3. Normative Criteria

3.1 Introduction

How do we as a society make decisions about protecting our natural environment?

If we are making normative statements, we need to consider our ethical point of view.

Economics approach focuses on individual preferences, assuming that the individual is the best judge of his or her own welfare.

Utilitarianism is the basis of social choice mechanisms used in economics. First we will describe, some alternative ethical viewpoints, including utilitarianism. Then we will discuss alternative social choice mechanisms.

Some of these notes are based on the text "Natural Resource and Environmental Economics" by Roger Perman, Yue Ma, James McGilvray, and Michael Common, which provides a good discussion in their chapter "Ethics, Economics, and the Environment."

3.2. Naturalist ethical view

- Contrast between humanism and naturalism

- Humanism: rights and duties are given exclusively to human beings as individuals on communities. No rights or responsibilities are given to non-human entities in and of themselves. But humans may care for animals, plants and ecosystems.

- Naturalist view – denies the primacy of humans – rights defined with respect to some natural system

- Aldo Leopold: Lived from 1887-1948. Studied forestry at Yale, Important influence in wildlife management and conservation in the U.S. "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." (A Sand County Almanac, 1970, p. 262) "The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land."

- "Deep ecology" ethic – We should not undertake any activity which will cause significant disturbances to ecosystems

- Immanuel Kant: German philosopher, Lived 1724-1804

- Kant's categorical imperative: An action is morally just only if it is done out of a sense of duty and based on a valid ethical rule. A valid rule is one that can be applied universally.

- One of Kant's categorical imperatives is the principle of respect for persons: no person should be treated exclusively as a means to an end.

- Watson extends this beyond humans to those creatures who have the capacity to act knowingly with regard to the welfare of others – applies to some higher animal species. (R.A. Watson, 1979, Self-consciousness and the rights of non-human animals, *Environmental Ethics*,**1**(2), 99.)

- Warnock would extend this principle of respect to all sentient beings. (Warnock, 1971, *The Object of Morality.*)

- How far do you go in granting intrinsic rights? Some extend rights to all living beings.

3.3.Libertarian ethics

- Humanist tradition

- Fundamental inviolability of basic human rights

- Actions that infringe on human rights cannot be justified by appealing to an improvement "social well being"

- John Locke: British philosopher. Lived from 1632-1734. An acquisition is just when what is acquired has not been previously owned, and the individual uses his/her own labour on it. This is the basis for just property rights.

- Nozick (1974): Lived from 1938-2002. American philosopher (Harvard University) When is someone entitled to own something? – "Whoever makes something, having bought or contracted for all other held resources used in the process, (…) is entitled to it." Any holding is a just holding if it was obtained through contracts between freely consenting individuals.

- Oppose the idea of justice based on consequences or outcomes.

- Government action is limited to maintaining the institutions required to support free contract and exchange. Should not be involved in actions which redistribute wealth.

- For a Libertarian view on environmental regulations: "Law, Property Rights, and Air Pollution", by Murray Rothbard, *Cato Journal*, Vol 2, Spring 1982.

3.4 Utilitarianism

- David Hume (1711-1776), Jeremy Bentham (1748-1832), John Stuart Mill (1806-1873) – all philosophers from England

- Modern normative economics is based on a particular version of utilitarianism

- Utility: an individual's pleasure or happiness

- Welfare economics: the social good – an aggregation of individual utilities

- Actions which increase welfare are right, actions which reduce it are wrong

- A consequentialist theory – differs from motivist theory

- Anthropocentric utilitarianism – only human beings count

- But note that Utilitarianism can accommodate strong preferences for environmental protection – i.e. biocentrism, sustainability

- The welfare of animals is considered only insomuch as it affects the utility of humans.

- Preference-satisfaction utilitarianism: the doctrine of consumer sovereignty – individuals decide what is good for them

- An alternative would be to have "experts" decide what improves well being

3.5. Social choice and the individual's utility function

- Social well-being is some function of the utility of individuals in society

- Utility of individual A is a function of that individual's consumption of goods and services:
- Cardinal utility

- Ordinal utility

- Demand theory is not based on cardinal utility

  - N people in society, $i=1,\ldots,N$
  - x represents the material good - a composite good
  - $\mathbf{x} = (x_1, \ldots, x_N)$, person i consumes x_i
  - e is environmental quality, same for everyone
  - Utility obtained by individual i from $(\mathbf{x},e)$ as $U_i(\mathbf{x},e)$
  - Utility function reflects an individual's preferences
  - Individuals attempt to maximize utility when faced with tradeoffs between x and e
  - U can accommodate the preferences of an environmentalist or someone who cares little about environmental issues
  - Altruism or concern for future generations: $U_i(\mathbf{x},e,U_j)$

X

e
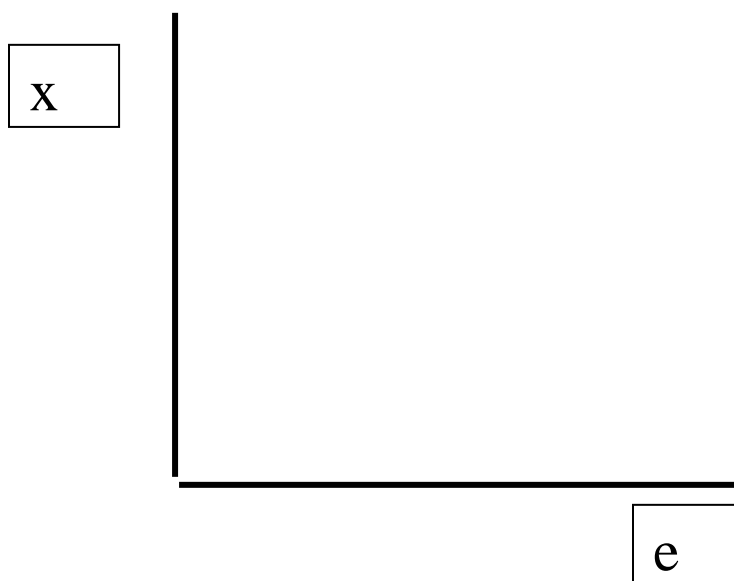
Draw a family of indifference curves that show that the environment becomes more and more important as the consumption of x increases.

Slope of the indifference curve reflects:

3.6. Social choice mechanisms

Consider two different bundles of the material good and environmental quality:
(**x'**,e') and (**x''**, e'')
Suppose **x'>x'',** but e'<e''**.**
How do you choose the best for society?
How do we construct group preferences out of individual preferences?

3.6.1 Pareto criterion
(named after Italian economist Vilfredo Pareto, 1848-1923)

Definition: A consumption bundle a'=(x',e') is preferred to another bundle a''=(x'',e'') if everyone is at least as well off with a' (compared to a'') and at least one person is better off.

   - requires unanimity

Consider a community with only 2 individuals shown in the graph below. Which points would represent a Pareto improvement compared to point A?

Baker's utility

A

Able's utility
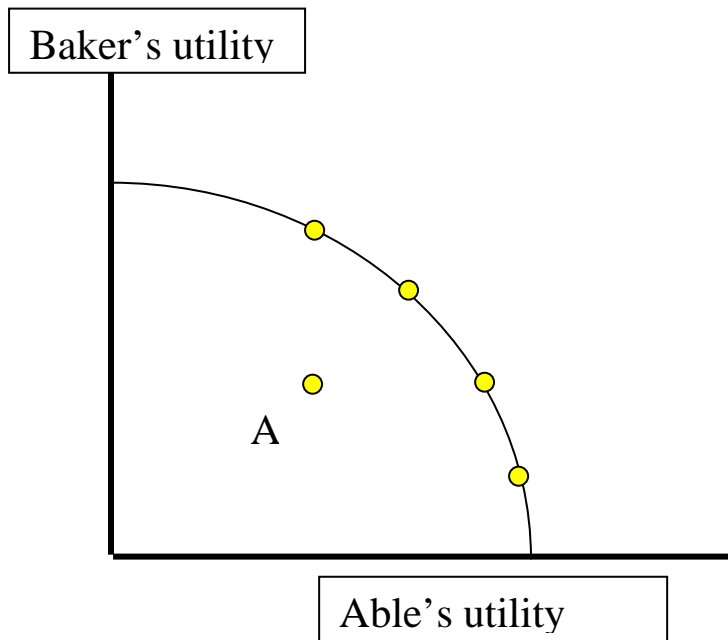
3.6.2 Potential Pareto Criterion: A policy should only be adopted if those who gain could fully compensate the losers and still be better off.

- define a tradable resource, such as money, **y**
- allocation (**x**,e,**y**) involves (x_i,e,y_i) for individual i
- a transfer among individuals involves a vector of payments to individuals, **z**, such that $\sum_i z_i = 0$
- We wish to compare (**a'**,**y**) and (**a''**, **y**) where **a**=(**x**,e).
- Suppose (**a'**,**y**) is not Pareto preferred to (**a''**, **y**), but it is preferred by most people
- Suppose there is some transfer among individual, **z,** such that (**a'**,**y-z**) is Pareto preferred to (**a''**, **y**)

In the graph below we cannot compare points A and B by the Pareto criterion. Could Baker transfer some resources (income) that are not represented in the diagram to compensate Able for utility lost in moving from A to B. Make side-payments to prevent Able's utility from declining.
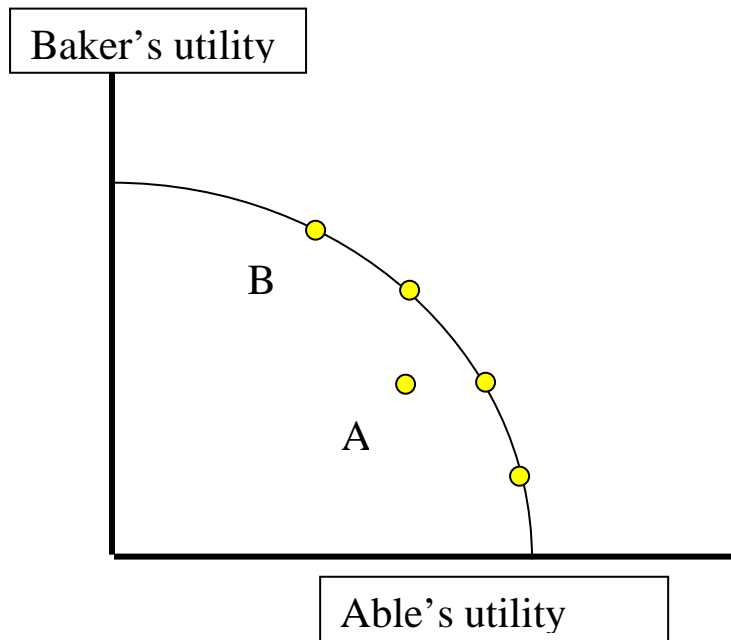
3.6.3 Kaldor Hicks Compensation Principle
-two famous economists Nicholas Kaldor (1939) and John Hicks (1940)
- don't actually have to pay the compensation
- decouple efficiency and equity criteria
- controversial

3.6.4 Voting
- majority rule – no account of intensity of preferences
- many other possible voting rules
- many societies have general statements of principles (i.e. in a constitution) which cannot be easily overridden

3.7. Social Welfare Functions (SWF)

- represent social choices with a societal utility function

- let W be a function that associates a single number with every distribution of utilities in society,

  $W(u_1(\mathbf{a}), \ldots, u_N(\mathbf{a}))$

- W represents society's utility with bundle **a** and it is some function of the utility of all individuals in society

- welfarism: Social ranking of different options depends only on individual preferences. Consistent with utilitarianism.

- Different possible forms:

  (a) Utilitarian: $W(u_1, \ldots, u_N) = \sum_i \theta_i u_i \quad \theta_i \geq 0$

  (note that Utilitarianism does not necessarily imply an additive SWF.)

  (b) Egalitarian:
  $$W(u_1, \ldots, u_N) = \sum_i u_i - \lambda \sum_i [u_i - \min_i(u_i)]$$

  (c) Rawlsian $W(u_1, \ldots, u_N) = \min_i(u_i)$

Utilitarian SWF

Sketch a utilitarian SWF [like (a)] in 'utility space' where all people are weighted equally.

Maximization of SWF such as (a) implies the marginal contribution to social welfare from each individual's consumption will be equal.

Under a utilitarian social welfare function social welfare will be maximized with everyone having the same consumption level only under restrictive conditions:

> a) The social welfare function is additive.
>
> b) The weights attached to individual utilities are equal.
>
> c) Utility functions of individuals are all the same.

Rawls theory of justice

- Rawls was an American philosopher at Harvard University who lived from 1921-2002
- Critique of adding up individual utility
- Original position and veil of ignorance
- In these circumstances people would agree on two basic principles
  - Equal right for all to most extensive basic liberties compatible with similar liberties for others.
  - The Difference Principle: Social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all.

- Difference principle implies that equality of position is best and deviations from equality are unjust except in special cases when all persons would benefit (or the least advantaged would benefit)

3.8. Social preferences and Arrow's Impossibility Theorem

Arrow (1951) asked the following:

Starting with knowledge of individual preferences over social outcomes, is there a general way of aggregating these into a social preference ordering that is reasonable?

Arrow's six basic requirements:

A1. Completeness: We should be able to compare all social alternatives.

A2. Unanimity: If everyone in society prefers **a** to **b,** then society should prefer **a** to **b.**

A3. Non-dictatorship: No one should always get their way.

A4. Transitivity: If **a** is preferred to **b** and **b** is socially preferred to **c**, then **a** is preferred to **c.**

A5. Independence of irrelevant alternatives: Society's choice between alternatives **a** and **b** should depend only on how individuals rank **a** and **b**, without regard to other alternatives.

A6. Universality: Any logically possible individual rankings of alternatives is possible.

Arrow's Impossibility Theorem: There is no rule satisfying A1 through A6 for converting individual preferences into a social ordering.

Arrow's axioms rule out interpersonal comparison's of utility.

There is no unambiguous way of making social decisions that maximize societal welfare – because we cannot measure and add up individual utilities.

A consequence of the fact that we cannot observe the intensity of preferences.

But decisions have to be made – often use Pareto criterion or compensation principle.

Doesn't voting solve the problem of how to determine social preferences?
- No because voting reflects preferences and the structure of voting rules
- Voting rules limit the number of votes each individual is allowed and how those votes translate into the ultimate decision
- No way to derive social ranking based on preferences alone, except for a dictatorship

3.9.Criticism of the Utilitarian Perspective
- i.e. the perspective that we make decisions for society based on preferences of individuals plus some social choice mechanism like majority voting or Pareto criterion
- Criticisms include:
(i)   Exogenous preferences – in reality preferences may be easy to change.
(ii)   We can't consider the preferences of all affected individuals
(iii)   Public policy should not be based on preferences, but on what is right.