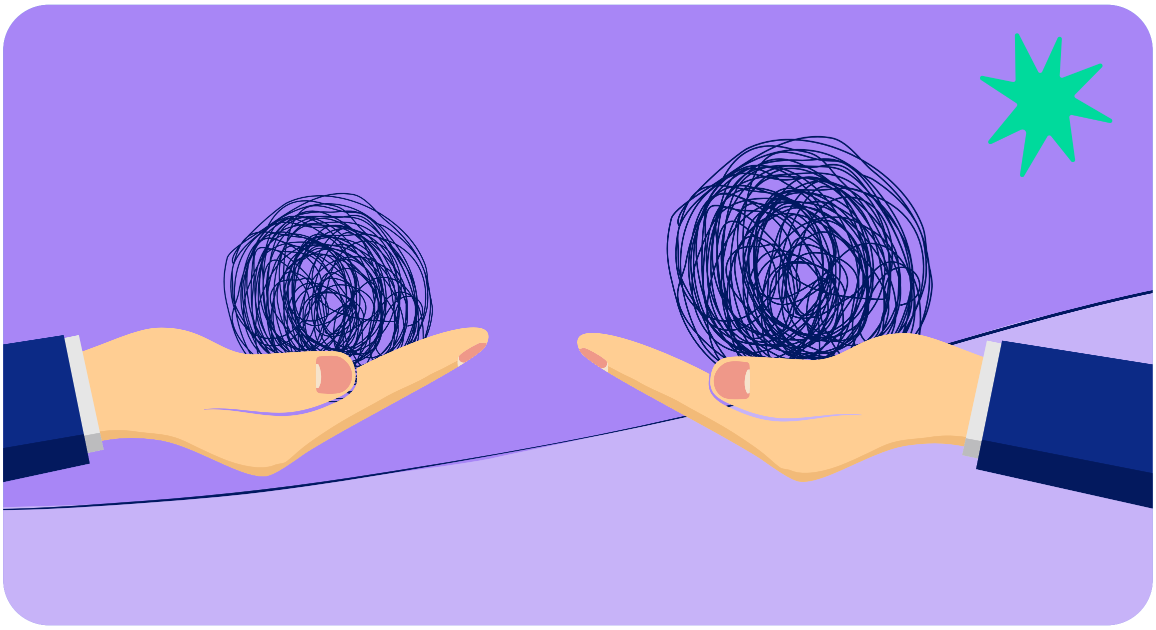


What this means for you

People focus on the size of the number - so **express price in the smallest chunk** you can.

There are two simple ways you can do this:

- **Unit framing:** Break down by serving e.g. 84p per serve, 56p per can
- **Temporal framing:** Break down monthly or weekly fees into a daily costs e.g. £25 per month - that's around 82p a day



9 Differential price framing: Show additional costs

Differential price framing is another way to ensure the number you show is the smallest possible. If you want to offer an upgrade to a higher priced item or service, it's best to supply the additional cost rather than the total.

This has been demonstrated in a 2019 study by associate professor in marketing and behavioural science, David Hardisty, from the University of British Columbia and colleagues. They showed 253 participants two subscriptions - standard and premium - for The New York Times.

These were presented in one of two ways.

Group One	1. $9.99/month for web and app
	2. $16.99/ month for web, app, print, podcast, and crossword
Group Two	1. $9.99/month for web and app
	2. +$7.00/ month for web, app, print, podcast, and crossword

Participants then indicated which option they would choose and how expensive they perceived each subscription to be.

In Group 1, 23% picked the premium option. In Group 2, this increased to 47%. In other words, **showing the differential rather than the total price more than doubled the number opting for the premium package.**

What's more, showing the differential price decreased the perceived expense of the premium option.

The authors explain that this is because the differential price difference (+$7.00) is always numerically smaller than the displayed total price (i.e. $16.99). And when evaluating prices, people tend to focus on the number instead of calculating what it represents.

What this means for you

You can leverage this insight by presenting higher prices or upgrades as the **cost difference against a cheaper offering.**

For instance, suppose a cookware brand sells a 28-inch frying pan (£15) and a 32-inch frying pan (£22). Rather than displaying the total price for the latter, it should present it as +£7 on top of the smaller pan.

Application in practice:

Mooboo.co

Mooboo Bubble Tea shows the small differential price to upgrade to a larger drink (i.e. +50p)

Caffè Nero shows the differential price for their premium Brazilian beans (i.e. +30p)

10 Price as a badge for quality: Discounting can damage perception

We tend to experience what we expect to experience. One factor that informs our expectations of quality is price. In turn, price can influence the actual experience of a product.

This was shown in a 2008 study by marketing professor, Hilke Plassmann, at the California Institute of Technology and Stanford marketing professor Baba Shiv.

They asked participants to sample several wines and rate the likeability from 1 (not at all) to 6 (very much). Unbeknown to participants, two of the wines were the same, but were labelled at different prices: $45 and $5.

Even though they were the same, drinkers rated the supposedly expensive wine 70% higher than the "cheaper" one.

The finding is consistent in other areas: Baba Shiv looked at energy drinks too, economist David Just has looked at pizza, and Richard Shotton has run tests with perfume.

Time and again, people enjoy the apparently expensive version more, **even if the cheaper one is exactly the same.**

What this means for you

Low price **reduces customers' experience** - a kind of self-fulfilling prophecy.

This finding is particularly relevant to discounting, so be cautious about frequent or steep price reductions. While these may be a tempting way to boost sales in the short run, they risk damaging quality perceptions over time.

If you steeply discount your products, people may assume they are lower quality - but worse still, if customers try your products, those expectations may impact their actual experience.

Final thoughts

There are hundreds of behavioural biases - we've listed 10 easy-to-apply approaches here that are perfect for pricing.

The beauty of behavioural science is that it's backed by solid evidence, so you can be confident that these tactics work. Better still, they don't need you to make any radical changes, and are generally low-cost or cost-free.

The next page includes a good take-out summary for easy reference.

At a glance

Bias	Description & Evidence	Implication
How to set prices		
Present bias	What happens in the present matters much more to us than what happens in the future (Breman, 2006)	**People are less price sensitive if you push payments into the future:** • Offer split payment services • Offer stepped pricing
Charm pricing	Prices that end in nine appear to be better value than round prices. Crucially, this benefit comes without damaging perceptions of quality (Gumroad, 2013; Troll et al., 2023)	**Use prices that end in nine by:** • Boosting sales at a minimal loss of margin per customer (e.g. £17.99 instead of £18.00) • Increase prices without damaging volume (e.g. by raising prices from £10.75 to £10.99)
Precise pricing	Precise prices boost willingness to pay (Janiszewski & Uy, 2008; Uber, n.d.)	**Use precise prices to charge more without dampening demand (e.g. £20.12 rather than £20)**
How to reduce price sensitivity		
Price relativity	We view prices in relative, not absolute terms (Shotton, 2014)	**Change comparison sets, for example:** • Show people a higher-priced comparison • Contrast your product to a higher-cost alternative from a different, but related category
Extremeness aversion	When presented with three differently priced options, we gravitate towards the middle one (Tversky & Simonson, 1992)	**If you offer two tiers - standard and premium - add a third, super-premium option**
The "order effect"	The first number we see, even if it's irrelevant, serves as a reference point for future decisions (Suk et al., 2012)	**Order prices from high to low**
Decoy effect	Showing a third, less appealing option can help to sell your target offering (Sellers-Rubio & Nicolau-Gonzalbez, 2014).	**Choosing between two products can be tricky if the options vary on more than one attribute (e.g. price and size). Avoid this issue by adding a third option - a decoy - costing the same as the most expensive one, but with fewer features**
Unit reframing	We focus too much on the headline number and too little on what it represents (Shotton & Flicker, 2022)	**Express price in the smallest chunk, for example:** • Unit framing (e.g. "84p per serve") • Temporal framing (e.g. "that's around 82p a day")
Differential price framing	Higher-priced offerings are more appealing when the differential price is shown, versus their total cost (Hardisty et al., 2019)	**Present higher prices or upgrades as the cost difference against a cheaper offering (e.g. "+£7")**
Price as a badge for quality	One factor that informs our expectations of quality is price. In turn, price can influence the actual experience of a product (Plassmann & Shiv, 2008)	**A low price reduces customers' experience of a product. Be cautious about frequent or steep price reductions**

acuitypricing

Since 2008, Acuity Pricing has been providing business-critical market and competitor pricing, promotions and proposition data to 7/10 of the UK's largest retailers, and over 60 global brands.

Whilst working with us, you can access pricing, promotion and proposition data that gives you the edge. Helping you to act with speed, scale and confidence in delivering profit impact and growth for your business, whilst building brand love and loyalty.

Pricing data, that powers profit.