



The myth of maximisation

Quantifying trade-offs between social objectives
using the Conflict Scale

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ABSTRACT

One of the core assumptions of orthodox economic theory is that behaviour is driven by the desire to maximise something. This paper presents evidence that in terms of behaviour and goals which can be measured the assumption is false. The evidence is obtained using the Conflict Scale survey, an instrument with which respondents are forced to make choices which might be avoided with other forms of questionnaire. It was developed to allow pairwise comparison of values which are likely to clash.

Results support the contention that behaviour is not characterised by maximisation. The defence of maximisation in terms of unmeasurable constructs and, specifically, 'utility' is discussed. It is concluded that while the language of choice may be (and in economic theory is) constructed to include 'maximisation', this does not improve our understanding of behaviour and has probably had a harmful effect upon perceptions and policy.

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1. Introduction

A persistent theme in Western intellectual history has been that people seek to maximise something. For Aristotle, the rational individual sought to maximise happiness. The maximand for Nietzsche was power and for Freud it was the maximum avoidance of anxiety. Following Jeremy Bentham, early economists adopted Aristotle's maximand but after the seminal work of Robbins (1935) this shifted to utility and after Samuelson this was widely defined by revealed choice. The hypothesis that all decision makers are maximisers is now a fundamental axiom of neoclassical economics. In his defence of this Boland (1981 p1035) notes that 'Maximisation is now considered fundamental to everything'.

The inclusion of maximisation into the core paradigm was anomalous. Possibly the most powerful concept in economics is that there is an opportunity cost associated with virtually every choice. This applies to the allocation of finite resources but also to the allocation of finite emotional energy, ideological and intellectual commitment. Choice of one desired object or social goal must be weighed against another. In contrast with the mathematics of economics it is difficult to find examples where people maximise anything concrete or directly measurable: the alternatives that are available lead to ambivalence and compromise.

Economic theory has an immediate rejoinder to this assertion. Individuals maximise 'utility' which takes account of trade-offs and society seeks to maximise 'social welfare' which may similarly include multiple goals. The question which follows from this, however, is whether or not this describes an independently testable reality, whether it is simply a methodological convenience or a result of tautological definitions. In Section 4 which discusses this further, it is argued that maximisation as a general assumption is wrong and commonly harmful. The contention is not new. Maximisation was explicitly criticised *inter alia* by Shackle, Hayek and Keynes (Boland 1981).

With respect to measurable goals, trade-offs, not maximisation, characterise decision making. The conflict scale was developed to quantify this property. Essentially it consists of two rating scales in which possible objectives conflict. The instruction accompanying the scale was designed to prevent conflict avoidance. (For example you may be happier if your child is happier but, beyond a point, there is a trade-off and you may choose to sacrifice more of your time, energy, money and career than you would sacrifice to maximise your own happiness).

In the present paper we report results from an initial application of the scale. This asked a representative sample of 466 Australians to choose between 33 sets of conflicting choices. These were, broadly, in one of two groups. The first dealt with personal goals and social beliefs. The subject matter of these is summarised in Box 1. Each of the conflicting elements in Box 1 is a defensible maximand in a personal or social decision. The results, therefore, test the extent to which, in any of the choices, there is a tendency towards the maximisation of one of these goals. The present paper uses these results.

The second group of questions was concerned with choices within the health system: who should make decisions; who should pay for services and how. Results are reported in Richardson et al. (2012).

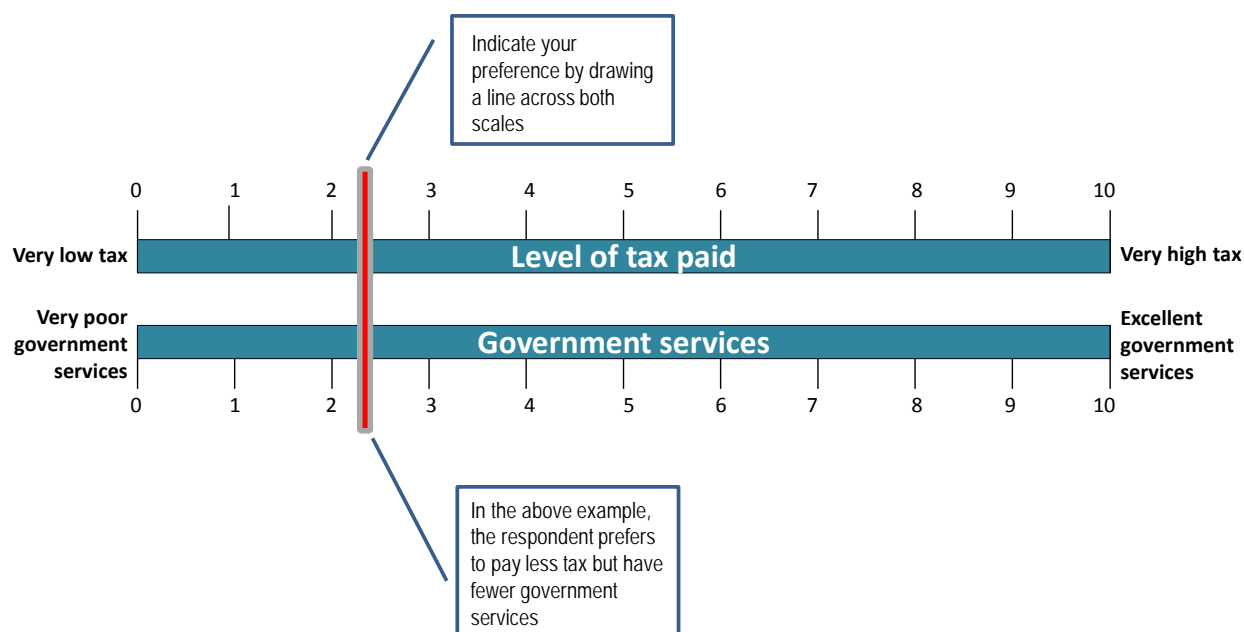
Box 1 Subject Matter

Personal goals	
Happiness	Choice (utility)
Autonomy	Duty
Self-interest	Protection/convenience
Social Goals	
Economic growth	Choice (utility)
distribution	Equal opportunity
Health Sector Choice	
Cost	Life expectancy
Choice (utility)	Quality

2 Methods and data

The Conflict Scale is illustrated in Box 2 as it appears online. The two conflicting values in the illustration are the desire to minimise personal tax and the desire to have excellent government services. The software employed allows individuals to move a slide right or left to indicate the preferred trade-off between the two goals.

Box 2 The Conflict Scale



Data

The survey was administered by an independent online survey company, CINT. Panellists were selected to be representative of the age-gender-education profile in Australia. The full questionnaire is reproduced in Appendix 1. In addition to these questions respondents were asked to complete the AQoL-8D and PWI quality of life instruments. Data were edited using five criteria:

1. That a predetermined minimum time was spent answering questions
2. That long sequences of different questions did not receive identical answers
3. Answers to two duplicated questions relating to hearing and vision varied by more than one category
4. A flat profile existed for the Personal Wellbeing Index (the same response category from the 11 available categories was ticked for all 8 questions)
5. Inconsistent answers were given for the two Medicare payment questions (eg as illnesses became worse the respondent indicated that Medicare, then the individual then Medicare should pay most of the costs).

Table 1 classifies the respondents according to age, gender and education. After editing, 69.5 percent or 466 respondents were retained. Reflecting the quoter of respondents there were approximately equal numbers of males and females and the age distribution reflected the Australian demographic structure. There were approximately equal numbers of respondents in the three education categories. These were respondents whose highest level of education was high school, a diploma or university. From Table 2, 6.4 percent were unemployed and seeking work. This represented 11.4 percent of those in work or seeking work which is somewhat higher than the Australian norm. Table 3 reveals a uniform distribution of respondents across the income spectrum, although these data are notoriously unreliable. Tables 4 and 5 indicate that respondents broadly reflected the voting pattern of Australians and that the importance of religion varied widely across the sample. The ethnic composition of the sample was largely European (30.2 percent) or Anglo Saxon (53.5 percent) with Asian the only significant sub-group (7.6

percent). 62.4 percent were married or lived with a partner and 20.4 percent were single or never married. 62.9 percent had children.

Table 1 Highest level of education attempted (by age group and gender)

Gender	Age group	Highest level of education attempted			Total
		High school	Diploma, certificate, trade or TAFE	University	
Male	18-24	6	5	9	20
	25-34	8	10	14	32
	35-44	12	15	11	38
	45-54	13	13	12	38
	55-64	58	10	8	76
	65+	12	14	13	39
	Total		109	67	67
Female	18-24	8	8	10	26
	25-34	13	14	17	44
	35-44	14	14	15	43
	45-54	12	13	12	37
	55-64	12	11	11	34
	65+	13	13	13	39
	Total		72	73	78
Total	18-24	14	13	19	46
	25-34	21	24	31	76
	35-44	26	29	26	81
	45-54	25	26	24	75
	55-64	70	21	19	110
	65+	25	27	26	78
	Total		181	140	145

Table 2 Employment

	Frequency	Percent
Full-time	143	30.7
Part-time	87	18.7
Unemployed, seeking work	30	6.4
Pensioner, retired, not seeking work	131	28.1
Student	24	5.2
Homemaker	51	10.9
Total	466	100.0

Table 3 Pre-tax gross household income (all sources)

	Frequency	Percent
Prefer not to say	64	13.7
Below \$350pw (less than \$18,200pa)	39	8.4
\$350-649pw (\$18,200-33,748pa)	79	17.0
\$650-999pw (\$33,800-51,948pa)	78	16.7
\$1000-1399pw (\$52,000-72,748pa)	88	18.9
\$1400-1999pw (\$72,800-103,948pa)	56	12.0
\$2000-2999pw (104,000-155,948pa)	40	8.6
Above \$3000pw (above \$156,000pa)	22	4.7
Total	466	100.0

Table 4 Political Preference

	Frequency	Percent
Labor	171	36.7
Liberal	209	44.8
Greens	86	18.5
Total	466	100.0

Table 5 Religious following

	Frequency	Percent
No answer	54	15.8
It plays a major role in my life	56	16.4
It plays a somewhat major role in my life	55	16.1
It plays a somewhat minor role in my life	57	16.7
It plays a minor role in my life	56	16.4
It plays an insignificant role in my life	63	18.5
Total	341	100.0

3 Questions and results

3.1 Personal goals

In the first set of questions personal goals included happiness, choice duty and autonomy. Each has been suggested as a goal in the health sector or as a constraint upon the achievement of other goals. Four questions test happiness as a maximand. As utility is commonly defined by revealed preferences when there is free choice those implicitly favouring the maximisation of utility would select choice as their preferred goal. Three questions test the commitment to maximising utility (choice).

These questions had the following general preface: '*Your happiness is often increased by your children, by helping others, by freedom of choice, etc. But there may be a limit after which these things make you less happy*'. Individual questions were:

1.1. Which is more important: your happiness or your child's happiness:

Comment: (If you don't have any children, please imagine that you do have them.) *You*

may have to sacrifice time, money, independence or your career to increase your child's lifelong happiness. How important to you is your own happiness compared with your child's happiness?

- 1.2. Which is more important: your happiness or your duty to others?
Comment: *Behaving in a socially good way (eg paying taxes, obeying laws, giving time and money to charity, helping people) may make you personally worse off.*
- 1.3. Which is more important: autonomy or happiness?
Comment: *Autonomy means you are capable of doing what you want. You have the knowledge, skills and ability to achieve your goals. Being autonomous may make you happy. However, having the ability to achieve things does not mean that you will achieve them. You may be lazy or frustrated by having to do everything and unhappy with yourself for not achieving your goals.*
- 1.4. Which is more important: happiness or freedom of choice?
Comment: *Sometimes choice allows us to be happy. At other times we make wrong choices. However, we may still value our right to make choices. Would you prefer no freedom of choice, but complete happiness – every decision is made for you but so wisely that you could not be happier? or Would you prefer to be absolutely free to do whatever you wanted, when you always made the wrong choices and this made you miserable?*
- 1.5. Choice of provider: electricity, gas, water, telephone: Which is more important: Maximum choice (*you select a scheme which suits you from multiple schemes and multiple providers*); or no time or anxiety over choice (*single provider, services cost slightly more*).
- 1.6. Financial choices: which is more important?
Maximum choice (*multiple banks, investment and superannuation funds and life insurance*); or no time or anxiety over choice (*single provider, services cost slightly more*).

Table 6 reports the results from the six questions which conflicted personal goals. Respondents unambiguously indicated that people do not seek to maximise happiness (Q1.1-Q1.4). In three of the four comparisons the alternative was ranked more highly, although in two cases the strength of preferences was not significantly different from the preferences for the other goals (duty and autonomy). In the first comparison, peoples' preference for their child's happiness were significantly greater than the desire for their own.

As noted above, orthodox economic theory equates the results of informed free choice with 'utility'. The comparisons in questions 1.4-1.6 which concern choice are therefore of particular interest. When conflicting, people attached significantly more weight to the right to choose than to happiness (question 1.4). However utility is not maximised. Quantitatively, people still attach considerable importance to happiness. People strongly reject the option of paternalistic interventions to reduce the time and anxiety associated with choice of utilities (Q1.15: the provision of electricity, gas and water) and the choice of financial institutions (Q1.6). In this context people overwhelmingly prefer choice.

3.2 Social goals

The issues of economic growth versus distribution; freedom of choice versus equality of opportunity divide the society and, in crude terms, define the left wing-right wing divide. The four

questions were not prefaced with explanatory notes as the issues are well known. The individual questions and comments were:

- 2.1. Which was more important in the last election: self-interest or public interest?
Comment: When you thought about how to vote in the last election, how much did you think about self-interest and about what would be best for the country?
- 2.2. Which is more important: economic growth or the distribution of income?
Comment: *Economic growth may be highest when individual incomes are very unequal.*
- 2.3. Which is more important: equal opportunity: no one starts behind or ahead) or the freedom to choose
Comment: *Equal opportunity may involve limiting some individuals' freedom to choose (eg, better than average education, health insurance). It may mean unpopular taxes for funding schools and Medicare.*
- 2.4. Which is more important: free choice or protection?
Comment: *Maximum freedom means others are free to exploit you and you may make wrong decisions. Maximum protection means restricted choice and control over much of your life by government.*

Results for question 2.1 reported in Table 7 suggests that people do not seek to maximise self-interest through the ballot box. 'What was best for the country' might have corresponded with what was best for the individual, but the stated motivation was not the motivation of economic theory. The statistically significant preference for an equal distribution of income over economic growth (Question 2.2) is compatible with economic theory, but the trade-off between these goals indicates that respondents did not seek to maximise either goal but gave them similar importance weights.

Consistent with the preferences reported in Table 6 respondents preferred a social system with choice rather than protection from anxiety (Q2.4). It was strongly preferred to equal opportunity (Q2.3), possibly reflecting the format of the question which emphasised the negative aspects of this.

3.3 Health sector choice

Choice, the prerequisite to utility maximisation in orthodox economics, is particularly contentious in the health sector. National schemes are overtly paternalistic. However there is the option of choice within a paternalistic scheme. The UK NHS limits this choice more severely than Australian Medicare. The issue is particularly acute in this sector because of the asymmetry in the information available to the patient and provider and because of the importance of the possible consequences of wrong choice.

Two sets of questions were asked in this section. The first focused upon individual choice within the health sector (Table 8); the second upon broader social goals (Table 9). The first set was prefaced with the following comment: *Choice puts you in control of what happens to you. It may result in better outcomes for you. However you may face too many choices which are complex so you make mistakes this may make you anxious about making choices.*

Individual questions were as follows:

- 3.1. Financial cost of health care (if Medicare did not exist). Which is more important:
Maximum choice: *multiple schemes with different levels of cover means lower cost insurance (you pay more when sick)*
or no time or anxiety over choice (*fixed cover, fixed cost*).

-
- 3.2. Choice of medical Treatment: control events or reduce anxiety
Comment: Sometimes alternative treatments are available (eg, drug, radiotherapy, surgery). It is often unclear which treatment is best choice.
 - 3.3. Choice of drugs: control events or reduce anxiety?
Comment: Different drugs have different side effects. Choice may cause anxiety if the choice is difficult and important.
 - 3.4. Choice of hospital doctor or reduce anxiety
Comment: 'Suppose you were allowed to select your own doctor to carry out an operation'
 - 3.5. Choice of quality or reduce anxiety
Comment: Suppose you could buy more or less care or pay a fixed price and let the doctor select the type of care you get. Buying care means you can pay less than the fixed price or pay more and possibly get better care'.

Results in Table 8 indicate a very strong preference for choice and, in particular, for the right to choose the type of health scheme (Q3.1). The strength of this result may have been due to the association between multiple schemes and lower cost insurance despite the caveat that this would mean 'you pay more when you are sick'. With respect to the type of treatment, choice of drugs, doctor and the quality of care respondents also preferred choice over reduced anxiety, (Q3.2-Q3.5) although quantitatively the preferences were more equally balanced.

In the second set of questions one option related to equity—equal treatment (Q3.9), access (Q3.8), sharing (Q3.7) or to suffering (Q3.6). The second option permitted maximisation of health or choice. The questions were:

- 3.6. Suffering or health improvement. Which is more important: Helping those who are suffering the most even if their health cannot be improved very much; or helping those whose life can be improved the most even if they are not suffering very much.
- 3.7. Sharing versus maximum health. Some illnesses are expensive to treat:
Choice 1: We should share resources equally even when illness is expensive to treat and the budget will run out no matter what the treatment cost; or
Choice 2: We should only spend money on patients who would gain the most even though others would miss out.
- 3.8. Equal access or fastest services. Should people be allowed to pay to reduce their waiting time; or should people have identical access.
- 3.9. Equal treatment or better health care: Should people be allowed to pay for better health care; or should all treatment be identical?

The number seeking maximisation was greater in these questions. Nevertheless, in each case the majority vote was for the equity option, or in question 3.6 for prioritising those who are suffering.

Table 6 Preference for personal goals

Question	Scale A*	mean	Scale B*	mean	SE	Diff	t	Percent***		Percent maximising
								0.0	10.0	
1.1	Own happiness	3.55	Child's happiness	6.45	0.103	-2.90	13.8	7.1	3.0	10.1
1.2	Happiness	4.97	Duty	5.03	0.104	-0.06	0.28	1.5	4.7	6.2
1.3	Happiness	5.11	Autonomy	4.89	0.11	0.22	1.00	3.7	4.5	8.2
1.4	Happiness	4.77	Choice	5.23	0.114	-0.46	2.01	5.2	4.5	9.7
1.5	Choice utilities	7.41	Min anxiety	2.59	0.103	4.82	23.39	1.5	17.6	19.1
1.6	Choice financial	7.61	Min anxiety	2.39	0.094	5.22	27.76	0.4	20.4	20.8

Key

* scales were from 0-10

** $t = (\text{mean-score} - 0.5)/\text{se}$

*** percent response on Scale A

Table 7 Preference for social goals

Question	Scale A*	mean	Scale B*	mean	SE	Diff	t	Percent***		Percent maximising
								0.0	10.0	
2.1	Vote self	4.10	Vote public	5.90	0.125	-1.80	7.2	7.3	6.0	13.3
2.2	Growth	4.64	Equal distribution	5.36	0.127	-0.72	2.83	2.8	11.4	14.2
2.3	Free choice	6.10	Equal opportunity	3.90	0.123	2.20	8.94	3.4	8.8	12.2
2.4	Free choice	5.79	Protection	4.21	0.125	1.58	6.32	8.2	5.0	13.2

Key

* scales were from 0-10

** $t = (\text{mean-score} - 0.5)/\text{se}$

*** percent response on Scale A

Table 8 Choice within the health sector

Question	Scale A*	mean	Scale B*	mean	SE	Diff	t	Percent***		Percent maximising
								0.0	10.0	
3.1	Choice of scheme	7.10	No anxiety	2.90	0.111	4.20	18.9	1.9	15.2	17.1
3.2	Choice of treatment	5.77	No anxiety	4.23	0.129	1.54	5.97	3.4	9.7	13.1
3.3	Choice drugs	5.37	No anxiety	4.63	0.131	0.74	2.82	5.4	7.7	13.1
3.4	Choice doctor	5.89	No anxiety	4.11	0.130	1.78	6.85	7.7	5.3	13.0
3.5	Choice quality	5.88	No anxiety	4.12	0.122	1.76	7.21	3.4	7.7	11.1

Key

* scales were from 0-10

** $t = (\text{mean-score} - 0.5)/\text{se}$

*** percent response on Scale A

Table 9 Maximum health, suffering, equity

Question	Scale A*	mean	Scale B*	mean	SE	Diff	t	Percent***		Percent maximising
								0.0	10.0	
3.6	Suffering	5.98	max health	4.02	0.120	1.96	8.17	3.4	10.7	14.1
3.7	Share	6.74	Max health	3.36	0.122	2.94	14.26	2.4	16.7	19.1
3.8	Equal access	5.89	Pay for priority	4.11	0.150	1.78	5.93	6.7	17.2	23.9
3.9	Equal treatment	5.60	Pay for quality	4.40	0.149	1.20	4.02	7.3	16.7	24.0

Key

* scales were from 0-10

** $t = (\text{mean-score} - 0.5)/\text{se}$

*** percent response on Scale A

4 Discussion

Results from the Conflict Scale apply to people's *stated*, not their *actual*, goals. People may believe that they are motivated in a particular way but their behaviour and actions may contradict this. For example, an individual with highly altruistic stated goals may reveal unrelenting selfishness in their choices indicating self-deception or hypocrisy. This unavoidable possibility is the reason for the economist's preference for *revealed*, rather than *stated*, preferences. As discussed below, however, it is also difficult to interpret motivation from revealed preferences unless a tautological definition of preferences is adopted. As a minimum, *stated* goals indicate individual's aspirations and a significant discrepancy between them and the goals adopted for economic policy and economic analyses should be a cause for concern and explanation.

4.1 The universality of maximisation

Some conclusions from the results are clear. Firstly, contrary to the teachings of Aristotle, people do not seek to maximise their own happiness or, at least, they state that they do not have this as an objective. The happiness of a one's own child is clearly of greater stated importance than own happiness. Own happiness cannot be distinguished from either duty or choice as motivations. Only autonomy is ranked lower possibly reflecting a poorer understanding of its meaning.

Questions with respect to abstract ideals resulted in a significant preference for choice, lending support for the economist's emphasis upon utility as a motivation. The two concrete choice questions with respect to financial and utility services strongly reinforced this theme. The importance of choice is also reflected in the health sector. People clearly like the option of selecting their own doctor and having the ability to influence the type of medical treatment they personally receive.

Nevertheless choice is not maximised and the preference for choice is context specific. Tables 4-6 report the proportion of respondents who selected a maximising preference weight of 0.00 or 10.0. An average of only 13.3 percent selected this option, varying from 8.2 percent (Question 2.4) to 20.4 percent (Question 1.6). This was not simply an aversion to scale endpoints. In 16 of the 19 questions 10 percent or more selected an extreme choice and a scale endpoint.

Similarly, in contrast with the 'libertarian' emphasis upon individual rights and choice – which are a prerequisite to individual maximisation – answers indicated a strong preference for equity in the health sector. Access and equal life expectancy were greater importance than the right of an individual to choose to pay for priority care or better quality (Table 9, Q3.8, A 3.9). Sharing, rather than maximisation of health, was the preferred goal (Table 7 Q3.7). Contrasting with the 'QALY maximising' tradition in health economics respondents indicated a preference for helping those who were suffering most (severity) rather than those who would gain most from care (Q3.6).

In sum, the right to choice is important. In most questions in which it was conflicted with another goal, greater emphasis was placed upon choice. However in all cases respondents were ambivalent and, to a lesser or greater extent traded choice against the other goal. This was not simply a reflection of a tendency to seek middle values. Mean scores as low as 2.9 indicate a willingness to deviate from the middle of the range. This suggests that with respect to the goals included in the survey individuals are likely to use multiple criteria and not simply maximise with respect to one goal.

4.2 Defending maximisation

There clearly are cases where maximisation can occur if the circumstances surrounding choice are defined sufficiently narrowly. If shares of Company A give a higher return than the shares of Company B and it is assumed that decision makers are profit maximisers then it may be predicted that they will invest in Company A. If a trip to the theatre gives greater happiness than an evening at home watching TV then the assumption of happiness maximisation leads to the prediction that the individual will go the theatre. If not – merging with a company with a dubious track record is a profit maximising strategy and profit maximisation is assumed then it may be predicted that no merger will occur. However in each case a *ceteris paribus* clause must be added to ensure maximisation occurs. If Company A is much riskier than Company B for example, then the prediction may fail. Individuals who are risk averse may prefer the safer shares; individuals who are risk takers may prefer the higher return. The individual may personally prefer a night at the theatre but stay at home to increase family bonding even though this duty may be somewhat burdensome. Not merging a company may be prudent but if the director's bonus is dependent upon a successful merger this action may be the one that is observed.

Despite such violations of the *ceteris paribus* clause, orthodox theory includes the assumption that maximisation is universal. A number of arguments can be used to support this. Four of them are considered below commencing with the least persuasive.

- (i) **Irrefutability:** It is possible that people maximise utility even though this may not be observed or observable. The evidence and proof is that people choose a particular course of action. The logic of the argument is as follows:

Question: *How do we know people maximise utility?*

Answer: *Because they freely chose a particular option*

But this argument is incomplete without a further step.

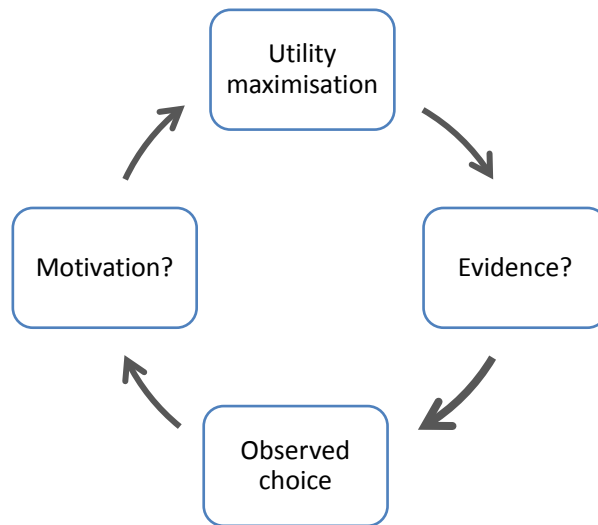
Question: *Why do they choose that option?*

Answer: *Because it maximises utility*

The argument is irrefutable but tautological (see Figure 1). Utility is simply defined by what people reveal. As an explanation for behaviour it amounts to the vacuous assertion that the reason for a person's behaviour is that they do it.

A second irrefutability argument is presented by Boland (1981). In this version 'any alleged counter example (to maximisation) is irrefutable' (p 1034). The argument is that 'properly stated, the neoclassical premise is: 'for all decision makers there is something they are maximising...if you claim you have found a consumer who is not a maximiser...how do you know there is not something which he is maximising' (p 1034). However irrefutability is a poor basis for a fundamental axiom. As no existential proposition can be refuted it is equally a defence of the existence of, for example, fairies or magical powers which guide behaviour. A more serious defence requires some demonstration of benefit or positive evidence that the assumption results in better explanation or prediction than alternatives.

Figure 1 Utility and the revealed preferences tautology



- (ii) **Maximisation as a framework:** ‘Utility’ may be interpreted so that it places no constraint upon behaviour and unlike the revealed preference tautology does not imply motivation. Utility is not a real entity or psychological constraint, but part of the vocabulary and, in algebraic format, a way of outlining options. As noted by Philips (1974) ‘In the limit one might say that the utility function exists because we postulated it’, (p26). As the function may allow trade-offs, ‘maximising utility’ does not entail maximising any real entity and the assertion that an individual maximises utility becomes equivalent to the statement that a choice is made. This type of maximisation is clearly unobjectionable because it does not prohibit any possible behaviour or explanation. But likewise it neither adds nor subtracts from the analysis and is redundant. It merely adds the appearance of rigour.

Generally, however, economists wish to place constraints upon the utility function. It reflects rational and/or consistent behaviour. But with these constraints the maximisation of utility ceases to be a framework and the defence of maximising behaviour depends upon the empirical truth of a particular view of rationality or rationalising its falsehood through instrumentalism.

- (iii) **Rationality:** Following Aristotle, it might be argued that if people do not maximise (in Aristotle’s argument, happiness) then they could be better off by maximising and, being rational, we may conclude that people therefore maximise. However, setting aside tautological definitions of rationality the evidence does not support this position. As Ariely notes:

‘We usually think of ourselves as sitting in the driver’s seat with ultimate control over the decisions we make... but, alas, this perception has more to do with our desires – with how we want to view ourselves than with reality’ (Ariely 2008 p243).

Scepticism over the role of rationality is not new. David Hume (1711-1776) noted that ‘reason is the slave of the passions’, a conclusion which has been strongly supported by

evidence from behavioural economics and neuro-psychology. Summarising this literature Lehrer (2009 p5) reports that 'whenever someone makes a decision the brain is awash in feelings driven by inexplicable passions'. Likewise Kahneman and Tversky quoted by Lehrer (Lehrer 2009 p78) observe that '(decisions) depend upon a brief list of emotions, instincts and mental shortcuts. These shortcuts aren't a faster way of doing the math; they're a way of skipping the math altogether'. This literature has now amassed powerful experimental evidence demonstrating that decisions vary 'irrationally' with context, framing and situation.

- (iv) **Instrumentalism:** Possibly the most persuasive argument for maximisation is that it is necessary for orthodox model building which, while unrealistic, provides a powerful and simple analytical instrument. The most famous statement of this is in Milton Friedman's methodological essay which commences with a full acknowledgement of the unreality of the key assumptions of classical economics.

'(There is) perennial criticism of "orthodox" economic theory as "unrealistic"...economics is a dismal science because it assumes man to be selfish and money grubbing, "a lightning conductor" of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness...it assumes markets to be perfect, competition to the pure and commodities, labour, and capital to be homogeneous.' (Friedman 1953).

Friedman defends this 'orthodox' theory as being predictive of human economic behaviour and supports his position by illustrating how true and useful conclusions may be obtained from unrealistic assumptions. He gives the example of a company which acts as if it is maximising profits when, in reality, it has followed a policy of survival and firms failing to do this have been eliminated. Other examples outside economics include the fact that trees act as if they are maximising their exposure to sunlight even though they are not, in reality, solving optimisation equations and billiard players act as if they are performing complex calculations and assuming that they do so allows an observer to make accurate predictions.

However Friedman's argument is rhetorical and anecdotal. The fact that false assumptions may result in true conclusions is trivial. For example, the two assumptions that '(i) some men are obese; and (ii) all obese people are bald' allows the prediction that some men are bald. This is true but the conclusion may also be obtained from true rather than false assumptions. Whereas true assumptions will not lead to false conclusions, false assumptions will lead to at least some false conclusions. In the above example it could be concluded that some women are therefore bald. A less trivial example is the assumption that (i) firms maximise profits; and (ii) profits are maximised when costs are minimised for a given output. This may lead to the correct prediction that companies will attempt to minimise the wages of their workers. But the false assumption that firms (only) maximise profits leads to the potentially false conclusion that they will seek to minimise rewards to their board members and executives.

The key question is why false theory would be preferred to correct theory. Friedman argues that the false theory may generate unexpected conclusions. However it is questionable if there are many examples of unexpected and empirically interesting conclusions which have been demonstrated from wrong theory which could not be more easily demonstrated from a true theory.

The strongest case for instrumentalism exists when false assumptions are only simplifications of a complex reality and do not drive the final conclusions. The physical sciences typically employ such simplifications. For example Newton ignored the effect of the gravity of peripheral planets in order to approximate simple orbits for planets of interest rather than the chaotic orbits of reality. But this type of simplification leads to quantitatively trivial error.

By contrast, in economics, and especially in Welfare Theory examples abound where assumptions are not simplifications which are of limited quantitative importance but where they drive conclusions and conclusions are little more than an unwrapping of the assumptions.

One example will suffice. The 'powerful' theory of excess burden suggests that there is a welfare cost associated with taxation which is additional to the direct cost of the tax. This occurs because taxation disrupts optimal patterns of spending. At the macro level income taxes will result in less work. At the micro level a tax on fat will increase the cost of ice cream, lower its consumption and reduce pleasure. The existence of this excess burden, however, is inferred and not observed empirically. In the first example the unstated *ceteris paribus* assumption is that without the tax the pattern of spending is optimal and that the tax therefore disturbs this optimal pattern. From the theory of second best, this is unambiguously false. (The tax may be reducing the length of a working week inflated by a variety of social and market imperfections.) The reduced consumption of ice cream undoubtedly lessens pleasure at the point of time when the ice cream is consumed. The unstated assumption is that it is this point in time which defines wellbeing. But an hour before consumption a weak willed individual may have determined that their wellbeing required abstinence. An hour after consumption the individual may feel unambiguously worse off.

4.3 Harmful Maximisation

Wrong assumptions necessarily lead to at least some wrong conclusions. When predictions are independently tested then the likelihood of undetected or harmful conclusions is minimised. However it is not eliminated if the response to the failed prediction is the addition of auxiliary assumptions to 'explain away' the incorrect core assumption. In welfare economics, conclusions are typically not subject to independent empirical testing and they are accepted on the basis of the assumptions which may be wrong in particular contexts. As one of the core assumptions of orthodox economics the maximisation hypothesis has almost certainly led to misleading conclusions and misdirected the intuition of economists and policy makers.

Examples are not hard to find. The doctrine of an excess burden from taxation was discussed above. It is likely that taxes sometimes do distort people's preferred preferences. However with adaptation it is unclear what loss of welfare really occurs. In other cases taxes are likely to undo distortions and the excess burden is negative. Within narrowly defined welfare economics they are one solution to the problem of externalities. With wider social objectives they may offset the effects of harmful marketing or social pressure. This latter possibility and potential policy consequences, however, are ruled out by assumption: before the tax people have maximised their wellbeing. The excess burden doctrine unjustifiably tips the scales against public expenditures.

Four other examples further illustrate the problematic effect of presumed maximisation on the scope of inquiry. They relate to the maximisation of profit, income, happiness and utility. As noted

earlier when circumstances are sufficiently circumscribed profit maximisation undoubtedly occurs. However this limits inquiry into the possibility of corporate altruism and management self-interest. Similarly individuals undoubtedly make choices where income maximisation is the primary consideration. However there are significant areas of behaviour where intrinsic motivation is not simply of importance but may be crowded out by the existence of financial incentives. Maximising happiness may explain numerous actions but eliminates the possibility of self-sacrifice motivated by considerations of service to community, duty to family, etc. These may, on occasions, add to happiness but this is not an inevitable outcome. A similar argument applies with respect to utility maximisation when utility is interpreted, not as happiness, but as strength of preference. Setting aside the tautological justification of utility above, a person may choose on the basis of another person's preferences (for example, their partner's or children's preferences) by the preferences of the community or by some ethical principle.

The misleading effect of a maximising doctrine is not limited to wrong prediction but may also affect our social objectives. The tradition of believing that individuals or society must rationally, maximise something has undoubtedly contributed to the maximisation of GDP as a social goal. In the health sector it has resulted in health or QALYs being nominated as the maximand. Most generally, the belief that individuals will maximise their own wellbeing is a powerful contributory argument for the libertarian social view of the ideal community.

4.4 Why Maximisation?

Two final questions can be noted but are not fully discussed here. The first is why economists (and some philosophers) are committed to the maximisation principle. One possible answer relates to history and tradition. However this is a superficial response and raises the question of why this tradition has not been replaced during the evolution of the subject: why has bad method not been driven out by good?

One speculative answer given by both Beinhocker (2006) and Keen (2001) is that the assumption of maximisation has been necessary to sustain the mathematics which bestows authority and apparent rigour upon the subject. Tversky suggests the same conclusion by reversing the argument that rationality leads to maximisation: Rather, rationality 'undergirds economics ... (and) permit the application of the maximising methods of mathematics quoted by Laibson and Zeckhauser (1998 p2). Non-maximising theories of economics have been suggested and, most famously by Nobel Laureate Herbert Simon. But as Beinhocker (2006) notes 'most standard textbooks don't even mention Simon or bounded rationality – an important reason for this neglect is that ...researchers never succeeded in turning Simon's ideas into a mathematical model', (p 118). Similar comments are true of other notable economists: Thorstein Veblen, Galbraith and Ilyack to mention a very few.

Mathematics offers a satisfying simplification of a complex world. It entered economics in the late 19th Century when economists such as Edgeworth, Walrus, Jevons and Marshall were deeply impressed by the success of calculus in the physical sciences. Heilbroner's comment on this is worth quoting.

'Edgeworth was not fascinated with economics because it justified or explored or condemned the world or because it opened new vistas...he was fascinated because...quantities could be translated into mathematics...which (required) the abandonment of that tension fraught world of the earlier economics... it yielded in return a world of...neat precision and loveliness...the world obviously had to be simplified.'
(Heilbroner 1980 p 178-79).

The tradition was carried into the mid-20th Century by Hicks, Samuelson, Arrow and Debreu. The edifice constructed by these economists and taught to generations of students rested upon a small number of paradigm defining assumptions of which maximisation was, perhaps, the most important. With some simplification, it might be argued that rather than serving our theories our theories have been moulded to preserve the role of mathematics in economics. However, this has been at expense of insights into real people and the real world which are the springboard for further progress.

The second question is the alternative analytical route if maximisation is not assumed. In principle, this is clear. It has already been adopted in the physical sciences and by behavioural economics. The first task of a science, physical or social, is to explain and predict real behaviour. In these alternative paradigms this has been achieved eclectically through unconstrained conjecture and error learning. The core assumptions have been defended but only for limited periods. The physical sciences have been characterised by the continual overthrow of past verities. Behavioural economics has, within its limited boundaries, followed a similar tradition.

5 Conclusions

An important conclusion from the initial analysis presented here is that the form of questioning – the Conflict Scale – produces plausible results which vary broadly in accordance with prior expectations. Respondents clearly distinguish between issues with mean scores varying from the middle of the scale to a maximum (mean) score of 7.6 and a minimum of 2.39. With the exception of choice in the defined contexts of financial and other services there was no tendency towards the maximisation of anything measurable. This is unsurprising. In a finite world the achievement of any goal is at the expense of another and, faced with opportunity costs, people compromise. Even in the case of choice – which, under idealised circumstances may indicate utility maximisation – there is an opportunity cost. Choice does not always maximise happiness, fulfil perceived duty, minimise anxiety, convenience or achieve equity. Faced with these trade-offs people compromise *albeit* to a different degree depending upon the context.

Maximisation can only be defended through the creation of an artefact – a construct (such as utility). However, by treating this as if it had some independent reality, economic theory runs the risk of deflecting attention from the behaviours which really motivate individuals and society. It has been suggested here that this tradition has probably had an adverse effect upon the development and relevance of the discipline.

Appendix 1 Conflict Scale

MONASH University

Centre for Health Economics
Faculty of Business and Economics



Conflict of Values Survey (v10)

Dear Respondent

We are seeking your help with a Monash University Research Project which concerns values and what people are prepared to trade to achieve them.

We want you to think carefully when you read the questions, and answer according to your own values and what you consider to be important.

Thank you in advance for your assistance.

Prof Jeff Richardson
Foundation Director

Dr John McKie
Senior Research Fellow

Angelo Iezzi
Program Manager

If you wish to continue please press 'next'

Quota Questions

Are you:

- Male
- Female

Which age group do you belong to?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

What is your highest level of education (even if not finished)?

- High school
- Diploma or certificate or trade or TAFE
- University

Introduction

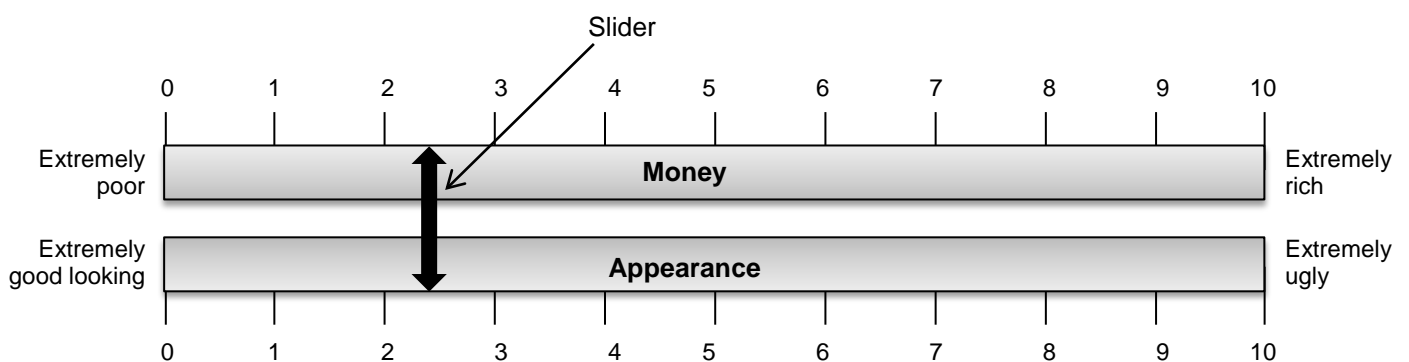
Sometimes our goals conflict with one another.

For example,

- Most people would like the government to cut taxes but also to provide more services
- And we would like to be slim but would like to eat more good food

Hence our survey has two scales. As you move the slider up one you cannot avoid moving down the other.

Example:



On the next pages, click on the slider and move it to your preferred position

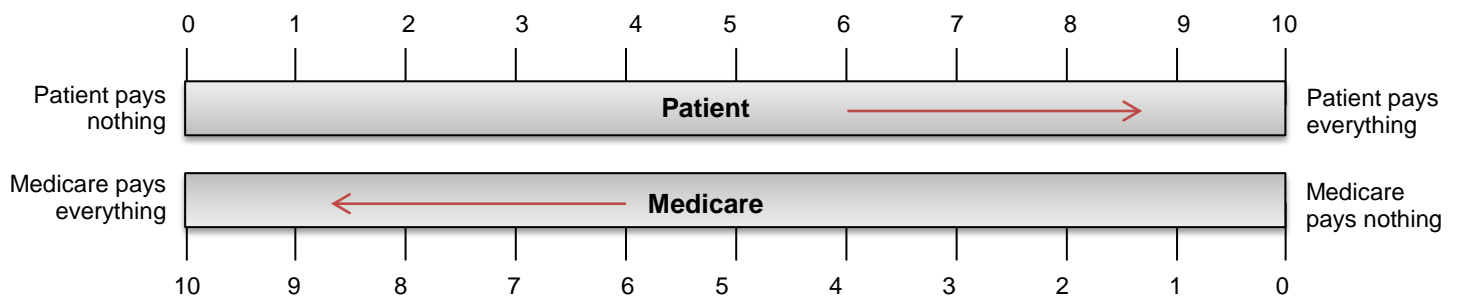
Part A

Who should pay for health care: Medicare or individual patients?

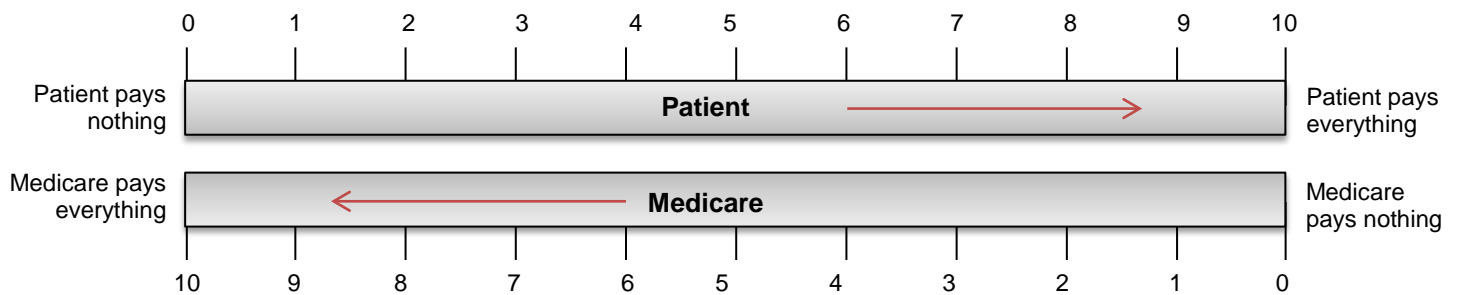
Some people argue that people should look after themselves.

Others argue that the cost of illness should be shared by everyone through taxation (ie Medicare).

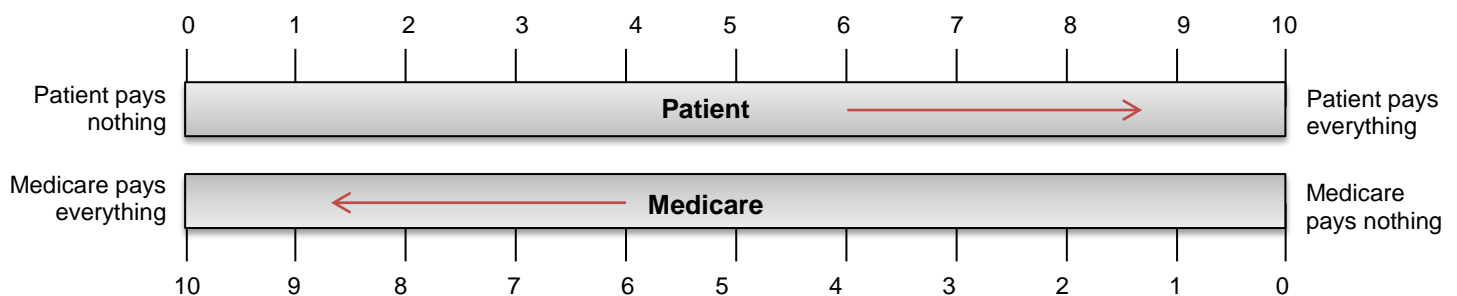
1. Who should pay for minor, inexpensive illnesses?
(eg colds, aches, anxieties)



2. Who should pay for moderately expensive illnesses?
(eg flu, high blood pressure, moderate depression)



3. Who should pay for serious, expensive illnesses?
(eg heart disease, respiratory disease, COPD, cancer)



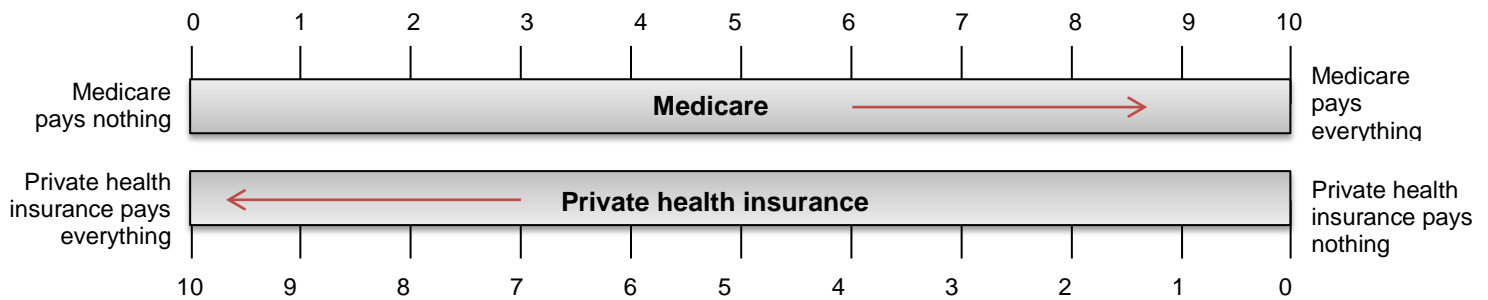
Part B

Who should pay for health care: Medicare or private health insurance?

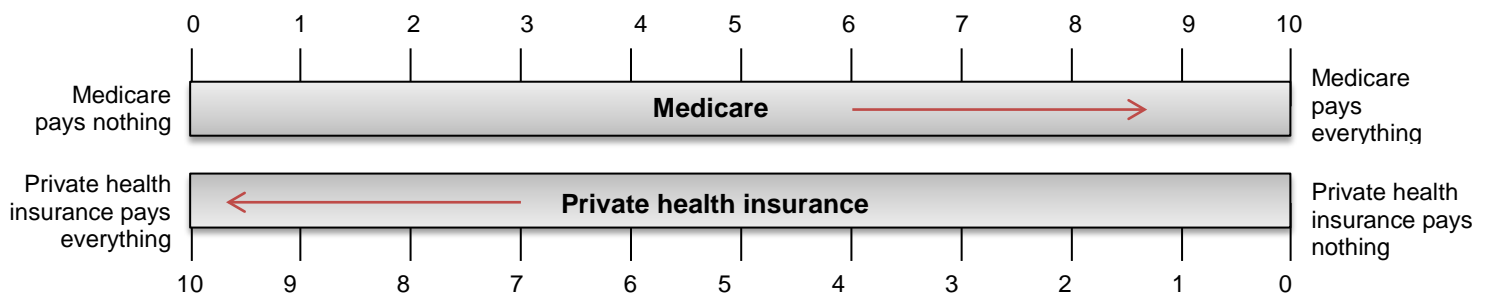
Some people argue that private health insurance gives greater choice.

Others argue that taxation is fairer on the poor and treats all people equally.

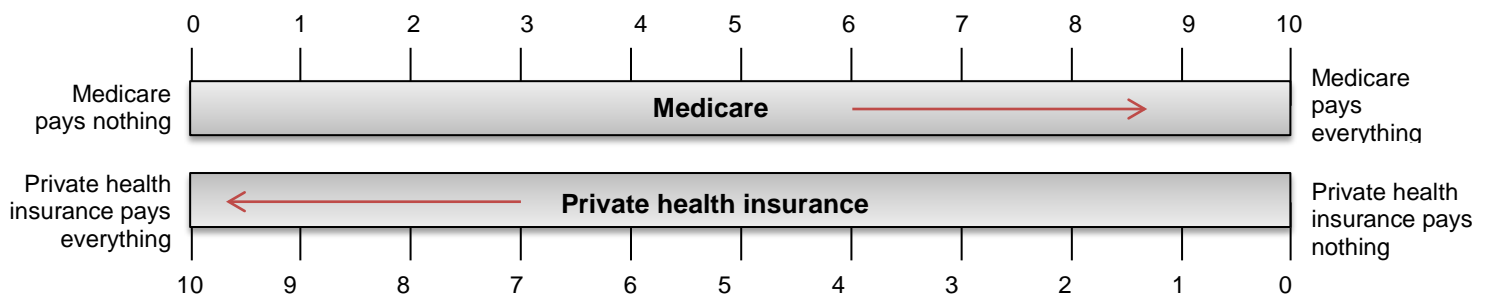
4. Who should pay for minor, inexpensive illnesses?
(eg colds, aches, anxieties)



5. Who should pay for moderately serious illnesses?
(eg flu, high blood pressure, moderate depression)



6. Who should pay for serious illnesses?
(eg heart disease, respiratory disease, COPD, cancer)



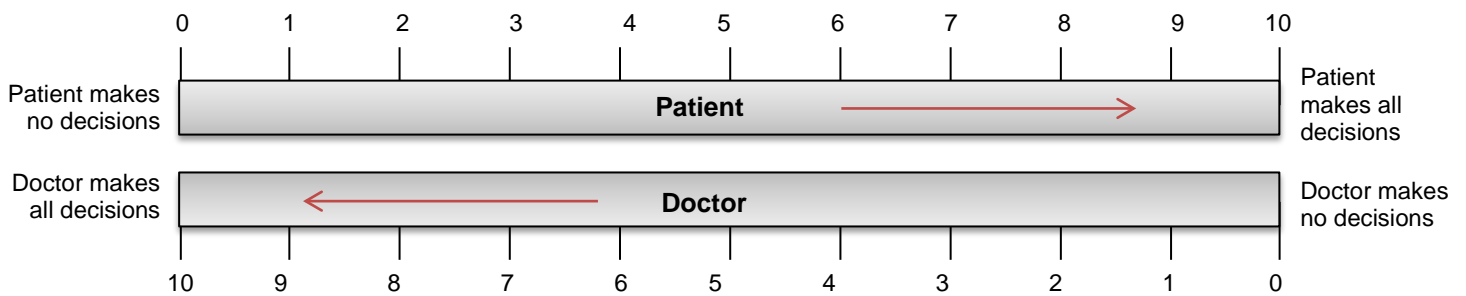
Part C

Who should make decisions about treatment?

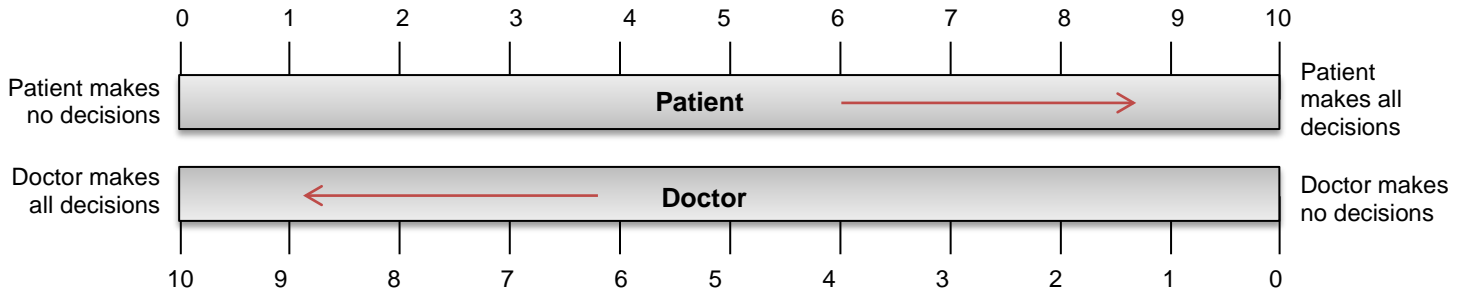
Some people argue that doctors have better judgement and, therefore, doctors should make all treatment choices.

Others argue that patients should choose and doctors should only advise.

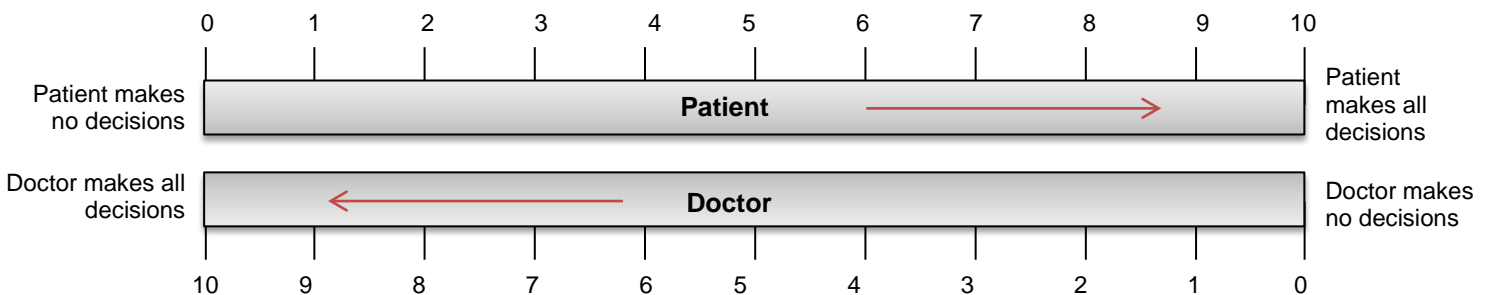
7. Who should make treatment decisions about minor illnesses?
(eg colds, aches, anxieties)



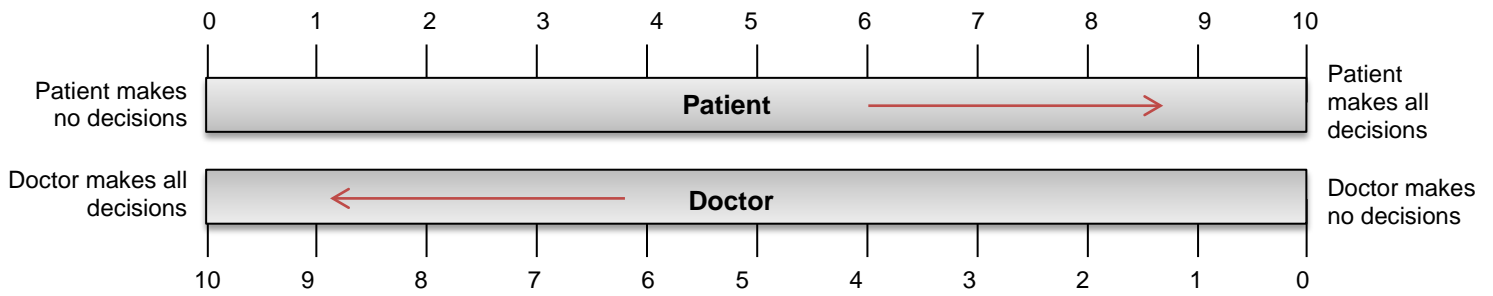
8. Who should make treatment decisions about moderately serious illnesses?
(eg flu, high blood pressure, moderate depression)



9. Who should make treatment decisions about serious illnesses?
(eg heart disease, respiratory disease, COPD, cancer)



10. Who should make treatment decisions about chronic ongoing illnesses?
(eg asthma, diabetes, chronic depression)



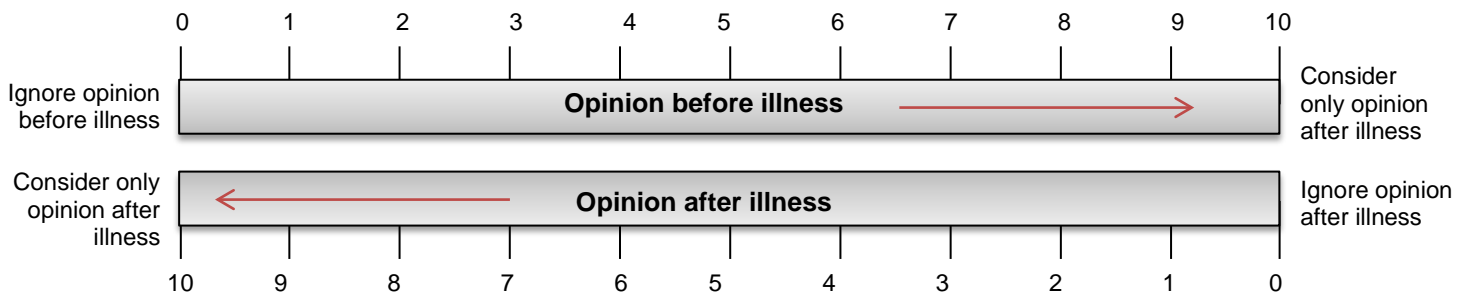
11. When should decision makers listen to people's opinions – before or after they have an illness?

People may feel fear, dread and anxiety before they have experienced an illness and therefore want comprehensive expensive care.

After they have experienced the illness they may find that the fear and dread were not fully justified.

The choice: Take account of people's opinions

- before an illness, allowing for their anxiety and errors.
- after they have the experience of the illness, and ignore anxiety and fear.



Part D

Aim of the health system

The health system has many possible goals:

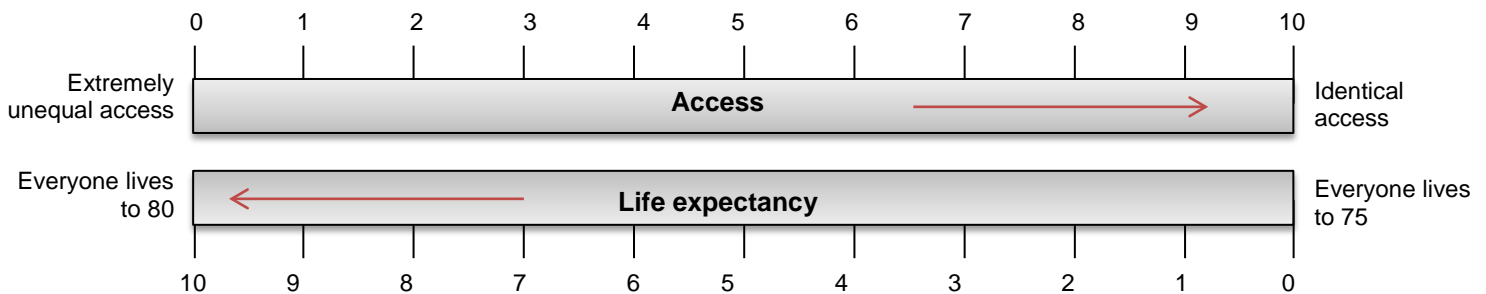
- Maximising health (eg total years lived, no matter who gets them)
- Providing equal access to health care (eg the same queuing for services and travel time)
- Minimising suffering (improving quality of life for the very worst off)
- Reducing inequities of health between groups of people (rich/poor/aboriginals/city/rural)

12. Which is important:

Equal (fair) access to health services (waiting times)

or

Providing identical access to health services may stretch resources so far that the quality of services falls and life expectancy falls

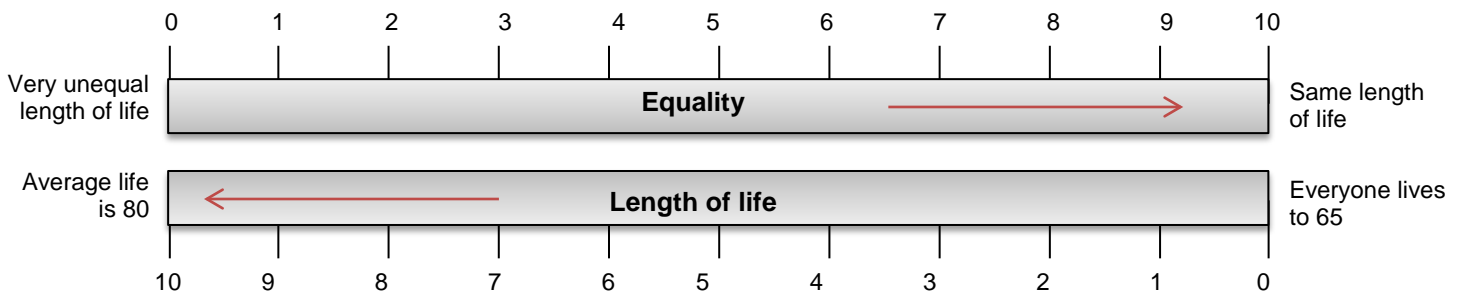


13. What should Medicare's policy be:

Equal life expectancy

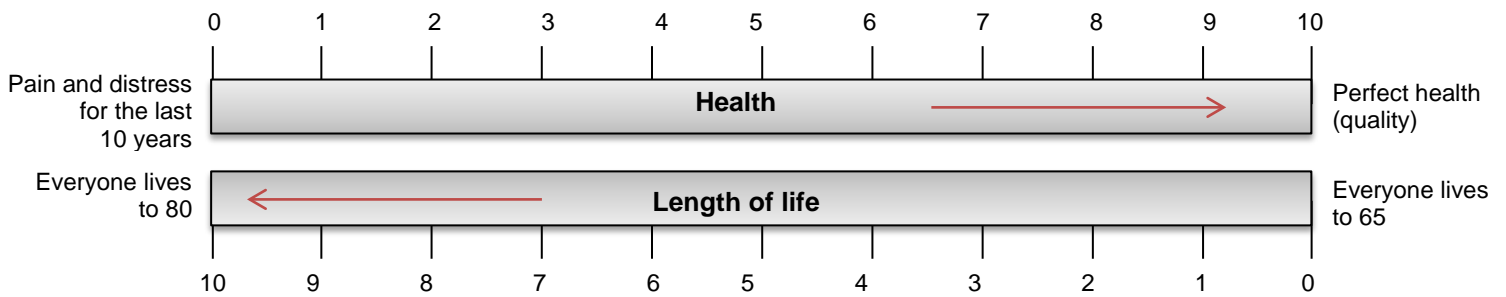
or

high average length of life. High average length of life means some live very long but others die when they are young.



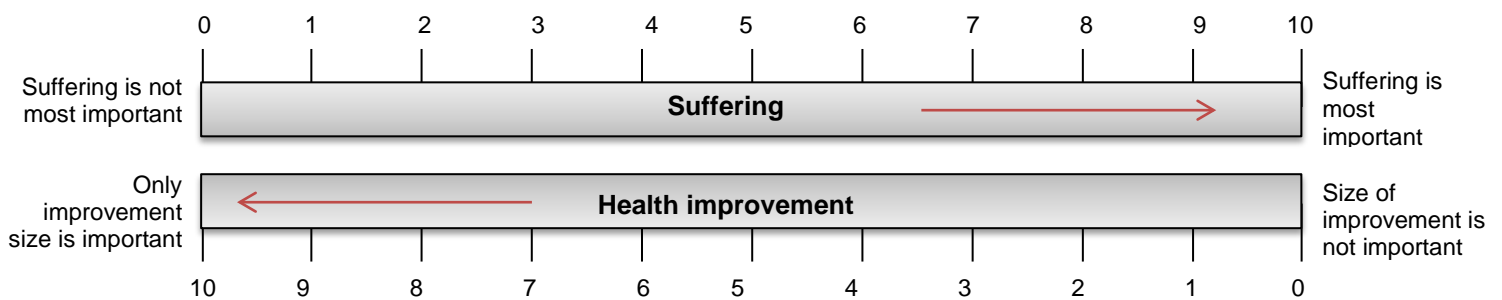
14. Which is more important:

Quality of life or Length of life



15. Which is more important:

Helping those who are suffering the most even if their health cannot be improved very much or Helping those whose health can be improved the most even if they are not suffering very much



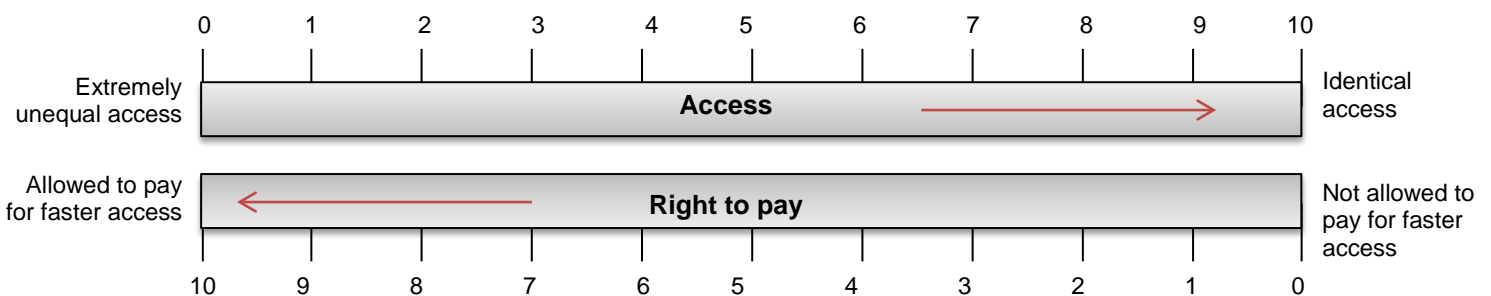
16. Which is more important:

Equal access or The right to pay for faster services

Some people argue that everyone should have equal access to health care and individuals should not be allowed to pay for faster access to services than others.

Others argue that people should have the right to spend their own money to get faster access. In this case, queues would vary according to individual spending.

Should people be allowed to pay to reduce their waiting time for health care?



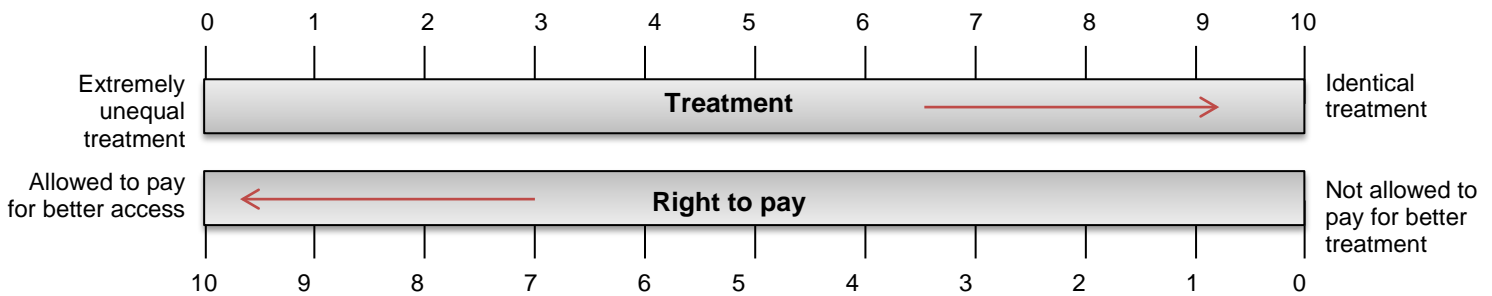
17. Which is more important:

Equal treatment for all or The right to pay for better health care?

Some people argue that everyone should have access to the same quality of care. Individuals should not be allowed to pay for better services than others.

Others argue that people should have the right to spend their own money to get better health care. In this case, treatment would vary according to individual spending.

Should people be allowed to pay for better health care?

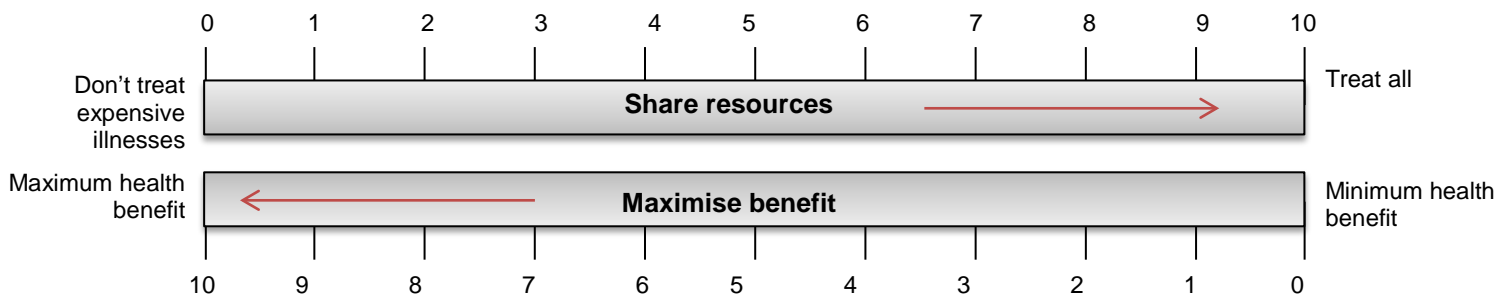


18. Sharing conflicts vs maximum global health

Some illnesses are expensive to treat. Money would buy more health if it was all spent on a smaller number of people who were not expensive to treat.

Extreme 1: We should share resources equally even when illness is expensive to treat and the budget will run out, no matter what the treatment cost.

Extreme 2: We should only spend money on patients who would gain the most even though others would miss out.



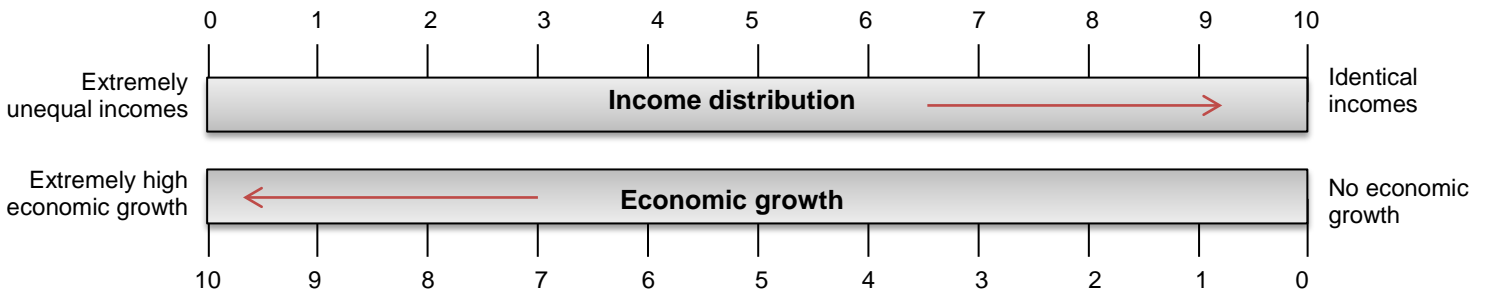
Part E

Social goals

19. Which is more important:

Economic growth or Distribution of income

Economic growth may be highest when individual incomes are very unequal



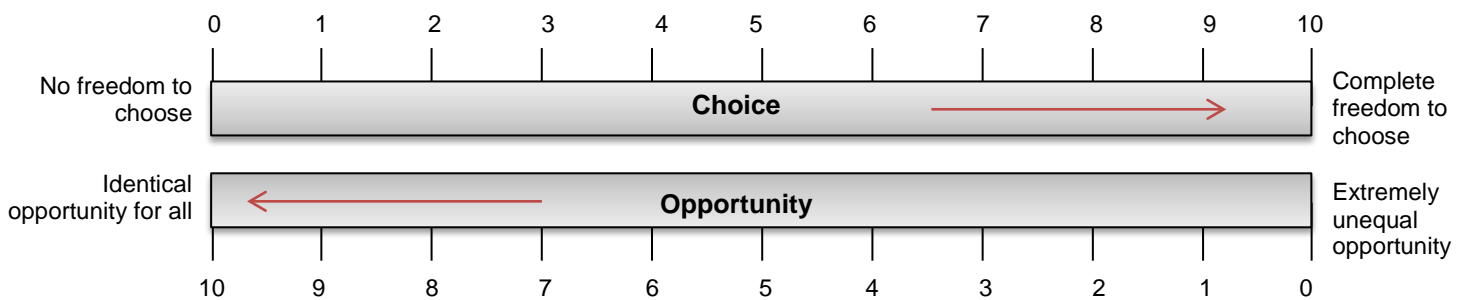
20. Which is more important:

Equal opportunity: no one starts behind or ahead or The freedom to choose

Equal opportunity may involve limiting some individuals' freedom to choose (eg, better than average education, health insurance).

It may mean unpopular taxes for funding schools and Medicare.

Freedom of choice may mean individuals make bad choices (eg failure to plan for ill health, catastrophes or retirement).

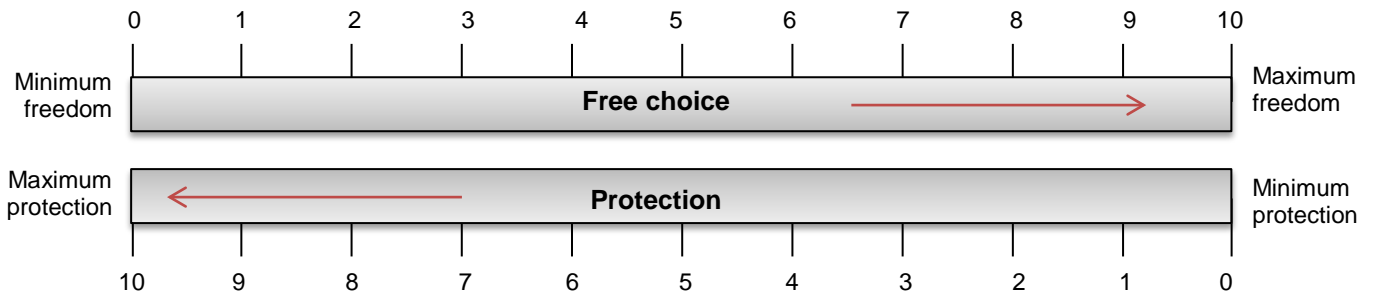


21. Which is more important:

Free choice or protection

Maximum freedom means others are free to exploit you and you may make wrong decisions.

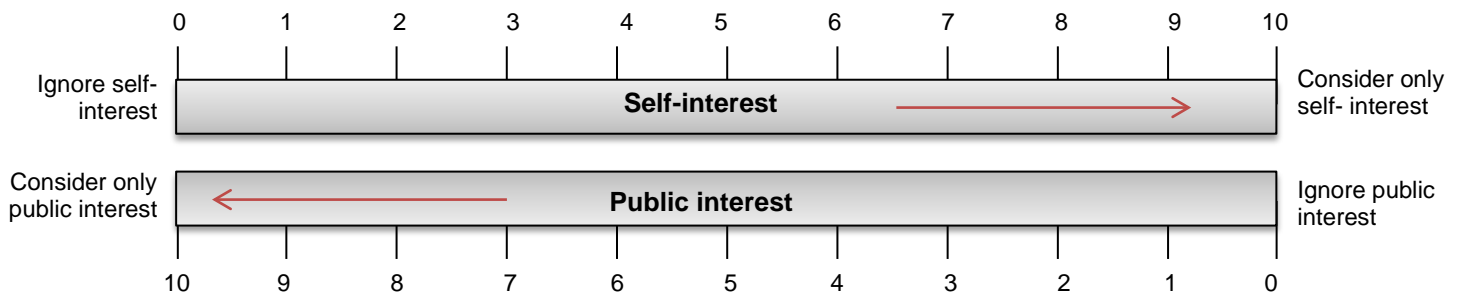
Maximum protection means restricted choice and control over much of your life by government.



22. Which was more important in the last election:

Self-interest or Public interest

When you thought about how to vote in the last election, how much did you think about self-interest and about what would be best for the country?



Part F

Happiness

Your happiness is often increased by your children, by helping others, by freedom of choice, etc. But there may be a limit after which these things make you less happy.

23. Which is more important:

Your happiness

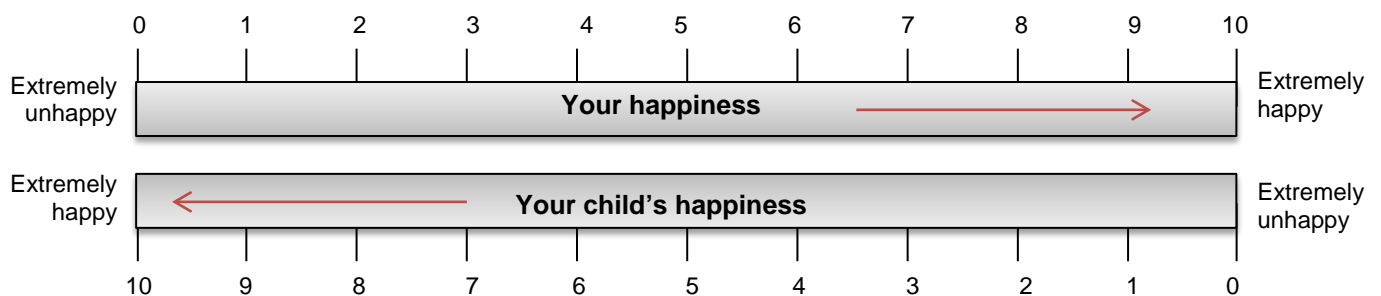
or

Your child's happiness

(If you don't have any children, please imagine that you do have them)

You may have to sacrifice time, money, independence or your career to increase your child's lifelong happiness.

How important to you is your own happiness compared with your child's happiness?



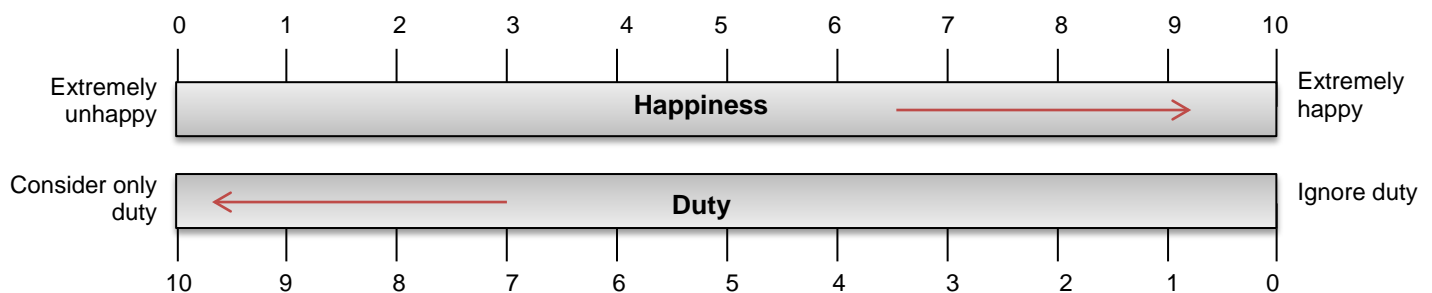
24. Which is more important:

Your happiness

or

Your duty to others

Behaving in a socially good way (eg paying taxes, obeying laws, giving time and money to charity, helping people) may make you personally worse off.



25. Which is more important:

Happiness

or

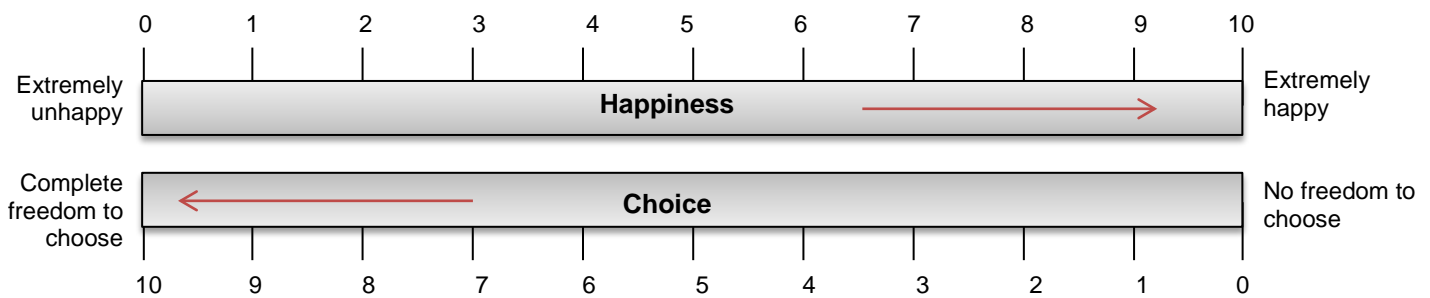
Freedom to choose

Sometimes choice allows us to be happy. At other times we make wrong choices. However, we may still value our right to make choices.

Would you prefer no freedom of choice, but complete happiness – every decision is made for you but so wisely that you could not be happier?

or

Would you prefer to be absolutely free to do whatever you wanted, when you always made the wrong choices and this made you miserable?



26. Which is more important:

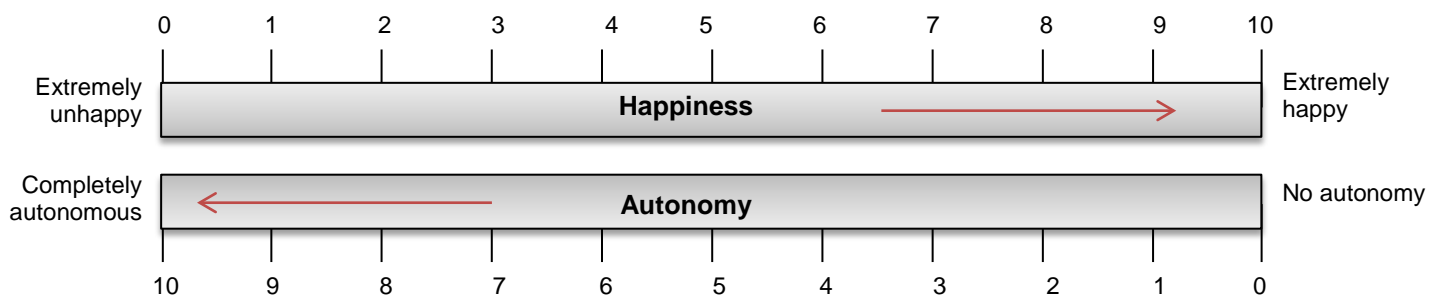
Autonomy

or

Happiness

Autonomy means you are capable of doing what you want. You have the knowledge, skills and ability to achieve your goals.

Being autonomous may make you happy. However, having the ability to achieve things does not mean that you will achieve them. You may be lazy or frustrated by having to do everything and unhappy with yourself for not achieving your goals.



Part G

Choice

Choice puts you in control of what happens to you.
It may result in better outcomes for you.

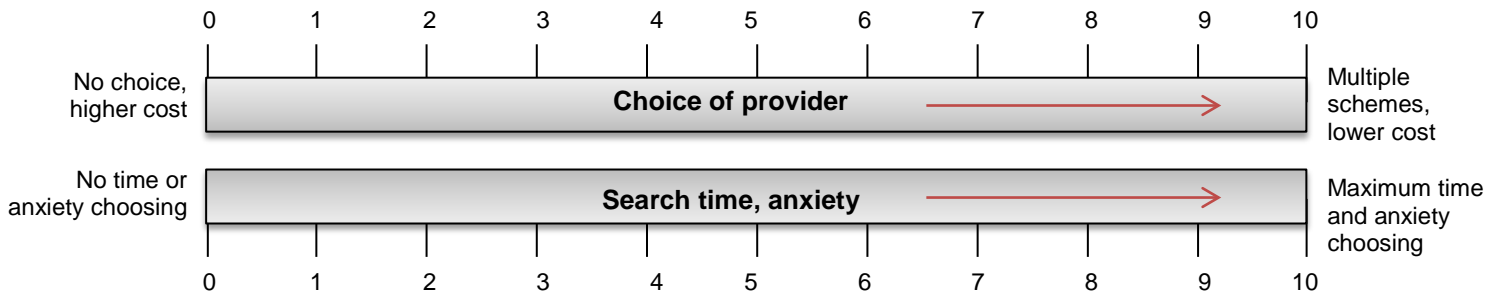
However you may face too many choices which are complex so you make mistakes. This may make you anxious about making choices.

27. Choice of provider: electricity, gas, water, telephone
Which is important:

Maximum choice: you select a scheme which suits you from multiple schemes and multiple providers

or

No time or anxiety over choice – single provider, services cost slightly more.

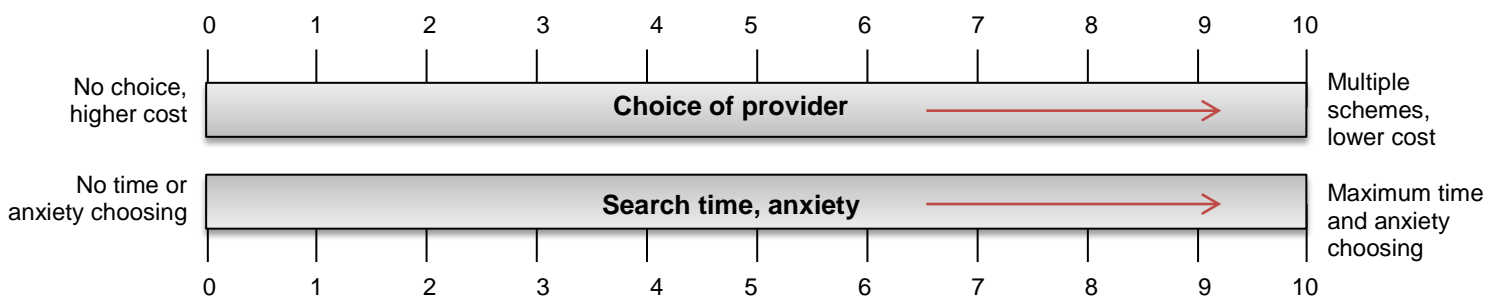


28. Financial choices
Which is more important:

Maximum choice: Multiple banks, investment and superannuation funds and life insurance

or

No time or anxiety over choice - Single provider, services cost slightly more

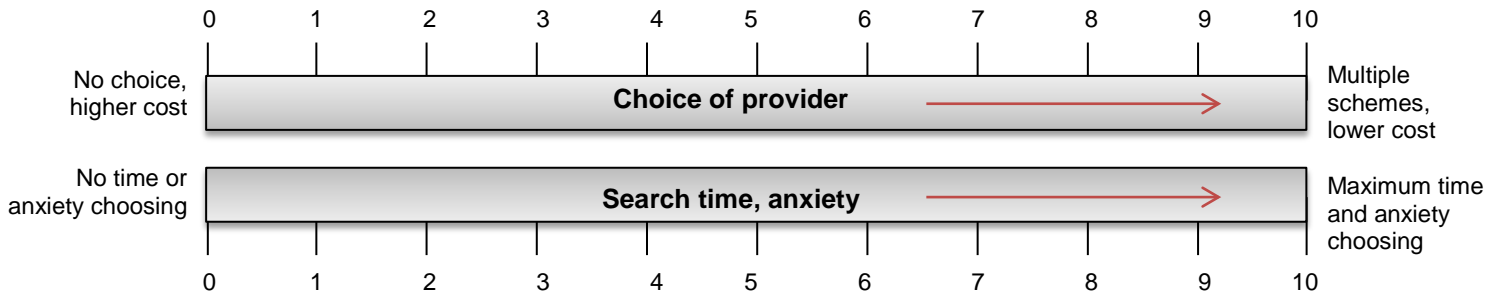


29. Financial cost of health care (if Medicare did not exist)
Which is more important:

Maximum choice: multiple schemes with different levels of cover; less cover (you pay more when sick) means a lower cost insurance

or

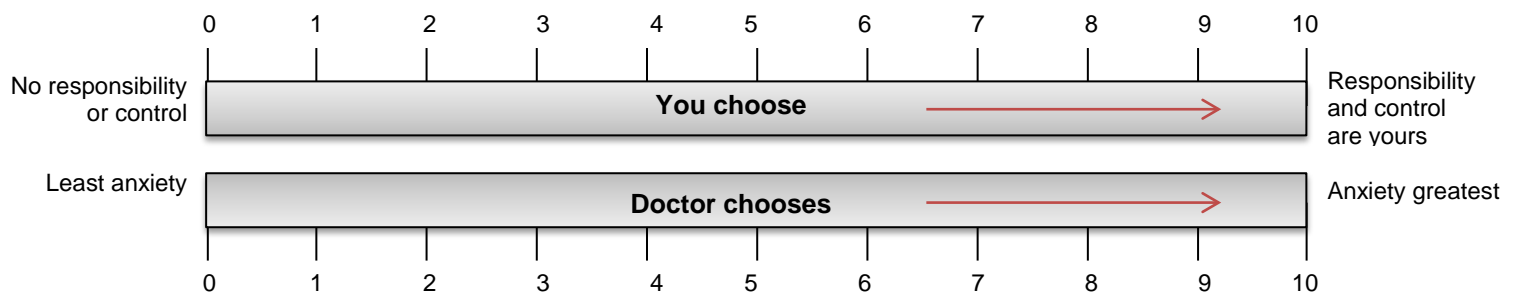
No time or anxiety over choice - fixed cover, fixed cost



30. Choice of medical treatment

Control events *or* Reduce anxiety

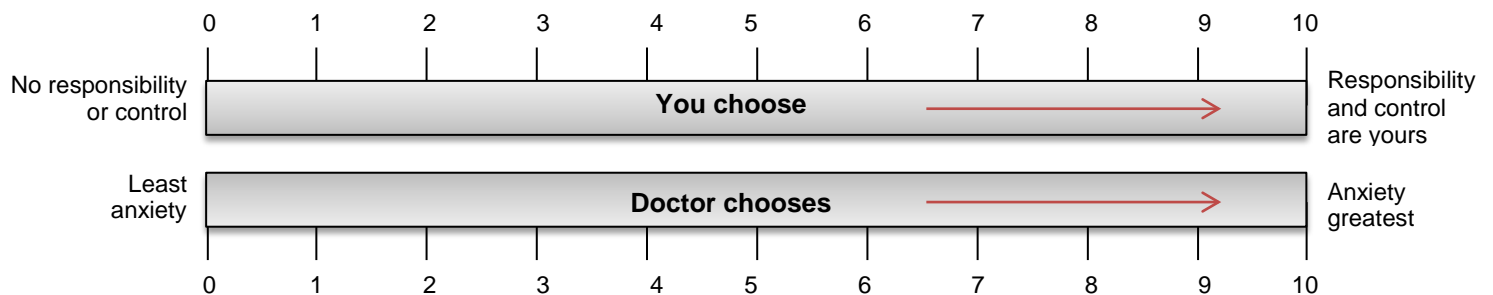
Sometimes alternative treatments are available (eg drug, radiotherapy, surgery). It is often unclear which treatment is best choice.



31. Choice of drugs

Control events *or* Reduce anxiety

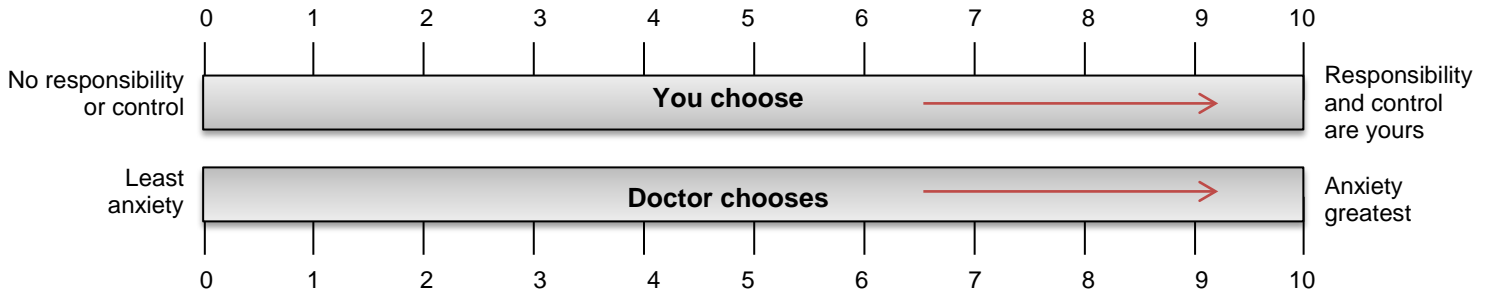
Different drugs have different side effects. Choice may cause anxiety if the choice is difficult and important



32. Choice of hospital/doctor

Control events or reduce anxiety

Suppose you were allowed to select your own doctor to carry out an operation

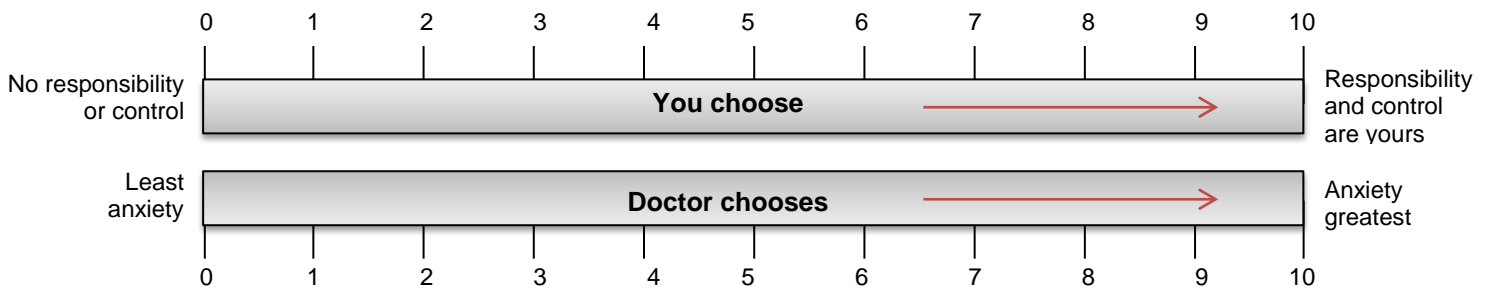


33. Choice of quality of care

Control events or Reduce anxiety

Suppose you could buy more or less care or pay a fixed price and let the doctor select the type of care you get.

Buying care means you can pay less than the fixed price or pay more and possibly get better care.



34. Who would you prefer in government

- Labor
- Liberal/National
- Greens

35. What is your postcode?

36. Are you

- Married or living with a partner
- Single: never married
- Single: widowed
- Single: divorced or separated
- No answer

37. Do you have children?

- Yes
- No

38 Child = yes then

How many children do you have?

- 1
- 2
- 3
- More than 3

39. What is your cultural background? (Select one answer only)

- Aboriginal/Torres Strait Islander
- Anglo-Saxon
- Asian
- European
- Pacific Islander
- Latin American
- Maori
- African
- South Asian (India/Bangladesh, Pakistan, Sri Lanka etc)
- Middle Eastern
- Other:

40. Religion:

- Christianity
- Judaism
- Islam
- Hinduism
- Buddhism
- No religion
- Other:

If 40 = Christianity then:

41. Church *Which Christian church do you belong to?

- Anglican
- Roman Catholic
- Orthodox
- Protestant
- Other:

42. Do you follow the teachings of your religion?

- It plays a major role in my life
- It plays a somewhat major role in my life
- It plays a somewhat minor role in my life
- It plays a minor role in my life
- It plays an insignificant role in my life

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