Justifying the Use of Economic Insights in Ordinary Decisions

James N. Morgan,[1] University of Michigan

The benefit-cost approach to economic choices turns out to require only four basic rules, though they imply also a principle, namely that only the future really matters, not the past. The four rules are: (1) ***convert all values to the present times****; (2)* ***reduce all values for uncertainty****; (3)* ***all values must be aftertax****; (4)* ***non-money costs and benefits should be considered****. These rules are explained, and illustrated by working through the most difficult of economic choices: deciding how much to save.*
KEY WORDS: *benefit-cost, economic insights, rational choices, retirement planning*

Introduction

There are economic insights or principles relevant to almost any economic decision. Much recent research shows how far most people depart from these norms (Kahneman & Tversky, 1972, 1973, 1979, 1981; Loewenstein & Prelex, 1992; Harless, 1992; Coleman & Fararo, 1992; Nye, 1992; Tversky, Slovic & Kahneman, 1990; Lovallo & Kahneman, 1993; Zey, 1992). It is relatively easy to teach each of them, and for people to apply each one in making decisions (Nisbett, Larrick & Morgan, 1990). Difficulties appear when more than one must be applied. Also, for each one a question arises whether some simpler rule of thumb, satisficing rather than maximizing, wouldn't do just as well. We explain and illustrate each rule, remembering that they fit into a process of benefit-cost analysis that compares a few best alternatives.

A first general principle is that **only the future matters**. Past costs or benefits are irrelevant unless they help predict the future. "Sunk costs" are sunk. It may pay to throw good money after bad, since the term "bad money" refers to past losses which cannot be eliminated anyway. A car that has caused repeated repair bills may be expected to cause more and deserve replacement, but it may also have had most of the periodic replacements done (muffler, brakes, struts, tires) and be good for many a carefree mile. People often base their annual housing cost on what they paid for it, but the real cost from now on is indicated by the home's present value. The past capital gain is there whatever the future.

A second general principle is that **the net benefit of each alternative must be compared with the total amount involved**, i.e., some kind of rate of return is needed. A simple approximation to the rate of return is the net benefit per dollar committed. The most sophisticated calculation is to estimate the interest rate at which the present value of the future streams of benefits and costs of each alternative is zero, the so called "internal rate of return". The California Department of Insurance issued in 1994 regulations requiring life insurance companies to reveal such a number, which they call the annual yield, the implied interest return on the saving part of life insurance policies (For background, see Zelman, 1991). Customers can then compare life insurance policies with different amounts of saving, and compare them with other more flexible ways of investing their savings.

There are specific rules which imply the general principles, and are what must be checked against each decision.

Specific Rules: Discounting

The first specific rule is that all calculations have to be at some point in time, since a dollar now is worth more than a dollar later (it can earn interest), and the simplest time to use is right now. Everything must be converted into "present value", discounting the future at a reasonable interest rate. (The past is ignored!)

But what about inflation? Here, there is a generalization that makes the analysis simpler, one of the few that can be trusted: Market interest rates tend to be 3% plus the rate of inflation.[a] This means that

[1]*James N. Morgan, Research Scientist, University of Michigan, Institute for Social Research, P.O. Box 1248, Ann Arbor, MI 48109. Phone: (313) 764-8388. FAX: (313) 747-4575. Email: jnmorgan@umich.edu.*

converting everything into present values by discounting at 3%, we will get the right answer, provided it is possible to earn 3% plus the rate of inflation on all funds invested.

Expected Values of Uncertain Outcomes

A second rule deals with uncertainty. Any uncertainty that can be given a numerical probability can be handled by multiplying uncertain costs or uncertain benefits by that probability, making them "expected values". The first two rules then give discounted expected values. For example, the dollar value of a college education is the present value of the extra earnings it is expected to produce, times the probability that one will finish college and really get them.

When there are several alternative outcomes, one can add their expected values, since the individual probabilities of the alternatives add to 1.0. So the value of graduating from high school rather than dropping out is the present value of the extra earnings with a high school degree times the probability that one goes no further, plus the value of the extra earnings if one goes on to college times the probability that will happen, etc.

After Taxes

Third, there are taxes, so all values must be after taxes. The relevant number is the marginal tax rate. Multiply any taxable benefits or tax deductible costs by one minus the marginal tax rate. The maxim that a penny saved is a penny plus taxes earned reminds us that to hire a house painter for $1000 requires that one first earn $1300 to have $1000 after taxes, and the painter only gets $1000 minus his taxes, a double tax on the division of labor. Similarly, the cost of a house must take into account that property taxes are deductible, so their cost is less, the higher one's income and marginal income tax rate (Morgan & Duncan, 1990). To assess the interest yield on the savings part of a life insurance policy, it is necessary to remember that the interest is not subject to income taxes.

Non-Money Costs and Benefits

Finally, there are non-money costs (depreciation, foregone interest on funds tied up, time used), and non-money benefits (free rent on an owned home, freedom from worry) which need to be converted into dollar approximations, a process called imputation, often using what are called opportunity costs. An example is the interest one could have earned on funds tied up in a car or house or life insurance policy. Depreciation is usually easy because there are market values of cars and houses of different ages, except that the real depreciation may be hidden by inflation. Since we do everything in current dollars, a house really depreciates at 2% per year, and a car at 25%. If there is inflation, then the increase in foregone interest offsets the decrease in dollar depreciation, so the sum of interest and depreciation costs is 3% plus the real depreciation rate, 5% for a house and 28% for a car. If a loan is involved, then part of the interest cost is paid, not just foregone, and is likely to be even higher. The value of the non-money (imputed) rent on an owned home can be approximated as 3% of the net equity (value minus mortgage principal) or a market rent minus utilities, insurance, and depreciation.

The value of time can be imputed at the after-tax wages one could earn, except for large amounts, where the rising marginal disutility of more hours used may matter. There is a technical problem of "selection bias" if people who do not work for wages are different in unmeasurable ways from those do. And where the unpaid work done produces something without a clear market value (child care) there may be selection bias in the other direction, if people who really love children are more likely to spend their time taking care of them. But the big errors come from ignoring the time costs. Even deciding how much to shop around for something involves a decreasing likelihood of saving more against an increasing value of the time devoted to shopping.

Unmeasurable Considerations

Of course there are benefits and costs that really have no estimable dollar value. What the benefit-cost analysis does is to convert as much as possible into comparable dollar units. One can then decide a new car is desirable, even if it does cost a lot more than keeping the old one.

Implementation

The four rules combine to call for: Discounted Expected After-Tax Dollar Benefits-Costs, producing a dismal acronym DEAD. Aren't there simpler rules of thumb that can avoid real mistakes and save not only time but scarce intellectual energy?

Unfortunately, the answer is "rarely". Most rules get obsolete as the world changes. "Never spend more than twice your annual income on a house". (When house prices and income are rising rapidly?) Buy a new car when the repair expenses get larger than the payments on a new one? (What about the depreciation which is getting smaller every year?) "Buy a house if the mortgage payments are no larger than your rent". (Mortgage payments ignore depreciation and utilities, but include repayment of principal which is saving.)

When press photographers of old had to do five things before taking each picture (rewind the flash gun, replace the flash bulb, wind the film, wind the shutter, and focus) they did the steps rhythmically and in the same order each time so as not to omit one and spoil the picture. Perhaps the same habit of going through the DEAD acronym to check each decision would help.

An Application: Setting Saving Goals

The 3% rule means that one simple table, or an inexpensive calculator is required, as in Table 1. So saving $1000 a year for 45 years will produce $92,700 not just $45,000, and in real dollars, and that sum will provide a lifetime annuity for an expected lifetime of 20 years of 92,700 x .067 or $6210.90 per year. If there is inflation, the accumulations will be greater, and the fraction per year for an annuity will also be greater, the real result remaining the same, provided of course that you can earn market interest rates equal to the rate of inflation plus 3%.

Calculating a Goal for Savings/Income

Suppose the goal is to provide the same consumption after retirement as before. The expected pension will be M1 times M2 times the annual amount saved. Since the present level of consumption is measured by income minus saving:

Desired Consumption in Retirement = Current Income - Current Saving

Potential Pension = (Current Saving)(M1)(M2)

Substituting the potential pension for the desired consumption in retirement, we have:

Current Saving(M1)(M2) = Current Income - Current Saving

Dividing by current income and grouping, we have:

Saving/Income + Saving(M1)(M2)/Income = 1(Saving/Income)(1+(M1)(M2)) =1

Saving/Income = 1/(1+M1M2) = Saving Goal

Table 1
Annuities and Compound Interest (at 3%)

	M3		M1	M2
Years	Future Value of $1 Now	Present Value of $1 Later	Multiple of Annual $1 At End of Period	Fraction of Initial $1 Available as Yearly Annuity*
5	$1.16	$0.83	5.3	.218
10	1.34	.74	11.5	.117
15	1.56	.64	18.6	.084
20	1.81	.55	26.9	.067
25	2.09**	.48**	36.5	.057
30	2.43	.41	47.6	.051
35	2.81	.36	60.5	.047
40	3.26	.31	75.4	.043
45	3.78	.26	92.7	.041
50	4.38	.23	112.8	.039

*A joint and survivor annuity with two-thirds income level for a survivor costs roughly the same as a single lifetime annuity on the longer of the two lives. For yearly detail, see Appendix Table 1.

**Funds double at compound interest when the interest rate times the number of years reaches 72.

Appendix Table 1 gives value of this term for various values of years till retirement and life expectancy after retirement. Moving diagonally on the table will show how important age of retirement is, and moving vertically shows the effect of delaying the start of a saving program. If income changes, the stream of potential added income can be treated separately, and the fraction of it to be saved estimated using the new, smaller, number of years till retirement.

There are two more steps before a goal for active saving can be set: adjusting for already accumulated savings, and adjusting for compulsory and largely invisible saving programs like Social Security and company pensions.

If there are assets net of debts already accumulated, then there will be an additional pension from that. How estimate the value this present net worth will have at retirement? First estimate the present value of stocks, bonds, bank accounts, IRA's, and house equity (value minus mortgage principal now). This total present net worth (except for the house) will then accumulate compound interest at 3% till retirement, using any compound interest table, calculator, or the M3 column of Table 1. Calling present net worth NW, at retirement it will be worth NW(M3), which will provide a pension each year of NW(M3)(M2). The house will not accumulate interest; indeed it will depreciate. One solution is to treat current equity (value minus remaining mortgage) as an amount that will still exist at retirement, and include annual increases in that equity as part of saving.

Now we can re-estimate how much needs to be saved from now on, and express it as a fraction of current income. Again assume the present level of consumption is to be maintained after retirement: less commuting but more travel, less power lunches but more medical care. Since the present level of consumption is measured by income minus saving:

Desired Consumption in Retirement = Current Income - Current Saving

Potential Pension = (Current Saving)(M1)(M2) + (Current Net Worth)(M3)(M2) + (Home Equity)(M2)

If the potential pension is to be equal (in constant real dollars) to the present consumption level, a little algebra shows:

Current Income - Current Saving = Saving(M1)(M2) + NW(M3)(M2) + HE(M2)
(Desired retirement income) (Potential ret. inc.)

Saving + Saving(M1)(M2) = Income - NW(M3)(M2) - HE(M2)

Saving(1+M1M2) = Income - NW(M3)(M2) - HE(M2)

Saving = Income/(1+M1M2) - NW(M3)(M2)/(1+M1M2) - HE(M2)/(1+M1M2)

Saving/Income = 1/(1+M1M2) - (NW(M3)(M2)+(HE)(M2))/((1+M1M2)(Income))

Note that the main term, 1/(1+M1M2), appears twice, the second time to reduce the saving goal to take account of current net worth (See Appendix Table 1). A previous article contains an error in the treatment of current net worth (Duncan, Mitchell & Morgan, 1984).[b]

Allowing for Contractual Saving

But all this overlooks the involuntary saving through company pensions and Social Security. Estimates of the fraction of income going to them need to be subtracted from the active saving goal.

It is easier to work with fractions of income, since alternative sources of retirement income are usually built up by income withholdings or payments of some fraction of income. We must assume that both are honest systems.

Social Security will provide an approximate accumulation of retirement rights worth 9% of income (the fraction of Social Security tax plus withholding that goes for retirement). So that is already being saved and can be subtracted from the active saving goal.[c] At very high incomes the contributions to Social Security stop increasing, so the fraction of income going into retirement equity starts falling. Also, Social Security is actuarially unfair, reducing benefits more than properly for those who retire before 65, and many company pensions are unfair the other way, penalizing those who don't retire early. If there is an employer pension, it is possible to find out whether 5 or 10% of salary is also going into a pension fund, assume it is honest, and subtract that from the saving goal.

Adjustment for Changes

Changes in real income that come after the initial calculation can be treated as a separate new flow of income. The fraction of the increase to be saved can be estimated on the basis of the remaining number of years to retirement. Since the expected assets at retirement do not change, only the term 1/(1+M1M2) with the new M1 gives the fraction of the increase in income that needs to be saved (Again, see Appendix Table 1).

Windfall gains like inheritances, or losses, can be used with the second term to adjust saving goals. Changes in age of retirement have huge effects on the required saving, as can be seen by moving diagonally in Appendix Table 1. Indeed, if life expectancy goes up by two years, one can handle it by retiring one year later!

The only other complication is in setting consumption goals in retirement. It may cost less without commuting and business lunches, and business dress, but medical bills and travel may increase. The fact that consumption can be a larger fraction of income since there is no longer a need to save for retirement, is already built into the calculations. Saving works three ways: it accumulates funds, the funds earn interest, and saving restricts current consumption so one does not get used to levels that cannot be maintained later. But those who can get along on less can simply reduce the total fraction saved proportionately.

The fraction 1/(1+M1M2) can be calculated for any set of accumulation and decumulation periods, and is given in detail in Appendix Table 1. Even a pocket calculator such as a Texas Instruments Business Analyst will produce the M1 and M2 numbers.

Estimating Active Saving for Comparison With the Goal

The simple part of active saving is the increase in the amount in fixed valued assets like bank accounts, IRA's and similar retirement funds. For stocks and bonds and real estate, since we deal in real terms and do not count capital gains from inflation, it is net funds put in that represent saving, i.e., purchases and reinvested interest or dividends minus sales. Then add the increase in the cash value of life insurance policies. Finally, for depreciating assets like house and car, the appropriate saving estimate is new purchases minus sales, minus depreciation, plus repayment of principal of debt (mortgage and car debt). The same applies to recreational vehicles, boats, summer homes, and for the meticulous, to appliances (See Morgan & Juster, 1991, 1994). The other saving, through Social Security and company pensions, was subtracted from the goal, at least in part because those amounts are mostly not included in measured income either. For some lucky or clever persons with capital gains regularly beyond simple inflation, the extra could be counted as saving.

Implications

Four rules properly applied can guide a proper benefit-cost analysis, or even handle such a complex task as deciding how much to save. Consumer protection may need some improvement, and better disclosure legislation is needed in many areas, but it is also essential that people understand each of the four rules imbedded in the DEAD acronym, because at least some of them are involved in every crucial decision consumers make. The discounting in the retirement case is of steady streams, and the expected value of uncertain events includes an expected lifetime, but no really new principle is involved. Insurance involves expected values of possible losses, and opportunity costs of funds tied up in insurance reserves. It should be of some comfort to consumers to know that there is a limit to the number of ideas they need to understand. A wave of recent writing casts doubt on the notion of rational cost-benefit behavior, not just as a description of actual behavior, which it is not, but as a useful norm (Thaler, 1991; Loewenstein & Elster, 1992; Nisbett, 1993). If we could learn how to improve lay understanding of these relatively few economic insights, cost-benefit analysis might be seen both as more useful and more descriptive.

Endnotes

a. *As far back as Fisher in 1896 and later books (Fisher, 1930) developed the idea that the real interest rate (for a financial asset of particular liquidity and risk) tends to stay relatively constant in the long run. Fisher (1930, p. 176) proposed that the real interest rate was determined by human impatience and investment opportunities. In terms of financial assets that a typical household might purchase, corporate bonds had an annualized real rate of return of 2% between 1926, and large stocks (S&P 500) had a real return of 6% (Ibbotson, 1995). A retirement fund with a conservative mix of 75% corporate bonds (real rate of return of 2%) and 25% stocks (real rate of return of 6%) might produce an after inflation rate of return of 3% per year.*

b. *A simpler way, since we take account of depreciation in estimating actual saving, is to convert all current net worth including the house to a potential annual annuity starting now, i.e., for the current life expectancy, using M2 of Table 1. That fraction of income can be deducted from the saving goal.*

c. *The true evaluation of the retirement part of Social Security is the internal rate of return, the rate that makes the present value of the expected streams of of contributions and pension payments equal zero. That rate was an enormous 35% for the first beneficiaries during the great depression of the thirties, has dropped to 4% for those currently retiring, and without any further changes not committed, will drop to 1.7% by the middle of the next century (Leimer, 1995). Clearly, it cannot fall further, so if current contributions of some generations do not match the benefits to others, the difference should go into or come out of the general taxes involving all of us. Economists have been too entranced by the algebra that shows a "pay as you go" system can seem to provide an internal rate of return equal to the rate of growth of the labor force plus the rate of growth of real average earnings.*

Appendix

Comparing Saving with Some Normative Saving Goal

The fraction of income that should be saved (not consumed) depends on the expected number of years of saving till retirement and expected years of retirement (life expectancy minus years of saving), adjusted downward for wealth already accumulated. Assuming one can earn competitive market interest rates on savings, which tends to be about 3% plus the rate of inflation, we can use 3% and count everything in today's dollars.

Appendix Table 1 is based on the assmption that consumption is to be spread evenly over the lifetime. (After retirement there is less commuting and lunches out and good clothing, but more travel and medical expense.) Going down the diagonal, where there are twice as many total years as years of retirement, the fraction to save drops from 50% to 24% with more years to earn interest on the accumulating or remaining balances. Increasing the relative number of retirement years by moving to the right never leads to saving goals of 100% because saving reduces the standard of consumption that needs to be maintained. Retiring earlier moves one diagonally upward in Table 1, radically increasing the required saving with less years to save, less interest earned, and more years of retirement.

One can use Appendix Table 1 directly when starting out in one's earning life, or to decide what fraction of any permanent *increase* in one's income needs to be saved.

Already accumulated wealth, aside from reserves for children's education or other intermediate purposes, is an alternative source of retirement income, and clearly reduces the amount that needs to be saved in the future. The simplest approach is to think of already accumulated wealth as providing a separate stream of consumption starting now and continuing for life. Hence, we can calculate its annuity value now and taking it as a percent of income, deduct it from the saving goal of Appendix Table 1. The top row gives the annual pension per dollar of initial wealth, using one's total expected lifetime. So current net wealth times that fraction, divided by income, can be deducted from the saving goal.

The first row of Appendix Table 1, using years of life expectancy, also tells how much of any one-time windfall, including capital gains beyond mere inflation, can safely be consumed each year from then on, and hence by how much the saving goal can be further reduced.

Changes in permanent income are easy to handle: If income goes up permanently, then the fraction of the increase that needs to be saved is what would spread the increment over your remaining lifetime, remembering that you earn interest on it in the meantime, so the interior of Appendix Table 1 applies without correction.

Life expectancies rise with age, but one can conservatively use 85 for men, 90 for women. Years of retirement expected are then that life expectancy minus age of retirement. In the case of a couple, the longer of the two expectancies would handle the cost of a "joint or survivor" annuity that paid 2/3rds to the survivor.

One should subtract from the saving goal in Table 1:

A. The 9% of salary representing the 60% of the 15.3% in Social Security taxes paid by employer or withheld that go to provide retirement benefits. (Or 60% of twice the withheld Social Security taxes, in case income is above the maximum that is taxed).

B. Contributions by employer and/or employee to a company pension, often 5% or 10% of salary.

C. Immediate annuity value of wealth, and increases in wealth from inheritances, or from capital gains that exceed inflation.

All these are divided by full income (not just salary) and that fraction subtracted from the saving goal.

Appendix Table 1
Saving/income Goal to Spread Future Income over Income and Retirement Years

Years of Accumulating Savings		Years of Receiving Annual Pension (Annuity) Payments											
		5	10	15	20	25	30	35	40	45	50	60	70
A*	P*	.218	.167	.084	.067	.057	.051	.047	.043	.041	.039	.036	.034
5	5.31	.46	.62	.69	.74	.77	.79	.80	.81	.83	.83		
10	11.46	.29	.44	.51	.57	.61	.63	.65	.67	.68	.69		
15	18.59	.20	.32	.39	.44	.49	.51	.53	.56	.57	.58		
20	26.67	.15	.24	.31	.36	.40	.42	.44	.47	.48	.49		
25	36.46	.11	.19	.25	.29	.32	.35	.37	.39	.40	.41		
30	47.58	.09	.15	.20	.24	.27	.29	.31	.33	.34	.35		
35	60.46	.07	.12	.16	.20	.22	.24	.26	.28	.29	.30		
40	75.40	.06	.10	.14	.17	.19	.21	.22	.24	.24	.25		
45	97.92	.04	.08	.11	.13	.14	.17	.18	.19	.20	.21		
50	112.80	.03	.07	.10	.12	.13	.15	.16	.17	.18	.19		

*a is value at end of period of $1/year saved; P is pension per year per $ in a at beginning (or consumption per year of wealth; If years are total life expectancy). So expected pension is saving times a times p.

If income-saving=consumption now and pension=consumption later Income minus saving = saving times a times p So: saving/income= 1/(1+ap) which is in the table.

References

Coleman J. S. & Fararo, T. J. (Eds.). (1992). *Rational choice theory: Advocacy and critique.* Newbury Park, CA: Sage.

Duncan, G. J., Mitchell, O. S. & Morgan, J. N. (1984). A framework for setting retirement savings goals. *Journal of Consumer Affairs, 18*, 22-46.

Fisher, I. (1930). *The theory of interest as determined by impatience to spend income and opportunity to invest it.* New York: Macmillan.

Harless, D. W. (1992). Actions versus prospects: The effect of problem representation on regret. *American Economic Review, 82*, 634-649.

Ibbotson Associates. (1995). *Stocks, bonds, bill, and inflation 1995 yearbook.* Chicago: Ibbotson Associates.

Kahneman, D. & Tversky, A. (1981). The framing of decisions and the psychology of choice. *Science*, *211*, 453-458.

Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-291.

Kahneman, D. & Tversky, A. (1973). On the psychology of prediction. *Psychological Review, 80*, 237-251.

Kahneman, D. & Tversky, A. (1972). Subjective probability: A judgement of representativeness. *Cognitive Psychology, 3*, 430-454.

Leimer, D. R. (1995, Summer). A guide to Social Security money's worth issues. *Social Security Bulletin*, *58*, 3-20.

Loewenstein, G. & Elster, J. (Eds.). (1992). *Choice over time.* New York: Russell Sage.

Loewenstein, G. & Prelex, D. (1992). Anomalies in intertemporal choice: Evidence and an interpretation. *Quarterly Journal of Economics, CVII*, 574-597.

Lovallo, D. & Kahneman, D. (1993). Timid choices and bold forecasts: A cognitive perspective on risk taking. *Management Science, 39*, 17-31.

Morgan, J. & Duncan, G. (1990). The effects of inflation and taxes on the costs of home ownership. *Journal of Consumer Affairs, 14*, 393.

Morgan, J. & Juster, F. T. (1991). The saving behavior of American families: 1984-1989. *Enhancing Consumer Choice: Proceedings of the Second International Conference on Research in the Consumer Interest*. Columbia, MO: ACCI.

Morgan, J. & Juster, F. T. (1994). Factors affecting household saving behavior: An introductory analysis. In O. B. Papadimitriou (Ed.), *Aspects of Distribution of Wealth and Income*. New York: St. Martin's Press.

Nisbett, R. E. (Ed.). (1993). *Rules for reasoning*. Hillsdale, NJ: Lawrence Erlbaum Publishers.

Nisbett, R. E., Larrick R. P. & Morgan, J. N. (1990). Teaching the use of cost-benefit reasoning in everyday life. *Psychological Science, 1*, 362-370.

Nye, P. (1992). Consumer choice and the sunk cost effect: A debiasing framework. *In Proceedings of the Toronto*

Conference of the American Council on Consumer Interests.
Thaler, R. H. (Ed.). (1991). *Quasi rational economics*. New York: Russell Sage Foundation.
Tversky, A., Slovic, P. & Kahneman, D. (1990). The causes of preference reversal. *American Economic Review, 80*, 204-217.
Zelman, W. A. (1991). *The regulator as consumer advocate.* Recommendations for Strengthening the Consumer Protection Capacity of the California Department of Insurance. Office of Insurance Commissioner John Garamendi, 770 "L" Street, Suite 1120, Sacramento, Ca 95814.
Zey, M. (Ed.). (1992). *Decision making: Alternatives to rational choice models*. Newbury Park, CA: Sage Publ.

Morgan, J. N. (1995). Justifying the use of economic insights in ordinary decisions. *Financial Counseling and Planning*, 6, 45-52.

