

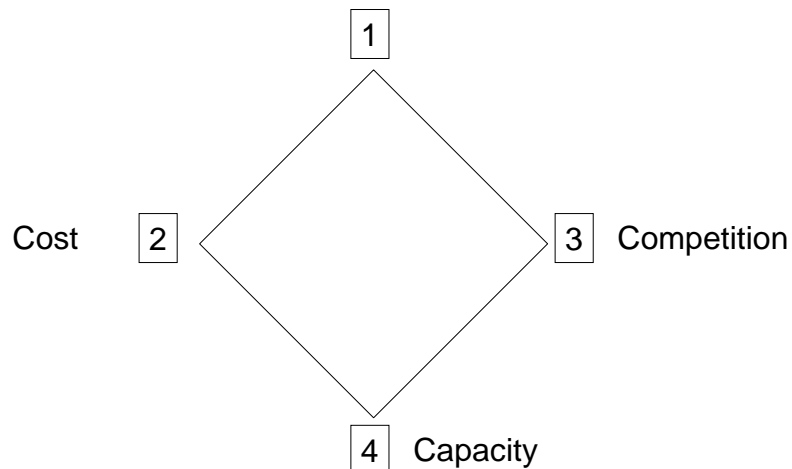
Pricing Psychology

19.5.2009, Dr. Stefan Michel
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² 4 C's of Pricing

Customers' Willingness-to-pay (WTP)




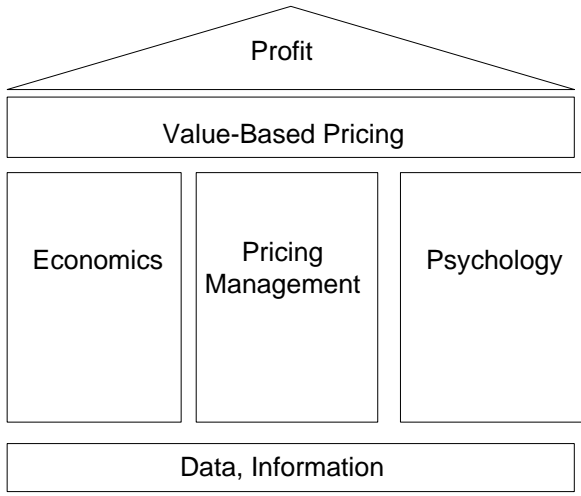
³ Value based pricing



	Cost based	Competition	Value based
Base	Company costs plus margin	Competitors' price	Customers' WTP
Example	Retail: COGS+100%	Real estate: Comps*square meter	Airline: Yield Management
Advantage	Often easy, perceived as fair	Easy, few customer complaints	Highest profit potential
Disadvantage	No market focus, leaves money on the table	Reactive, misses opportunities	Difficult, resource-intensive, maybe unfair

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⁴ The House of Pricing

Profit

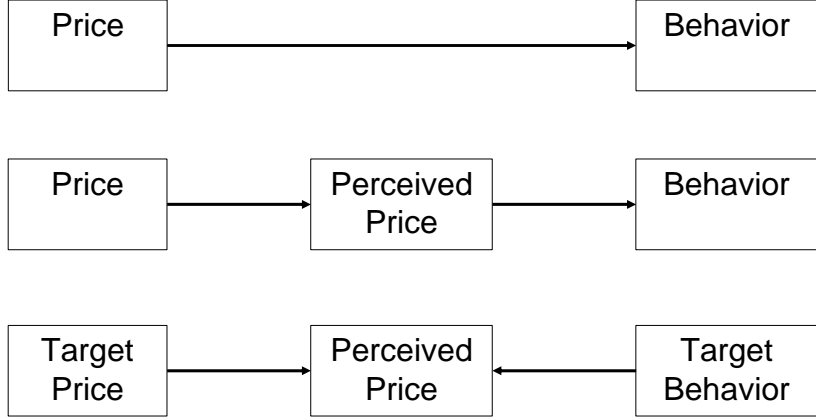
Value-Based Pricing

Economics Pricing Management Psychology

Data, Information

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5 | Why is pricing psychology important?



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graph LR; P1[Price] --> B1[Behavior]; P2[Price] --> PP2[Perceived Price]; PP2 --> B2[Behavior]; TP3[Target Price] --> PP3[Perceived Price]; TB3[Target Behavior] --> PP3;
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6 | Experiment

- The following slides show the results of an online survey I ran in May 2009 with a sample of 124 respondents (n=61 in the treatment group, n=63 in the control group).
- Each question describes two scenarios which are economically equivalent, but psychologically different.
- Significance test statistics are shown at the bottom of the page (n.s.= not significant).

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 **Tennis elbow**

This experiment did not work out. It seems that the health issue is much stronger than the sunk costs consideration.

<ul style="list-style-type: none"> • 3. A friend of yours has just renewed his yearly membership at his tennis club for CHF 1500 (€ 1000). Yesterday, he felt a pain and went to the doctor, who diagnosed a tennis elbow. How likely is your friend going to continue to play tennis, given that the membership is not refundable in any circumstances? • 1=very likely, 5=very unlikely • average 3.11/5 	<ul style="list-style-type: none"> • 3. A friend of yours has just renewed his yearly membership at his tennis club for CHF 150 (€ 100). Yesterday, he felt a pain and went to the doctor, who diagnosed a tennis elbow. How likely is your friend going to continue to play tennis, given that the membership is not refundable in any circumstances? • 1=very likely, 5=very unlikely • average 2.78/5
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Dr. Stefan Michel 2tailed t-test p=0.149 not significant

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 **Theatre**

Same here. The survey was done during the Swine-Flu crisis.

<p>9. Six month ago, you bought a ticket for a theatre play and paid CHF 60 (€40). Today, you feel not well and you have high temperature.</p> <ul style="list-style-type: none"> • Are you still going to the theatre? • 1= very unlikely • 5= very likely • average 2.34/5 	<p>9. Yesterday, you bought a ticket for a theatre play and paid CHF 60 (€40). Today, you feel not well and you have high temperature.</p> <ul style="list-style-type: none"> • Are you still going to the theatre? • 1= very unlikely • 5= very likely • average 2.44/5
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Dr. Stefan Michel 2tailed t-test p=0.643 not significant

9 Principle 1: Sunk costs

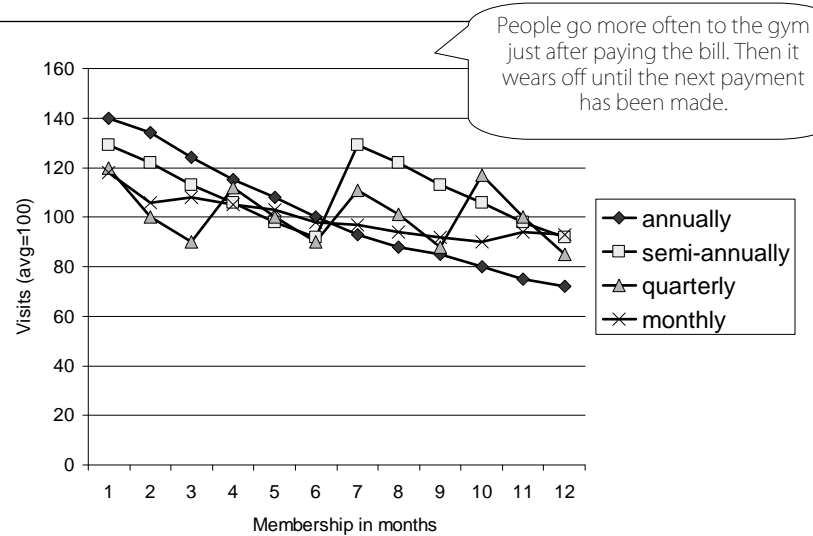
- In economics and business decision-making, sunk costs are costs that cannot be recovered once they have been incurred. In traditional microeconomic theory, sunk costs are irrelevant to a decision.
- Behavioral economics proposes the opposite: that sunk costs greatly affect actors' decisions, because humans are inherently loss averse and thus normally act irrationally when making economic decisions.
- Example: IT project

If managers had a choice of putting 2 more millions into a project on which they already spent 5 millions, or accept a new vendor who offers the same solution for 1.5 millions, they are likely to choose the former.

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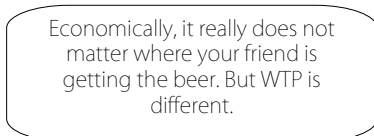
Quelle: www.wikipedia.com


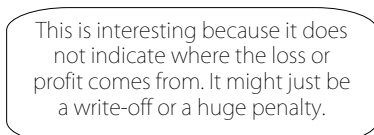
10 Sunk costs influence consumption
600 members of a fitness club in Colorado




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Source: Gourville/Soman (2002)

 11	Beer at the beach	 <p>Economically, it really does not matter where your friend is getting the beer. But WTP is different.</p>
<p>7. You are lying on the beach on a hot day. All you have to drink is ice water. For the last hour you have been thinking about how much you would enjoy a nice bottle of your favorite beer. A companion gets up to make a phone call, and offers to bring back a beer from the only nearby place where beer is sold, a run-down convenience store. He asks how much you are willing to pay for the beer. Assuming your friend would not inflate the price, what price do you tell him?</p> <ul style="list-style-type: none"> • <u>6.07</u> US\$ 	<p>7. You are lying on the beach on a hot day. All you have to drink is ice water. For the last hour you have been thinking about how much you would enjoy a nice bottle of your favorite beer. A companion gets up to make a phone call, and offers to bring back a beer from the only nearby place where beer is sold, a fancy hotel resort. He asks how much you are willing to pay for the beer. Assuming your friend would not inflate the price, what price do you tell him?</p> <ul style="list-style-type: none"> • <u>7.54</u> US\$ 	
Dr. Stefan Michel	2tailed t-test p=0.056, borderline significant	

 12	Elevator repair	 <p>This is interesting because it does not indicate where the loss or profit comes from. It might just be a write-off or a huge penalty.</p>
<p>11. You receive a letter from your elevator company that due to rising costs, they will increase the annual fee for servicing the elevator by 10% as of January 1. The same day, you read in the newspaper that the company has posted a record profit for the past year.</p> <ul style="list-style-type: none"> • Do you perceive this practice as fair? • 1= very unfair, 4= fair • average 2.46/4 	<p>11. You receive a letter from your elevator company that due to rising costs, they will increase the annual fee for servicing the elevator by 10% as of January 1. The same day, you read in the newspaper that the company has posted a record loss for the past year.</p> <ul style="list-style-type: none"> • Do you perceive this practice as fair? • 1= very unfair, 4= fair • average 3.17/4 	
Dr. Stefan Michel	2tailed t-test p=0.000	

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 **British Airways and Amazon**

I thought that yield management for airlines is more accepted than for book stores. Amazon actually tried to differentiate prices and customers hated it.

10. You find out that when you order a book through Amazon.com, that the prices for the very same book change depending on which account you log in to (same country, same shipping, etc.).


- Do you perceive this practice as fair?
- 1= very unfair, 4= fair
- average 2.08/4

10. You find out that when you quote a flight from New York to London and back for a specific date with British Airways, the prices for the very same route change depending on whether you login to the British Airways US site versus UK site.

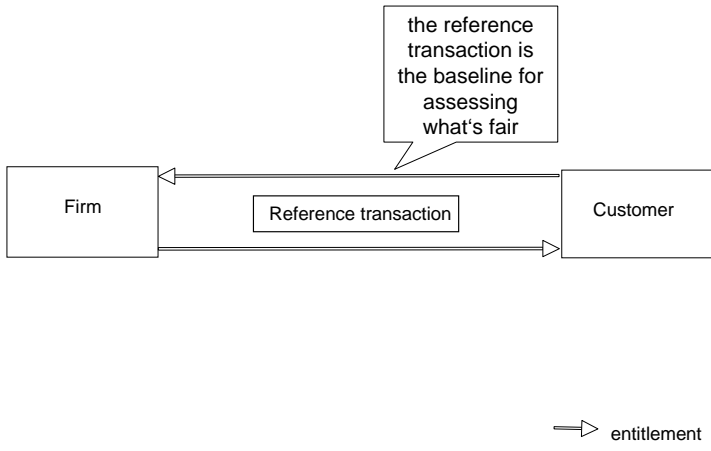
- Do you perceive this practice as fair?
- 1= very unfair, 4= fair
- average 2.03/4

Dr. Stefan Michel 2tailed t-test p=0.751, not significant

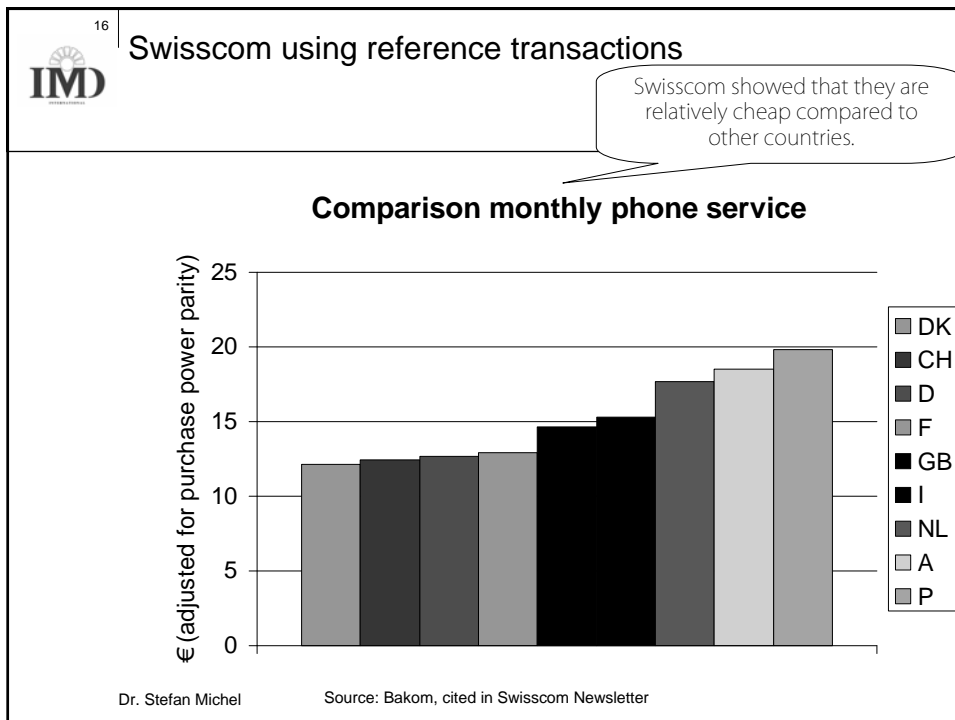
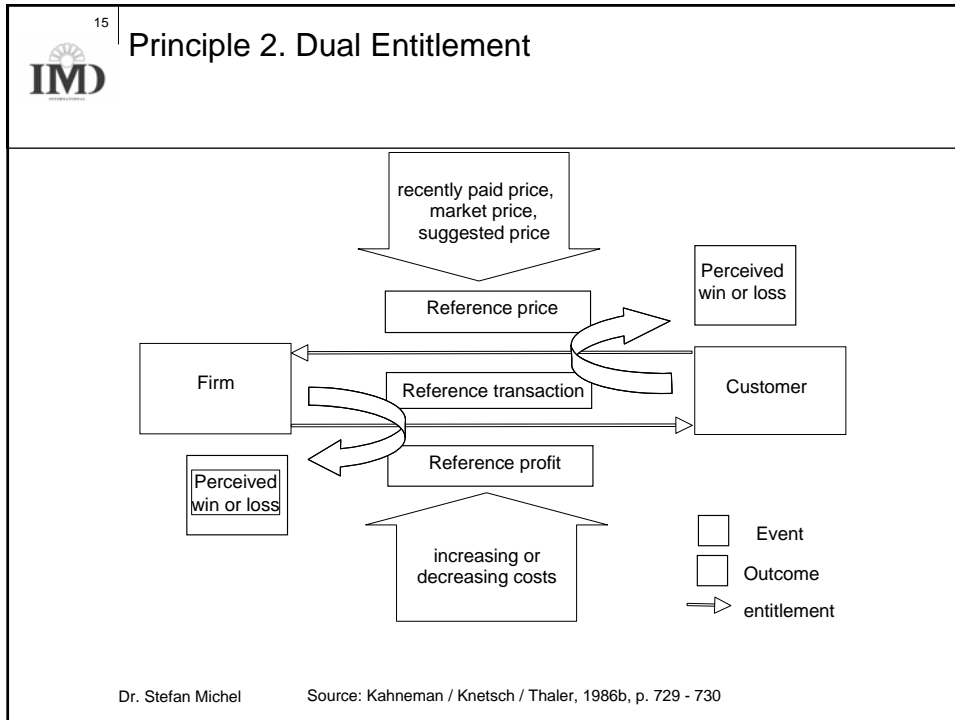
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 **Principle 2. Dual Entitlement**

the reference transaction is the baseline for assessing what's fair



Dr. Stefan Michel Source: Kahneman / Knetsch / Thaler, 1986b, p. 729 - 730



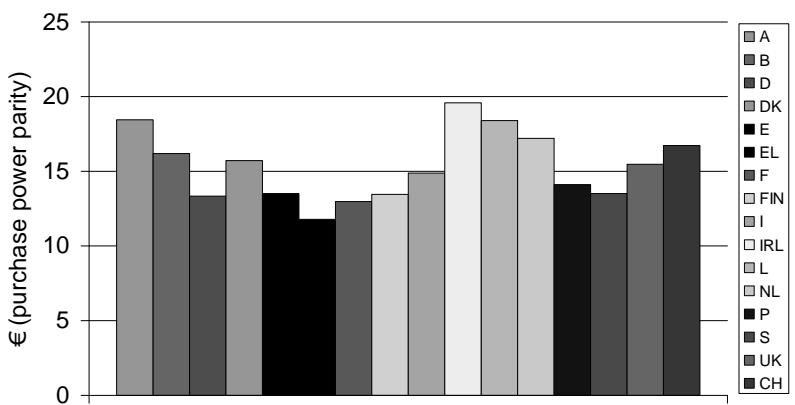
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IMD

Swisscom using reference transactions: the broader sample

I checked out the full data set which shows that Swisscom selected a reference group that is more expensive.

Comparison monthly phone service



Country	Cost (€)
A	18
B	16
D	13
DK	15
F	13
I	19
L	18
NL	17
P	14
S	13
UK	15
CH	16

Dr. Stefan Michel Quelle: Bakom, zitiert in Swisscom Newsletter


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IMD

Coca Cola Vending Machine


- Coca Cola introduced yield management for vending machines

Coca Cola introduced a vending machine in Japan, where the prices increase with the temperature. The machine was withdrawn from the market after consumer protests.



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 **IMD Tie**

My personal favourite. This is fantastic.

<ul style="list-style-type: none"> • 1. The bookstore at my business school, IMD International in Lausanne, Switzerland) sells ties with the IMD Logo. Do you think the price of the tie is greater than CHF 90 (€60)? (As a rule of thumb, the value of 1 US\$ is between 1 Swiss franc (CHF) and 1 Euro (€)). • <u>11%</u> yes <u>89%</u> no 	<ul style="list-style-type: none"> • 1. The bookstore at my business school, IMD International in Lausanne, Switzerland) sells ties with the IMD Logo. Do you think the price of the tie is greater than CHF 30 (€20)? (As a rule of thumb, the value of 1 US\$ is between 1 Swiss franc (CHF) and 1 Euro (€)). • <u>71%</u> yes <u>29%</u> no
Chi2 p=0.000 highly significant	
<ul style="list-style-type: none"> • 2. What is your best estimate of a tie at the IMD gift shop? (in CHF) 59.77 	<ul style="list-style-type: none"> • 2. What is your best estimate of a tie at the IMD gift shop? (in CHF) 42.19
2tailed t-test p=0.000 highly significant	

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 **Minolta Camera**

As predicted, S2 looks much better when S3 is present. Sometimes, company should add a top model to their product line, even if it does not sell well. But it increases the attractiveness of the other models.

<p>4. Given that you are in the market to purchase a new camera, which of the following would you buy?</p> <ul style="list-style-type: none"> • 15% Minolta S1 priced at \$269.99 and rated 4 out of 10 by Consumer Report. • 84% Minolta S2 priced at \$539.99 and rated 9 out of 10 by Consumer Report. • 2% Minolta S3 priced at \$839.99 and rated 6 out of 10 by Consumer Report. 	<p>4. Given that you are in the market to purchase a new camera, which of the following would you buy?</p> <ul style="list-style-type: none"> • 25% Minolta S1 priced at \$269.99 and rated 4 out of 10 by Consumer Report. • 75% Minolta S2 priced at \$539.99 and rated 9 out of 10 by Consumer Report.
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 Wine choice

As predicted, wine is bought within a certain price range for a certain occasion. The brand is not the main driver of choice.

12. You are in the process of planning your 25th wedding anniversary party. You have already selected the menu, now you need to decide on the red wine. Which one do you choose, given that you need about 12 bottles?


This column shows the actual price

15%	1. Cabernet Sauvignon Stone Cellars Beringer, 2006 75cl (USA), CHF 9.90 (€ 6.60)	1. Chianti Classico Riserva DOCG Ducale Oro Ruffino, 2004 75cl (Italy), CHF 9.90 (€ 6.60)	22%
38%	2. Châteauneuf-du-Pape AOC Château Mont-Redon 2005 75cl (France), CHF 30 (€ 20)	2. Châteauneuf-du-Pape AOC Château Mont-Redon 2005 75cl (France), CHF 30 (€ 20)	54%
39%	3. Chianti Classico Riserva DOCG Ducale Oro Ruffino, 2004 75cl (Italy), CHF CHF 36 (€ 24)	3. Cabernet Sauvignon Stone Cellars Beringer, 2006 75cl (USA), CHF 36 (€ 24)	18%
8%	4. Shiraz Stonewell P. Lehmann, 2001 75cl (Australia), CHF 54 (€ 36)	4. Shiraz Stonewell P. Lehmann, 2001 75cl (Australia), CHF 54 (€ 36)	6%

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Chi² by price p=0.044 significant
Chi² by brand p=0.044 significant


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 Principle 3: Anchoring

- Anchoring is a psychological heuristic by which people start with an implicitly suggested reference point (the "anchor") and make adjustments to it to reach their estimate.
- A person begins with a first approximation (anchor) and then makes adjustments to that number based on additional information.
- Example: Estimate the result
 - $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 2250$ (median answer)
 - $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 = 512$ (median answer)

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 **Lost ticket**


This worked out beautifully.

- Imagine that you have decided to see a play where admission price is CHF 100 (€66) per ticket. As you enter the theatre, you discover that you have lost the cash that you were going to use to buy the ticket. Would you still pay another CHF 100 (€66) for a ticket to the play?
- 75% yes
- 25% no

- Imagine that you have bought a theatre ticket for CHF 100. As you enter the theatre, you discover that you have lost the ticket. The seat was not marked and the ticket cannot be recovered. Would you still pay another CHF 100 (€66) for a ticket to the play?
- 41% yes
- 59% no

Dr. Stefan Michel chi2 p=0.000 highly significant

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 **20 CHF Discount**

This is the proof that 20 Francs you save here are not the same 20 Francs you save there.

- 6. Imagine that you are about to purchase a watch-strap for CHF 30 (€20). The salesmen informs you that the watch-strap you wish to buy is on sale for CHF 10 at the other branch of the store, located 5 minutes walk away. Would you make a trip to the other store?
- 88% yes
- 12% no

- 6. Imagine that you are about to purchase a watch for CHF 990 (€660). The salesmen informs you that the watch you wish to buy is on sale for CHF 970 at the other branch of the store, located 5 minutes walk away. Would you make a trip to the other store?
- 70% yes
- 30% no

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Principle 4: Mental accounting

- Mental accounting attempts to describe the process whereby people code, categorize and evaluate economic outcomes.
- Mental accounting theorists argue that people group their assets into a number of mental accounts.

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Toblerone Experiment


The results of Fogel's experiments are:
Trading down: 1\$
Trading up: 50c
Choosing: 75c

- 1. Group: Traders-Down
 - You receive a Toblerone: For how much are you willing to trade down to a Hershey bar?
- 2. Group: Traders-Up
 - You receive a Hershey bar: How much do you pay for trading up?
- 3. Group: Choosers
 - On the one side, you see a Toblerone. On the other side the Hershey bar. How much do we need to add to the Hershey bar to make the two offers equally attractive?

Quelle: Fogel et al. AJM (2004)

zkkc .1

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Principle 5: Endowment effect

- The endowment effect is a hypothesis that people value a good or service more once their property right to it has been established.
- In other words, people place a higher value on objects they own than objects that they do not.

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Two ski pass for the same day

The results are not significant but point into the right direction.

<ul style="list-style-type: none"> • 8. You bought a ski pass for a world-class ski resort in a advance for CHF 60 (€ 40). This ski pass is nonrefundable and can only be used on a specific day. Today you received a free ski pass for a much smaller ski resort from a friend who you would like to see again. Where will you spend your day? • 18% world class ski resort • 82% smaller with friend 	<ul style="list-style-type: none"> • 8. You won a ski pass for a world-class ski resort with a face value of CHF 60 (€ 40). This ski pass is nonrefundable and can only be used on a specific day. Today you received a free ski pass for a much smaller ski resort from a friend who you would like to see again. Where will you spend your day? • 11% world class ski resort • 89% smaller with friend
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Dr. Stefan Michel Chi2 p=0.273 not significant

Principle 6: Loss Aversion

- Loss aversion refers to people's tendency to strongly prefer avoiding losses to acquiring gains.
- Some studies suggest that losses are twice as powerful, psychologically, as gains.
- Loss aversion was first convincingly demonstrated by Amos Tversky and Daniel Kahneman.

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BMW Car Dealer

Experiments show that selling down (starting with the most expensive model) leads to a higher average sales price than selling up (starting with the least expensive model).

Fahrzeugpreise

	Motor Zylinder/Ventile	Hubraum cm ³	Nennleistung kW (PS)	Verbrauch EU l/100 km innerorts / außerorts / kombiniert	CO ₂ -Emission g/km / Abgasnorm	EUR* ohne MwSt.	EUR* inkl. 19% MwSt.
Benziner-Modelle							
318i	4/4	1995	105 (143)	8,3 / 5,3 / 6,4	149 / EU5	2.865,55	28.400,-
320i	4/4	1995	125 (170)	8,4 / 5,4 / 6,5	150 / EU5	5.714,29	30.600,-
325i	6/4	2986	160 (218)	9,8 / 5,5 / 7,1	170 / EU5	0.000,00	35.700,-
325i xDrive	6/4	2986	160 (218)	10,9 / 6,1 / 7,9	189 / EU5	2.184,87	38.300,-
330i	6/4	2996	200 (272)	9,9 / 5,6 / 7,2	173 / EU5	3.571,43	39.950,-
330i xDrive	6/4	2996	200 (272)	11,0 / 6,2 / 8,0	193 / EU5	5.756,30	42.550,-
335i	6/4	2979	225 (306)	12,2 / 6,7 / 9,1	218 / EU5	5.546,22	42.300,-
335i xDrive	6/4	2979	225 (306)	14,1 / 7,1 / 9,7	232 / EU5	7.731,09	44.900,-

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Summary

1. Sunk Costs
2. Dual Entitlement
3. Anchoring
4. Mental Accounting
5. Endowment Effect
6. Loss Aversion

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Case: Tuition at ETH Zurich

- ETH Zurich is one of the best universities in the world.
- Tuition is CHF 1500 per semester, compared to US\$20000 at comparable universities.
- Whenever public universities in Switzerland and Germany try to increase tuition, student protests are stopping politicians from following through.
- How could pricing psychology be applied in this context?

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Case Solution

- It seems that the reference price for the tuition is too low (CHF 1500 per semester) → dual entitlement and anchoring.
- Any increase is perceived as a loss, which weights more heavily than an unrealized gain → loss aversion.
- Strategy: before increasing the tuition, the frame of reference needs to change.
 - First, send bills indicating the true value (Tuition CHF 15000 minus CHF 13500 subsidy)
 - Second, have students pay the full price and reimburse the subsidy
 - Third, start cutting the subsidy based on transparent criteria.
- Note: This strategy might not be feasible in this case. I use it as an example of applying pricing psychology.

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