

New A Level
Economics

Behavioural
Economics

A SAMPLE PROSPECT?

Teacher Instructions

This activity will help to develop your understanding of Prospect Theory and Loss Aversion.

Using the information below, and your own knowledge, answer the questions that appear throughout the passage.

So-called “Prospect Theory” was created by the psychologists Daniel Kahnemann and Amos Tversky in 1979; Kahnemann subsequently won the Nobel Prize in Economics for this ground-breaking piece of research which many academics now regard as being the “founding paper” for behavioural economics. Prospect theory provided rigorous evidence suggesting that the concept of Expected Utility (which underpins traditional economic theory) was not relevant to the real-world because humans cannot behave totally rationally.

Expected Utility Theory and Prospect Theory are both concerned with how people make choices between different options, in a range of circumstances. In simple terms, Expected Utility Theory tells us that people calculate the expected level of utility (“satisfaction”) that they will get from each possible option, and then will choose the option with the highest level of utility.

For example, suppose you are about to go for a walk and it looks a bit cloudy outside so you are trying to decide whether to take an umbrella. There are four possible outcomes:

- 1 You don't take an umbrella and it doesn't rain, so you are dry and keep your hands free
- 2 You do take an umbrella and it doesn't rain, so you are dry but you've had to carry the umbrella
- 3 You do take an umbrella and it does rain, so you are dry but have had to carry the umbrella
- 4 You don't take an umbrella and it does rain, so you are wet but have your hands free





A GOOD PROSPECT?

Expected Utility theory expects us to know the probability of rain, and to be able to work out our levels of utility when staying dry, getting wet, and when walking with an umbrella. If we know these probabilities and our utilities, we can calculate whether or not to take the umbrella with us.

A Explain why, in reality, you think it is difficult for humans to make these types of calculations.

Kahnemann's and Tversky's experiments showed that in reality humans find it difficult to assess the probabilities and utilities involved in a particular option, and so the real-world outcomes are not those that are predicted by Expected Utility Theory. This isn't really very surprising!

The mathematics behind Prospect Theory is quite complicated, but here are the basic essentials of what the theory tells us:

1 People much prefer certainty over risk, even if the possible gains are much higher in the riskier situation

B Explain how this phenomenon can be applied to people's "financial portfolios" i.e. their choices about how to save their money.

2 People place more importance on losses than gains, for example feeling more upset by losing a £10 note than the satisfaction they gain from finding a £10 note.

C Can you come up with another example of this phenomenon of loss aversion?



A GOOD PROSPECT?

D Many companies use free-trial periods or loan-periods to help sell their products. How does this help them to retain customers? (n.b. you may want to research the endowment effect if you struggle to answer this question).

3 People are more interested in relative gains/losses, rather than their absolute level of income, so a pay rise only feels like a pay rise if it is a bigger pay rise than that of others. For example, the behavioural scientist Hersh Shefrin described this as “get-rich-itis”.

E Go online and find the Economist’s “I dream of Gini” which shows the relationship between the level of inequality in a country and the level of happiness. To what extent does this data support this finding from Prospect Theory?

4 People struggle to deal with low probability events. For example, air crashes are very rare yet many people are afraid to fly. Conversely, stock market crashes seem to occur around once a decade yet people continue to invest huge amounts of money in stocks and shares.

F How does Prospect Theory help to explain why many people who take out insurance to help protect their belongings also buy lottery tickets (behaviour that seems odd to a traditional economist)?



A GOOD PROSPECT?

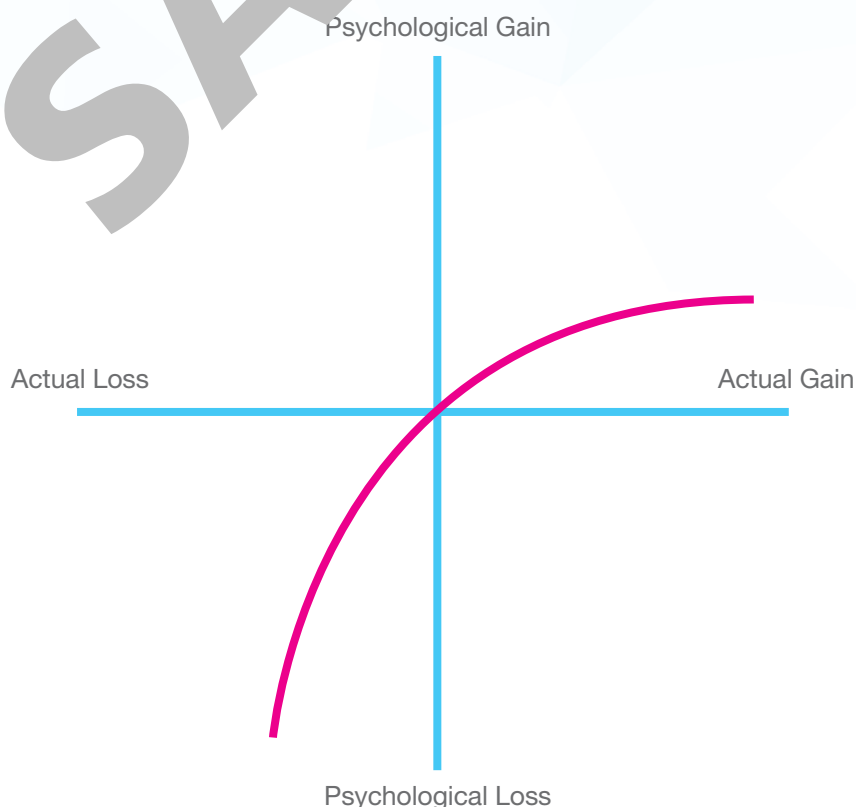
Prospect Theory was initially thought to apply mainly to financial markets. More recently, however, researchers have been looking at alternative applications.

For example, Anastasia Bogdanova, a young researcher from Duke University, has explored the application of Prospect Theory to marriage and divorce. She noticed that people can be very quick to marry but can take a very long time to make the decision to get a divorce, due to loss aversion.

Researchers in Chicago have investigated how to better incentivise teachers to perform better: instead of giving them a bonus at the end of the year if their students perform well in tests, teachers were given an extra payment at the start of the year and were told that they would have to pay it back if their students did not perform well. The study found that students of those teachers who were given the money at the start of the year made 10% more progress in that school year than those students whose teachers were rewarded with an end-of-year bonus.

G How do the concepts of Prospect Theory and Loss Aversion help explain this pay phenomenon?

The findings of Prospect Theory are often represented in diagrammatic form. The diagram below shows how people value gains and losses differently:





A GOOD PROSPECT?

H Explain how this diagram illustrates the difference between people's perceptions of gains and losses – you may want to annotate the diagram.

I How would the diagram be drawn if we assumed that Expected Utility theory was true, rather than Prospect Theory?

Some Extension Reading

<http://prospect-theory.behaviouralfinance.com/> - good for quotes about prospect theory

www.econport.org/econport/advanced_prospect_theory.html - a more technical, mathematical explanation of prospect theory

<http://johngaynardcreativity.blogspot.co.uk/2009/01/prospect-theory-three-examples-of-its.html> - a challenging look at some real world applications of prospect theory

www.economist.com/blogs/exchange/2013/08/prospect-theory-and-economics - an analysis of how prospect theory has been applied in recent years

<http://plato.stanford.edu/entries/rationality-normative-utility/#DefExpUti> - a detailed, technical explanation of expected utility theory



ANCHORING

SAMPLE



Teacher Instructions

Anchoring is usually described as a “cognitive bias” in which a piece of information given early on heavily influences a later decision.

Some examples include

- Walking into a store and seeing a designer handbag reduced from £500 to £250 – WOW, a saving of £250 must mean it's good value – and so you buy the handbag. The chances are that you would never have initially thought about buying a handbag for £250, but when the original price was anchored at £500 suddenly it seems like a good deal.
- A used car salesman pointing out the odometer reading and year of manufacture of the car, only to then lead you round other cars which are of poorer quality / level of maintenance but you focus only on the low mileage and how new the car is.
- The “minimum payment” level on credit cards encourages consumers to pay off less of their credit card bill than they could actually afford to do, resulting in higher interest payments in the future.

What affects “anchoring”? This is a big area of research for behavioural scientists. Currently, research findings suggest that a person's “susceptibility” to anchoring depends on:

- Their mood: sad people seem to rely more on anchoring to make decisions
- Their personality: extroverts are less susceptible to using anchoring than introverts or people who are very conscientious



Using this resource

Warm-up

As a starter exercise, you could ask students to write down the last two digits of their mobile phone number on a post-it note and keep it in their folder for a later exercise (so that they don't see your next question as being related!). This number can obviously range from 00 to 99.

Then ask them to estimate something such as the price of a large bouquet of flowers from the local florist, or the price of a kilo of fillet steak, or the distance between two places that they might know.

Similar studies conducted by Dan Ariely (who asked his subjects to write down the last two digits of their social security number and then bid for a chocolate bar) showed that the subtle anchoring technique of writing down a two digit number influenced the bids, so those with numbers closer to 99 bid higher amounts than those with numbers closer to 00. See what happens in your class!



Main activity

Split your class into two groups and issue one group with the Group 1 question sheet and the other with the Group 2 question sheet. You should notice that students are being asked to estimate the same pieces of data but have different leading anchor questions / statements which may anchor their thoughts differently. Give them 10/15 minutes to complete their sheets individually.

As a class, go through each question one at a time and calculate the average (mean) from each group's answers – which one is higher or lower? Does this reflect the leading anchor question? Ask your students what impact you think the anchor question or statement may have had on their answer.

Plenary activity

Ask students to work in pairs or small groups to consider when they might have experienced “anchoring”. Some suggestions are given below:

Round Pound Event
From £1
See what's on offer >

You looked at
LOOK INSIDE!
Professional JavaScript for Web Developers
Paperback by Nicholas C. Zakas
~~£49.99~~ **\$31.49**
> Find similar items

You might also consider
LOOK INSIDE!
JavaScript: The Good Parts
Paperback by Douglas Crockford
~~£29.99~~ **\$19.79**

\$28
Join 2,387 Happy Customers

n.b. the “true” answers to the questions on the student sheets can be found at the end of this resource.

GROUP 1 QUESTION SHEET

Have a go at answering the following questions:

No.	Question	Answer
1a	Is the Queen older or younger than 50 years old?	
1b	Estimate the age of Prince Charles.	
2a	Is a litre of milk priced at more than or less than 90p?	
2b	Estimate the price of a 500g pot of supermarket own-brand natural yogurt.	
3a	Is the distance from London to Edinburgh more than or less than 800 miles?	
3b	Estimate the distance from London to Newcastle-upon-Tyne.	
4a	Does it take more than or less than 3 hours to fly from London to New York?	
4b	Estimate how long it takes to fly from London to Dubai.	
5a	Was Michael Jackson older or younger than when he died in 2009?	
5b	Estimate the age of Stevie Wonder.	
6a	Was Hadrian's Wall built before or after 100 BC?	
6b	Estimate the year when the Romans first invaded Britain.	
7a	Did the first man on the moon do so before or after 1947?	
7b	Estimate the year in which the final lunar landing took place.	
8a	Did the series Big Brother start before or after 2008?	
8b	Estimate the year in which the series X-Factor started.	
9a	Was the boxer Muhammed Ali born before or after 1920?	
9b	Estimate the year of birth of Martin Luther King.	
10a	Is the river Nile longer or shorter than 10 000km?	
10b	Estimate the length of the River Thames	

GROUP 2 QUESTION SHEET

Have a go at answering the following questions:

No.	Question	Answer
1a	Is the Queen older or younger than 100 years old?	
1b	Estimate the age of Prince Charles.	
2a	Is a litre of milk priced at more than or less than 30p?	
2b	Estimate the price of a 500g pot of supermarket own-brand natural yogurt.	
3a	Is the distance from London to Edinburgh more than or less than 300 miles?	
3b	Estimate the distance from London to Newcastle-upon-Tyne.	
4a	Does it take more than or less than 10 hours to fly from London to New York?	
4b	Estimate how long it takes to fly from London to Dubai.	
5a	Was Michael Jackson older or younger than when he died in 2009?	
5b	Estimate the age of Stevie Wonder.	
6a	Was Hadrian's Wall built before or after AD?	
6b	Estimate the year when the Romans first invaded Britain.	
7a	Did the first man on the moon do so before or after 1975?	
7b	Estimate the year in which the final lunar landing took place.	
8a	Did the series Big Brother start before or after 1990?	
8b	Estimate the year in which the series X-Factor started.	
9a	Was the boxer Muhammed Ali born before or after 1960?	
9b	Estimate the year of birth of Martin Luther King.	
10a	Is the river Nile longer or shorter than 3000km?	
10b	Estimate the length of the River Thames	

ANSWER SHEET

No.	Question	Answer
1a	The Queen's age	Born 16th April 1926 so currently 89 years old
1b	Prince Charles' age	Born 14th Nov 1948 so currently 67
2a	Price of a litre of milk	24p a litre
2b	Estimate the price of a 500g pot of supermarket own-brand natural yogurt.	Tesco pot costs £1.10
3a	Distance from London to Edinburgh	400 miles
3b	Estimate the distance from London to Newcastle-upon-Tyne.	200 miles
4a	Hours to fly from London to New York	7 hours
4b	Hours to fly from London to Dubai.	7 hours
5a	Age of Michael Jackson at death	50
5b	Estimate the age of Stevie Wonder	Born May 13th 1950, so currently 65
6a	Year of Hadrian's Wall building	122 AD
6b	Roman invasion of Britain	55BC
7a	First man to orbit the Earth	1961
7b	Year of the final lunar landing	1972
8a	Year that Big Brother started	2000
8b	Year that X-Factor started	2004
9a	Muhammad Ali's birth year	1942
9b	Year of birth of Martin Luther King	1929
10a	Length of the Nile	6853km
10b	Length of the River Thames	346km

New
A Level
Economics

tutor2u 
Resources for Courses

**BEHAVIOURAL
ECONOMICS**

'SNAP!'

Teacher Instructions

When to use

This activity is a great revision activity for the behavioural economics topic.

Prior Learning

Students should have access to the tutor2u Behavioural Economics Key Terms Glossary – it is suggested that they have this in advance, and you may want to have set a “learning homework” or test for these terms and definitions.

How to Play

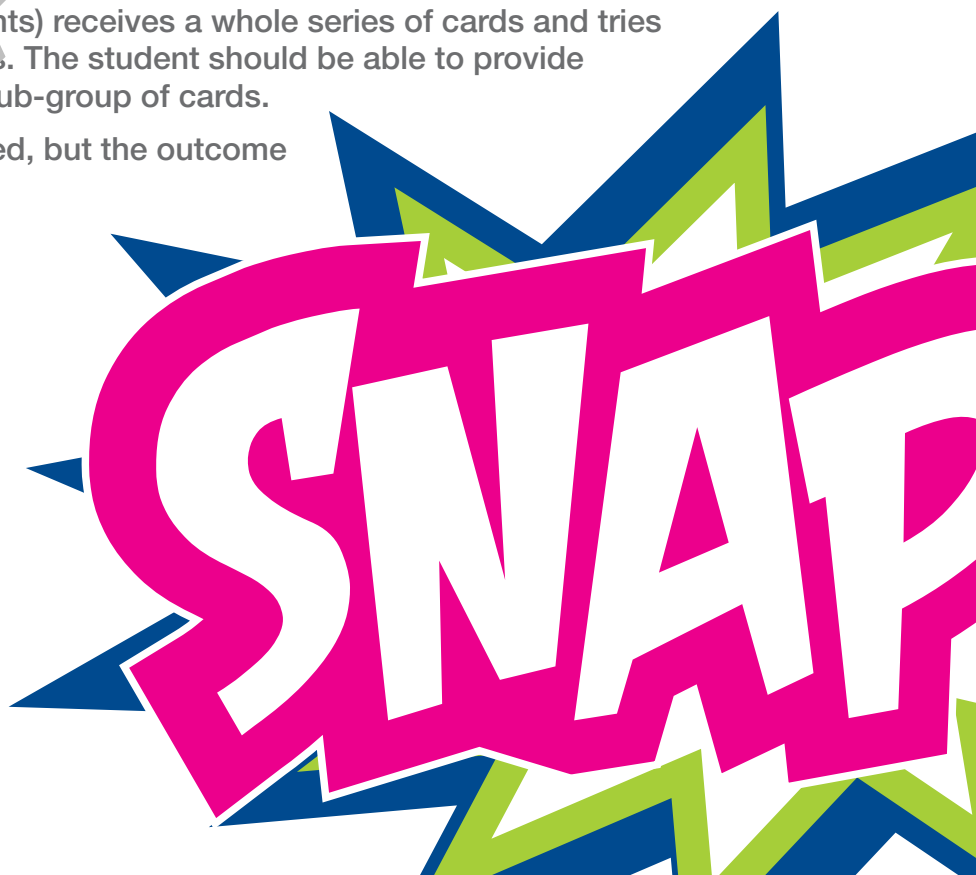
This resource contains a series of 48 cards, each of which contains a piece of information about or image of an example of something related to behavioural economics.

Students should be split into pairs or small groups and the cards divided up equally between each student. Each student should hold their pile of cards face down, and deal them one at a time face up in the middle of the group. If they can spot a behavioural economics connection between the card that has just been placed and the one placed previously then they should put their hand on the card pile and shout SNAP, before explaining the connection to the rest of the group. If the rest of the group agree that the connection is sound, the student who has shouted SNAP and given the explanation gets to keep all of the cards in the pile. The winner is the student who ends up with all of the cards.

Alternative ways to play

This resource can also be used as an extended individual revision task, in which each student (or pair of students) receives a whole series of cards and tries to group them into sub-groups. The student should be able to provide a heading or title for each sub-group of cards.

This exercise could be repeated, but the outcome turned into a wall display.



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SNAP!



BEHAVIOURAL
ECONOMICS

SNAP!



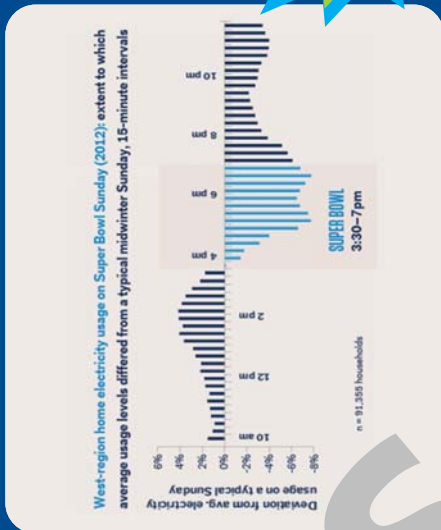
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SNAP!



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SNAP!

Basic	Pro	Premium
Full Email Support 25GB of Storage 5 Domains 10 Email Addresses	Full Email Support 50GB of Storage 10 Domains 20 Email Addresses	Full Email Support Unlimited Storage Unlimited Domains 50 Email Addresses
\$25 per month	\$49 per month	\$79 per month
SIGN UP	SIGN UP	SIGN UP

BEHAVIOURAL
ECONOMICS

SNAP!



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SNAP!

Basic	Pro
\$24/month	\$49/month
✓ 1 Domain ✓ 3 Keywords ✓ Reporting Tasks: - Content building - Directory submission - Buzz - Article submission - Q&A - Social profile - Social bookmarking	✓ 1 Domain ✓ 10 Keywords ✓ Reporting ✓ Add-on Domains ✓ Add-on Keywords Tasks: - Content building - Directory submission - Buzz - Article submission - Q&A - Social profile - Social bookmarking - Competitive backlink
Sign Up Now!	Sign Up Now!

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No risk, cancel at any time!

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SNAP!



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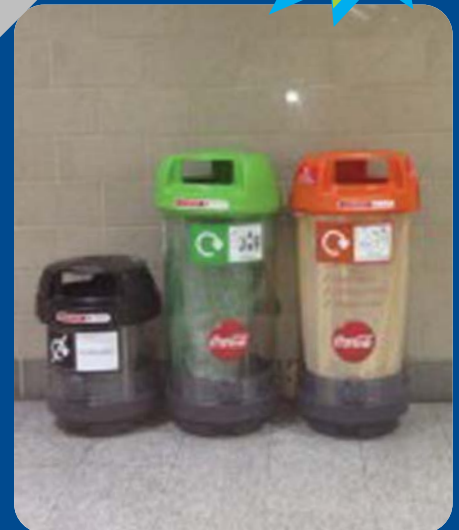
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SNAP!



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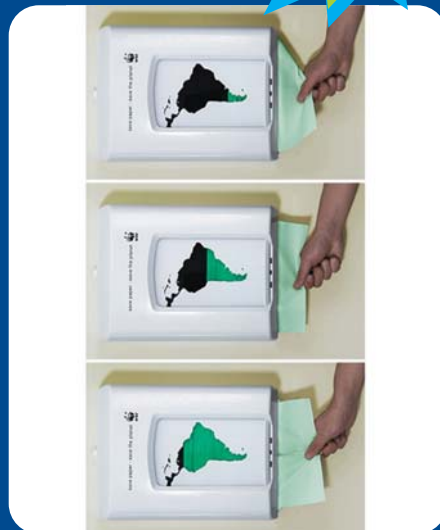
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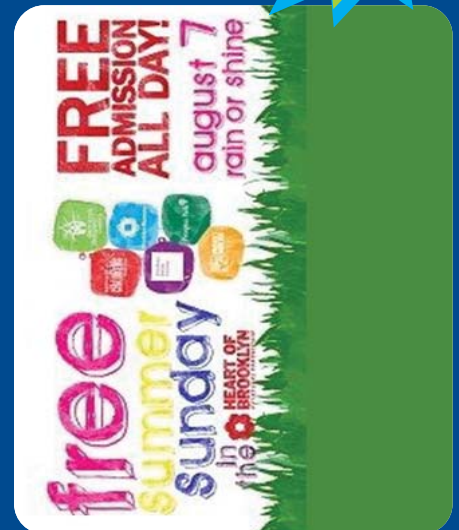
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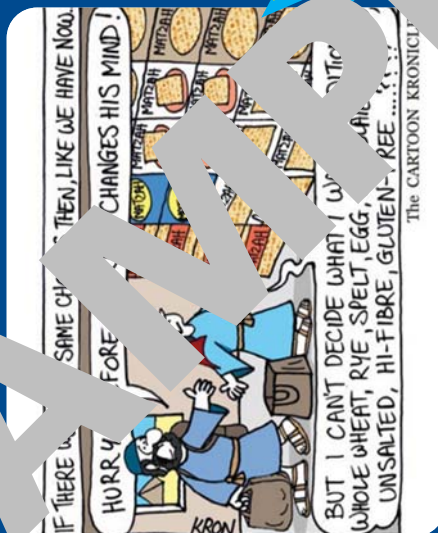
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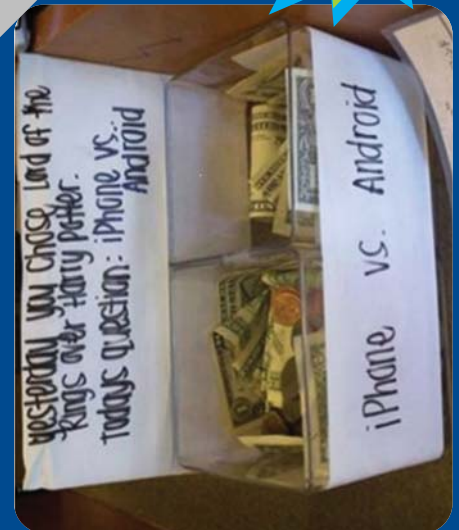
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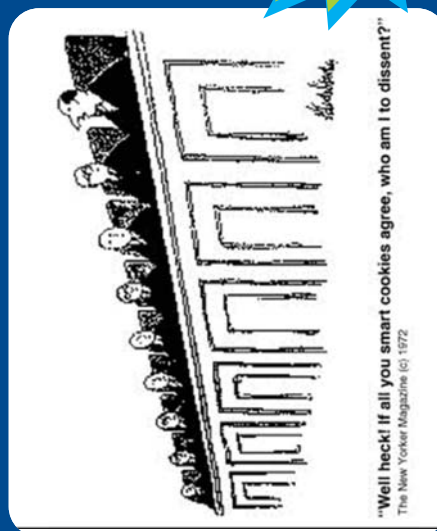
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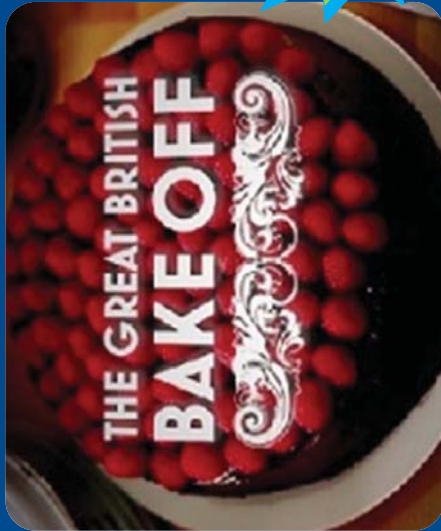
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SNAP!

Opt In vs. Opt Out
Where the default is set and its influence on organ donation rates

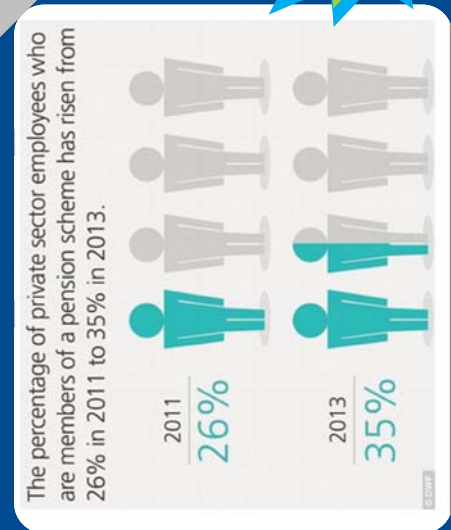
Rate of Organ Donation by Country

Country	Rate (%)	Individuals (Opt In)
NETHERLANDS	27.5%	Individuals Must Opt In
UNITED KINGDOM	17.2%	Individuals Must Opt In
GERMANY	12.0%	Individuals Must Opt In
SPAIN	89.5%	Individuals Must Opt Out
FRANCE	99.5%	Individuals Must Opt Out
PORTUGAL	93.6%	Individuals Must Opt Out
IRELAND	99.5%	Individuals Must Opt Out
NETHERLANDS	98.0%	Individuals Must Opt Out
GERMANY	89.5%	Individuals Must Opt Out

Source: Euro Area and Global Health, 2000

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SNAP!



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SNAP!



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SNAP!

Would you rather have a 10% chance of mortality or a 90% chance of survival?

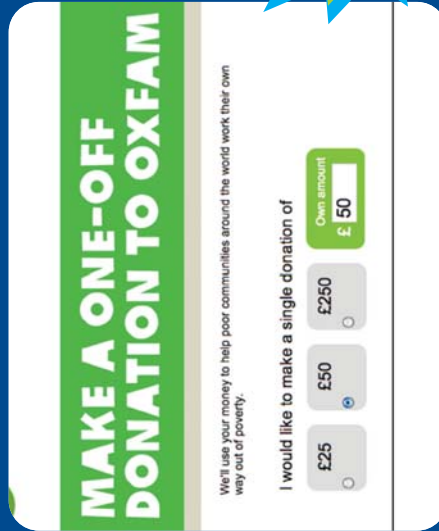
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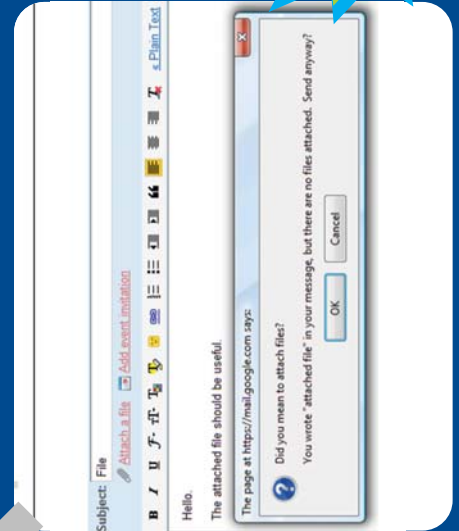
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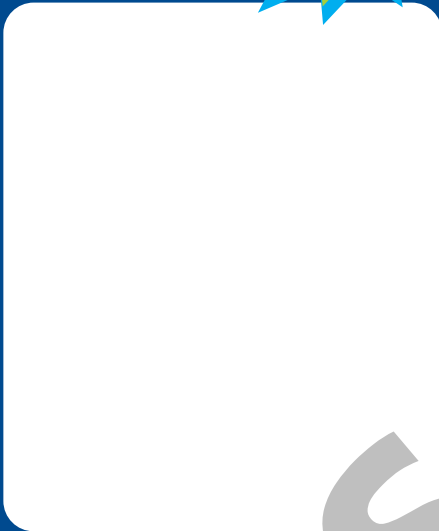
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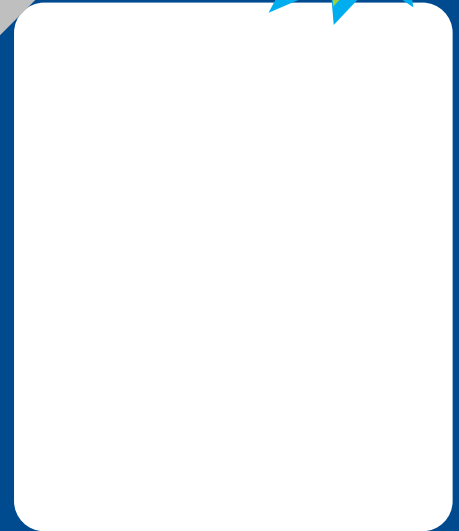
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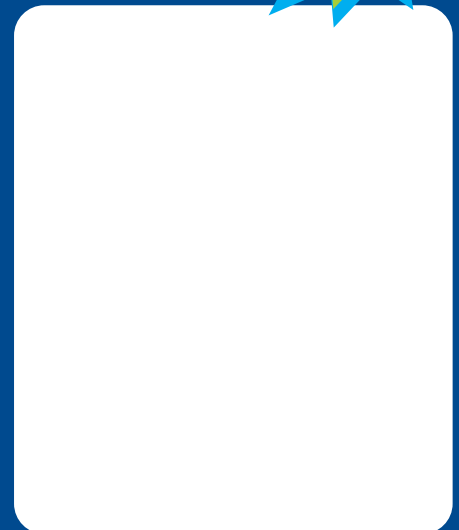
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SNAP!



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SNAP!



New
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SAMPLE

BEING CHOOSEY

Teacher Instructions

This activity looks at exploring “choice architecture”, and whether the number of options given to people affects their decision. According to standard neoclassical economics, the number of choices should not influence the outcome of a rational decision maker. Hopefully, this classroom experiment will show that the presentation of options can and does affect the decisions made by humans.

All of the examples in this resource have been adapted from the experimental work carried out by Dan Ariely, Ariel Rubinstein, Amos Tversky and Daniel Kahnemann. The outcomes of their experiments are noted at the back of the resource, as an additional handout for students.

Running the activity

Split the class into two equal groups – the more students the better, so this could be something to do across a number of classes (not necessarily economics classes – any students will do!) or the year group.

Give each student in Group A the question sheet for Group A.

Give each student in Group B the question sheet for Group B.

Ask students to complete the sheets individually and without consulting others.

Take in the completed sheets.

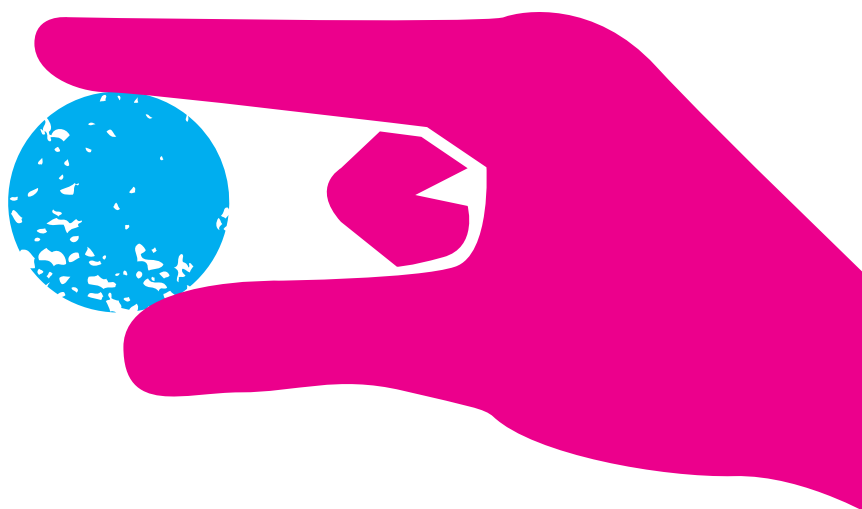
For Group A, count how many students chose option A or option B for each question. Jot down the numbers.

For Group B, count how many students chose option A, option B or option C for each question. Jot down the numbers.

Give students back copies of the sheets for each of Group A and Group B – ask them to observe the difference between the sheets. Ask them to predict what they think the different outcomes could be between the choices of the two groups (if any!) and why.

Show them the class results of the different groups’ choices.

Take a look at the “real experimenters” sheet at the end of the resource to see what happened when similar experiments were run on a large scale.



GROUP A QUESTION SHEET

1 Suppose your teacher gives you the following choice of a gift that you can take home.

- a A £5 note**
- b A Parker fountain pen**

Which of Option A or Option B would you choose? Option

2 You would like to buy a digital camera. You find two options, both made by the same manufacturer, each with roughly the same price. You have the following information – the score awarded to each camera by a professional photography magazine and the number of megapixels on the camera.

- a Model A has a score of 9.1 and has 6 megapixels**
- b Model B has a score of 8.3 and has 8 megapixels**

Which of Model A or Model B would you choose? Model

3 You keep looking for digital cameras and deciding against both models in question 2. Now you find the following cameras, both of which you like.

- a Camera A priced at £170**
- b The more sophisticated Camera B priced at £240**

Which camera would you choose? Camera

4 As a good Economics student, you decide to take out a subscription to the Economist. On the Economist's subscription webpage you see the following subscription options.

- a Subscription A – digital only access £59 per year**
- b Subscription B – print and digital access £125 per year**

Which subscription package, A or B, would you choose?

Subscription

GROUP B QUESTION SHEET

1 Suppose your teacher gives you the following choice of a gift that you can take home.

- a** A £5 note
- b** A Parker fountain pen
- c** A plastic Bic ballpoint pen

Which of Option A, Option B or Option C would you choose?

Option

2 You would like to buy a digital camera. You find two options, both made by the same manufacturer, each with roughly the same price. You have the following information – the score awarded to each camera by a professional photography magazine and the number of megapixels in the camera.

- a** Model A has a score of 9.1 and has 12 megapixels
- b** Model B has a score of 8.3 and has 10 megapixels
- c** Model C has a score of 8.1 and has 8 megapixels

Which of Model A, Model B or Model C would you choose?

Model

3 You keep looking for a digital camera after deciding against both models in question 2. Now you find the following cameras, both of which you like.

- a** Camera A priced at £170
- b** The more sophisticated Camera B priced at £240
- c** The incredibly sophisticated Camera C priced at £470

Which camera would you choose? Camera

4 As a good economics student, you decide to take out a subscription to the Economist. On the Economist's subscription webpage you see the following subscription options.

- a** Subscription A – digital only access £59 per year
- b** Subscription B – print and digital access £125 per year
- c** Subscription C – print and digital access £125 per year

Which subscription package, A, B or C would you choose?

Subscription

REAL EXPERIMENTAL OUTCOMES

The choices that you faced in your choosing activity were the same choices put to participants in large-scale behavioural science experiments by well-known researchers. Here are the findings of their experiments.

Question 1

Suppose your teacher gives you the following choice of a gift that you can take home.

- a A £5 note**
- b A Parker fountain pen**
- c A plastic Bic ballpoint pen – the additional option for Group B**

This experiment was carried out by the researchers **Tversky and Simonson**. In their experiment with Group A (i.e. 2 choices) 64% chose the money and 36% chose the pen. When the options expanded to include an inferior plastic pen the % who chose the high quality pen **rose** to 46%.

Question 2

You would like to buy a digital camera. You find two options both made by the same manufacturer, each with roughly the same price. You have the following information – the score awarded to each camera by a professional photography magazine and the number of megapixels in the camera.

- a Model A has a score of 9.1 and has 10 megapixels**
- b Model B has a score of 8.2 and 7 megapixels**
- c Model C has a score of 8.1 and 7 megapixels – the additional option for Group B**

This experiment was carried out on the **Economics Fables** website of **Ariel Rubinstein**. When presented with all options 65% of participants chose Model B, just 1% chose Model C and the remainder chose Model A. When only Model A and Model B were presented as options, the number choosing Model B actually fell to 53%.

Question 3

You keep looking for digital cameras after deciding against all models in question 2. Now you find the following cameras, all of which you like.

- a Camera A priced at £170**
- b The more sophisticated Camera B priced at £240**
- c The incredibly sophisticated Camera C priced at £470 – the additional option for Group B**

This experiment is a variation on that in Question 2, and was conducted by **Shafir, Simonson and Tversky**. They found that when they added in Option C, the % choosing Option B rose considerably, compared with the situation when participants were presented with merely options A and B.

Question 4

As a good economics student, you decide to take out a subscription to the Economist. On the Economist's subscription webpage you see the following subscription options.

- a Subscription A – digital only access £59 per year**
- b Subscription B – print only access £125 per year - *the additional option for Group B***
- c Subscription C – print and digital access £125 per year**

This is one of Dan Ariely's well known experiments. He asked 100 of his students at MIT to participate. When presented with all 3 options. 16 students chose option a and the remainder chose option C – none chose option B. However when option B was removed, 68% chose the digital only subscription and only 2% chose the print-and-digital option. At first glance, option B seems ridiculous. Its inclusion alters the decisions that subscribers make.