

**Concepts of value:
a multi-disciplinary clarification**

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Section One

Introduction

1.1 Background

Both the Environment Act 1986 and the Conservation Act 1987 contain explicit as well as implicit references to "values" in the context of natural resource management. In the Environment Act 1986 for example, the Ministry for the Environment is charged with the responsibility of ensuring that "... in the management of natural and physical resources, full and balanced account is taken of (*inter alia*):

- (a) the intrinsic values of ecosystems; and
- (b) all values which are placed by individuals and groups on the quality of the environment" (Environment Act, 1986).

Such *explicit* references to "values" were generally avoided in earlier resource management legislation. In the Water and Soil Conservation Act 1967 for example, the difficult area of juggling different demands for water was dealt with by requiring that the National Water and Soil Conservation Authority which was established under the Act "... co-ordinate all matters relating to natural waters so as to ensure that this national asset is available to meet as many demands as possible and is used to the best advantage of both the country and the region in which it exists in the course of nature" (Water and Soil Conservation Act, 1967).

Such clauses provide decision makers with only very broad guidelines upon which they can base their judgements about resource allocation. These broad guidelines are refined and more specifically interpreted over time through the development of case law by the Courts and Planning Tribunals as a result of resource allocation conflicts, thus placing considerable responsibilities in the area of policy development on the judiciary.

However, the terms "value" and "values" as used in the Environment Act need to be interpreted too, since the Act does not provide a concise definition of what is meant by "value". If the Ministry is to develop policies that fulfil these explicit requirements, it is necessary to first focus attention on the *meaning* of any reference to "value" within the Act, because although the terms "value(s)" and "valuing" have a general, everyday meaning, they may acquire quite different, and very specific

meanings in a philosophical, socio-cultural or economic context. For example, the term "intrinsic value" may refer to a *property* of an object that is independent of a human evaluator, but it can also mean a special type of worth that is *assigned* to an object by human beings.

Secondly, methods for *revealing* values need to be explored. For example, which methods are available to inform decision makers about the values that Maori and Pakeha New Zealanders place on wetlands, recreational hunting, endangered species, air quality etc.?

Finally, processes and institutional frameworks need to be developed that allow for the integration of this "value information" with other physical, social, political and economic information so that the balance referred to in the Act can be achieved.

The Ministry for the Environment has given recognition to the difficulty of explicitly incorporating values into policy development and the design of institutional frameworks by including "Values clarification" as a major theme within their Research Agenda 1989-1992. Their stated research goals in this area are:

- (1) To clarify the interpretations of the term "values" and possible processes for meeting the related requirements stated in the Environment Act 1986 and any legislative outcomes of the Resource Management Law Reform.
- (2) To present the results of the research in an appropriate form for its application to policy development (Ministry for the Environment, 1989, p.35).

The present publication, which was commissioned by the Ministry for the Environment during 1988, sets out to provide an initial, multidisciplinary *clarification* of the concept of "value" as it is used in natural resource management, as a starting point for the Ministry's research programme on values. The following criteria were used in determining which of the vast number of different concepts of "value" should be included in this publication:

- (a) whether the concept was currently used in a resource management context; or
- (b) whether it was judged to be sufficiently important, be it in terms of its influence on developments in the field, its popularity, or its implications for the Ministry's research programme on values; or

- (c) whether empirical methods associated with the concept might be of use in the Ministry's research programme on values.

This study is multidisciplinary in character in that it draws on a range of disciplinary concepts; however, no attempt is made to synthesise these concepts nor to recommend any one particular concept above others.

1.2 Objectives

The objectives of this study are:

- (a) to describe, and provide clear distinctions between, the various concepts and related measures of "value" from the social sciences and humanities, as they are used in a resource management context;
- (b) to provide a typology of theories of value, for the purpose of guiding further analytical work;
- (c) to provide a selected bibliography on concepts of "value"; and
- (d) to raise some implications for the Ministry's research programme on values clarification.

1.3 Structure

Following this introduction, Section 2 contains a brief overview of the general usage of the terms "value(s)" and "valuation".

In Sections 3, 4, and 5, particular theories, concepts and measures of "value" in philosophy, the social and behavioural sciences, and in economics are described, and selected bibliographies are included.

Finally, the implications of the different concepts of "value" for the Ministry's research programme are discussed in Section 6.

Section Two

The general usage of "value"

The term value or values is used in a great variety of contexts and has many meanings in everyday language. Value can mean standards, beliefs, principles, moral obligations and social norms, but also desires, wants, needs or interests. Furthermore, value can also mean the worth, importance or significance of a thing or object of interest. This abundance of different meanings is not only found in ordinary speech, it is also evident in the usage of "value" in the social sciences and humanities.

A clear distinction needs to be drawn between two general senses in which the term is used (see e.g. Brown, 1984; Williams, 1968):

- (a) the evaluation of some object or phenomenon; and
- (b) the standards, or criteria, in terms of which such an evaluation is made.

Examples of the former are statements such as "this forest has a low commercial value", or "nuclear armament has a high deterrence value"; the emphasis lies on the *object* (the forest, nuclear arms) that is evaluated.

The latter sense can be exemplified by statements such as "an exotic forest plantation has a higher commercial value than a similar area of native forest", or "nuclear armament is ethically unjustifiable"; here, the emphasis is on the *standards* (commercial value, ethics) in terms of which the object is evaluated.

Thus, a clear conceptual distinction exists between an object that may *have* value, and the standards of evaluation (or value(s)) that are *held* by a subject; object and subject are linked by a process of valuation (Fig. 2.1).

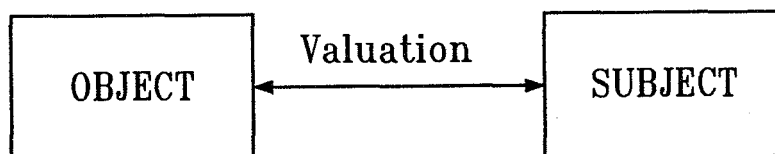


Figure 2.1: Valuation process.

In practice, the distinction between these two perspectives often becomes blurred, as the application of *standards* of evaluation immediately results in some object of interest *having* value; moreover, the value of an object may in turn serve as a standard of further evaluation.

Throughout this publication, the following terms will be used (where necessary) to distinguish between these two general senses of "value":

- *assigned value* or *object value* (standing for the result of an evaluation of an object or phenomenon);
- *value-as-criterion*, or *held value* (referring to the standards in terms of which an evaluation is made).

A simple but systematic classification of the multiple meanings of the term "value", distinguishing between the use of "value" as an *abstract noun*, as a *concrete noun*, and as a *verb* is provided by Frankena (1967, pp.229-230):

Value as an abstract noun

Value as an *abstract* noun is used in three different ways:

- (a) in a *narrow sense*, where it applies strictly to the good, the worthwhile, or the desirable;
- (b) in a *wider sense*; this extends "value" to the beautiful, the virtuous, the right, the true, the holy etc.;
- (c) in its *widest sense*, "value" covers all kinds of *critical* (evaluative) predicates.

Value as a concrete noun

Value as a *concrete* noun has two common usages; these correspond largely to the distinction between *object value* and *value-as-criterion*:

- (a) value refers to what *has* value or *is* valuable; thus one speaks of things that are good, right, beautiful, or even true (*object value*);

- (b) value refers to what is *valued*, *judged* to be of value, or *desired*; thus one speaks of "individual values", "Maori/Pakeha values", and "Christian values" (*value-as-criterion*).

Value as a verb

Value as a *verb* occurs in expressions like "to value", "evaluate" and "valuing". Depending on whether a narrow or wider interpretation of value (as *abstract noun*) is chosen, "to value" covers a narrow or wider range of evaluating acts. Thus, "to value" may refer only to judgements about the good and the worthwhile, or it may also cover judgements about beauty, truth and virtue.

A further differentiation is often made between two meanings of "to value": on the one hand, the term is used in the sense of "to like", "to desire" or "to hold dear", signifying an emotive response; on the other hand, it may be used in the sense of a reflective, conscious act of comparison, i.e., an act of cognition. The former, then, is referred to as *valuation*, the latter as *evaluation*.

Section Three

Theories and concepts of value in philosophy

The phenomenon of "value" has been a fundamental issue in philosophy from the time of Plato, although the common usage of the term "value" in philosophy extends only back to the nineteenth century. Before that time, value phenomena were discussed in terms of the good, the right, beauty, virtue, truth, obligation, moral judgement, aesthetic judgement etc. The recognition that all these separate concepts are based on the same underlying structure led to the development of "value theory" through the works of such eminent philosophers as Lotze, Meinong, von Ehrenfels, and later Scheler, Nicolai Hartman, Perry, Dewey and Pepper. The common ground of concepts such as the good, the beautiful, the right is that they deal essentially with what *ought to be*, rather than with what *is*. This distinction between value (what ought to be) and fact (what is) pervades all of the social sciences and humanities and is the subject of considerable debate, most recently in the area of policy analysis.

3.1 A typology of theories of value

The development of concepts and measures of value in philosophy, the social and behavioural sciences, and in economics is based on *theories* of value. In order to provide a foundation for the discussion of value phenomena, and to clarify the assumptions underlying different conceptions of value, this section presents a brief typology of theories of value. The typology is based on Gewirth (1985) who discusses normative and meta-normative theories from an ethical perspective, and Dunn's (1983) classification from a policy analysis perspective. The reader is referred to Figure 3.1 on the following page for a "visual" guide.

A primary distinction can be drawn between *descriptive*, *normative*, and *meta-normative* theories of value:

- (a) *descriptive* theories of value make statements about what *is* in the realm of value(s); for example, they seek to describe what values are actually held by a group of people. Descriptive theories of value are predominantly found in the social and behavioural sciences; in philosophy, descriptive statements about what is valued are usually ancillary to normative and meta-normative discussions (Frankena, 1967);

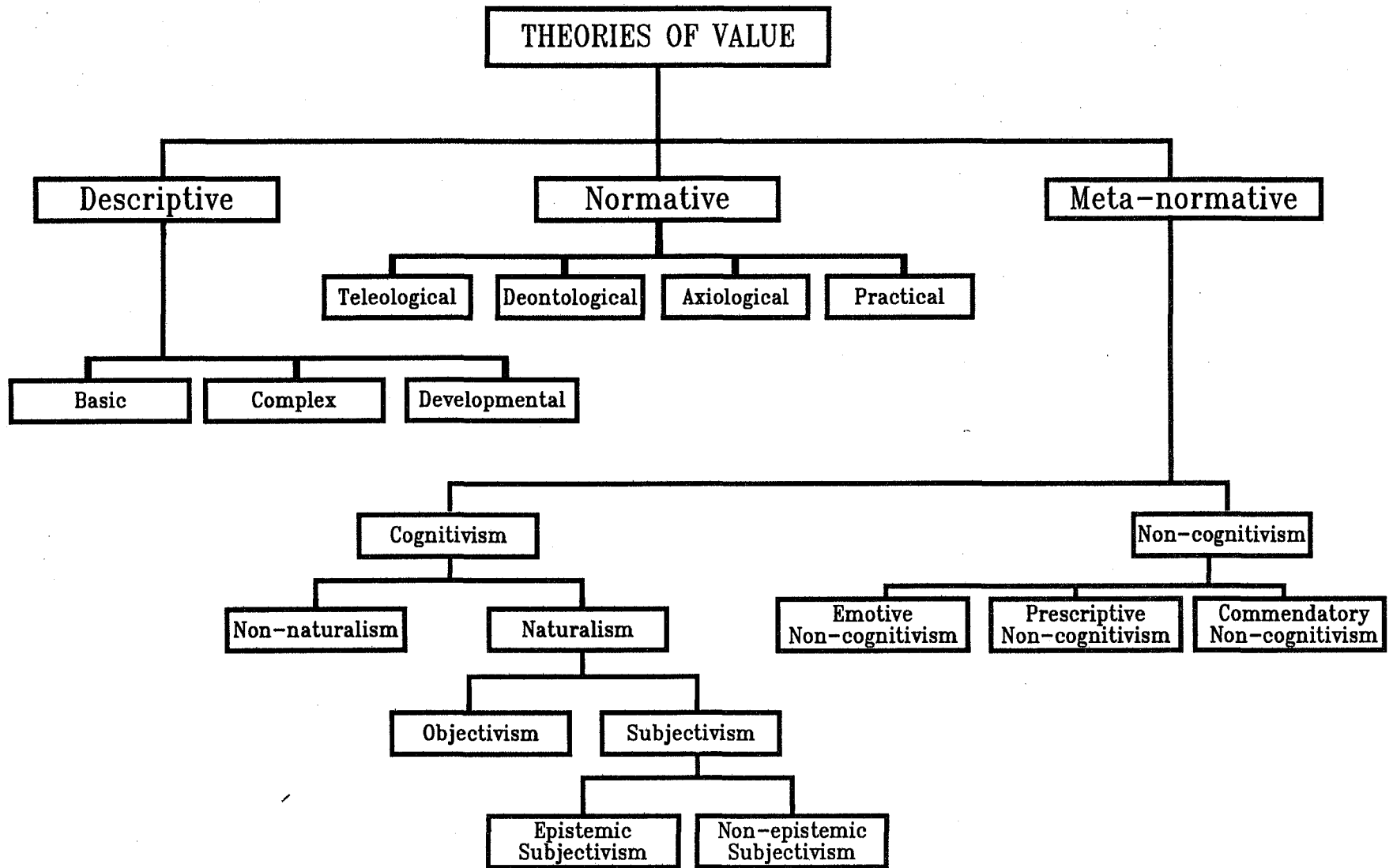


Figure 3.1: A typology of theories of value.

- (b) *normative* theories of value make judgements about what *ought to be* in the realm of values; for example, they make claims about what constitutes "just", "good", or "moral" behaviour for an individual as well as for society;
- (c) *meta-normative* theories analyse value and valuation; they define what "goodness" and value are, what it means to say that something is "good" or has value, and which criteria can be employed to evaluate normative theories. Thus, meta-normative theories provide the foundation for normative and descriptive theories of value.

3.1.1 Descriptive theories of value

Among the descriptive theories of value, one can distinguish between those that concern themselves with *assigned value*, and those that see *value-as-criterion* as their object of inquiry. The principal exponent of the former is the field of positive economics, whilst the latter provides the foundation for empirical value research in sociology, anthropology, psychology and social psychology.

Following Dunn (1983), this second group concerning itself with value-as-criterion can be further separated into theories employing *basic*, *complex*, and *developmental* value typologies.

3.1.1.1 Basic value typologies

Basic value typologies are characterised by the attempt to reduce the enormous range and complexity of human values (*value-as-criterion*) to a simple means-ends classification, i.e. human values are either oriented towards desirable end-states of existence, or towards desirable modes of conduct. This type of classification is exemplified by the work of Milton Rokeach (1968, 1973); he uses the labels "terminal" for ends-related values, and "instrumental" for means-related values (see also Section 4.3.1.4).

3.1.1.2 Complex value typologies

Complex value typologies use a greater number of classificational principles to provide a precise mechanism for discussing aspects of the phenomenon "value". An example of a complex value typology can be found in Rescher (1969); Rescher examines six main principles for classifying values:

- (a) classification by *subscribership*; by asking "who holds the value?", groupings such as *personal* values, *community* values, *professional* values, or *national* values can be obtained;
- (b) classification by the *objects at issue*; values are classified with reference to the object or class of objects to which they apply. Thus, one can distinguish between *object* values, *individual* or *personal* values, *group* or *societal* values, *environmental* values etc.;
- (c) classification by the *nature of the benefit*; values are classified according to the human wants, needs, and interest that are served by their realisation. Such categories are *aesthetic* values, *spiritual* values, *political* values, *economic* values;
- (d) classification by the *purposes at issue*; values may be classified according to the specific purpose served by the realisation of a benefit. Thus, we speak of *nutritional* value, *exchange* value, *deterrent* value, *truth* value;
- (e) classification by the *relationship between subscriber and beneficiary*; this yields e.g. the categories of *self-oriented* (or egocentric) values, *patriotic* values, *humanitarian* values, or *eco-centric* values;
- (f) classification by the *relationship between values*; some values can be viewed as systematically subordinate to others in that they facilitate the achievement of other values. Thus, one can distinguish between *instrumental*, *extrinsic*, or *means* values, and *terminal*, *intrinsic* or *end* values.

This kind of typology allows a very differentiated yet systematic analysis of value phenomena by emphasising the *perspective* from which "value" is observed. Note that the same value can be simultaneously classified in many different ways.

3.1.1.3 Developmental value typologies

Where changes in values (*value-as-criterion*) over time are the object of interest, a developmental typology like Kohlberg's (1961, 1983) stages of moral development is to be considered. Kohlberg suggests that the moral development of individuals as well as of societies follows six sequential stages:

<i>Stage 1:</i>	punishment and obedience orientation
<i>Stage 2:</i>	instrumental relativist orientation
<i>Stage 3:</i>	interpersonal concordance orientation
<i>Stage 4:</i>	law-and-order orientation
<i>Stage 5:</i>	social-contract legalistic orientation
<i>Stage 6:</i>	universal ethical principle orientation.

Because development through these stages follows sequentially and transitions can only occur between adjacent stages, Kohlberg claims that individuals cannot be expected to move directly from an egocentric market society (Stage 2) to a society based on universal ethical principles (Stage 6) (c.f. Dunn, 1983). This hypothesis may be of some significance for policy development that aims at changing societal values, e.g. in the area of environmental attitudes.

3.1.2 Normative theories of value

Normative theories of value make judgements about what constitutes "just", "good", or "moral" behaviour for an individual as well as for a society. On the basis of the criteria by which moral actions are evaluated, normative theories can be classified into four major types: *deontological*, *teleological*, *axiological*, and *practical* (or "good reason") theories of value.

3.1.2.1 Deontological normative theories

Deontological theories evaluate actions according to their inherent "rightness" which requires no further justification (*material* deontological theories), or on the basis of some formal principle (*formal* deontological theories). For example, John Rawls (1971) argues in his famous *Theory of justice* that a just society uses the maxi-min criterion as a social decision rule (maxi-min = society maximises the welfare of those who are worst off); however, it is not claimed that maxi-min is inherently "right" or "just", but that a group of people deciding on a social contract *without knowing what their social or economic position in that society would be* would choose the maxi-min criterion as a social decision rule. Thus, the normative criterion (maxi-min) is justified by a formal, universal principle (choice under a "veil of ignorance").

3.1.2.2 Teleological normative theories

Teleological theories evaluate actions according to the "goodness" of their outcomes. Probably the best known teleological theory is utilitarianism, originated by Bentham and J.S. Mill. Utilitarianism holds that a "good" action is one that promotes the greatest good for the greatest number of people; thus, the normative criterion is the "goodness" or "value" of the *consequences* of actions, as opposed to the inherent "rightness" of the action, or its conformity to some formal principle as in deontological theories. Teleological theories, and in particular the various forms of utilitarianism, are very important in a natural resource management context, as they provide the philosophical foundation of mainstream welfare economics (see Section 5.1).

3.1.2.3 Axiological normative theories

Axiological theories are closely related to teleological theories; both rely on "goodness" or value as normative criterion. However, axiological theories evaluate actions on the basis of their *inherent* goodness, as opposed to the (teleological) goodness of the *outcomes*.

The distinction between deontological and axiological theories is that (material) deontologists claim that some actions are inherently right or obligatory (Greek: *deontos*, "of the obligatory"), whereas axiologists base their claims on inherent goodness or value (Greek: *axios*, "worthy" or "valuable").

3.1.2.4 Practical normative theories

Practical or "good reason" normative theories emphasise reasoned discourse as criterion for a normative evaluation of actions. Actions are claimed to be "good" or "right" if they conform to some rules, or result in outcomes, that have been developed through reasoned discourse among those who develop moral rules, and those who are affected by them. These comparatively recent ethical theories (Baier, 1965; Habermas, 1970; Taylor, 1961; Toulmin, 1950) form the basis of some contemporary work in policy analysis dealing with the role of values and ethics in public policy (Dunn, 1982; Fisher, 1980), and in environmental ethics (Tribe, 1976).

3.1.3 Meta-normative theories of value

Meta-normative theories provide the philosophical foundation for normative as well as descriptive theories of value. Meta-normative theory addresses questions like: "is there ethical knowledge, and if so, of what kind is this knowledge?"; "can the truth of normative claims be determined?", or "what is the nature of the phenomenon *value*?".

Meta-normative theories can be divided into two major classes: *cognitivist* and *non-cognitivist* theories. The fundamental difference between these is their answer to the question: "do moral judgements constitute a kind of knowledge?" i.e. they differ in their assessment of the epistemological status of normative theories. *Cognitivism* holds that normative theories *do* constitute some kind of knowledge, and that normative claims can be true or false; *non-cognitivism* denies this. Both cognitivism and non-cognitivism can be further divided into several schools of thought that differ substantially in their assumptions about the nature of value phenomena.

3.1.3.1 *Non-naturalistic cognitivism*

There are two main schools of thought within cognitivism: *naturalism*, and *non-naturalism*. While both schools maintain that normative ethics *do* constitute some kind of knowledge, they differ in their assessment of the *nature* of this knowledge; *naturalism* maintains that ethical knowledge is not fundamentally different from empirical knowledge, and thus can be established by the same methods as those used in the natural and social sciences. In contrast, *non-naturalism* claims that ethical knowledge is quite distinct from other knowledge and cannot be revealed by scientific methods; moral terms such as "good" refer to non-natural properties of objects that cannot be defined. Thus, non-naturalism is essentially an *objectivist* doctrine. Because non-naturalists maintain that values are intuited through emotions, rather than revealed by scientific methods, they are frequently called "*intuitionists*". Most prominent among them are Plato, G.E. Moore, Scheler, and Nicolai Hartman; Moore's *Principia ethica* (1903) is a particularly well-known example of non-naturalistic cognitivism.

3.1.3.2 *Naturalistic cognitivism*

According to the naturalists, ethical knowledge can in principle be revealed and tested using scientific methods and empirical observation. However, some further distinctions within this school of thought can be made on the basis of their stance towards (a) the *source* of ethical knowledge, and (b) the *procedures* by which this knowledge is established.

Objectivist naturalism maintains that value, the "good", and the "right" are inherent *properties* of objects that do not depend on an outside observer. In contrast, *subjectivist naturalism* sees the source of value in the *interaction* between observer and the observed; it is thus meaningless to speak of "value" without a valuing subject.

Finally, opinions differ among subjectivists over the *procedures* by which (relational) ethical knowledge is revealed: *epistemic* subjectivism relies on *reflective evaluation* of interests, desires, and preferences, while *non-epistemic* subjectivism relies on the mere *expression* of interests, desires, and preferences.

Naturalists like the philosophers Dewey (1939) (epistemic subjectivism) and Perry (1954) (non-epistemic subjectivism) have had a strong influence on the developments in the social and behavioural sciences.

3.1.3.3 *Non-cognitivism*

As mentioned above, non-cognitivism maintains that normative theories do not constitute knowledge, and are thus not subject to verification or falsification. The question then arises about the meaning of a normative claim if it does not constitute some kind of knowledge. Several possible meanings are suggested by the non-cognitivists, the most important of which are *emotive*, *prescriptive* and *commendatory* (Dunn, 1983).

Emotivism states that normative claims merely express the feelings of whoever makes the claim, and they thus have no cognitive meaning whatsoever. *Prescriptivism* maintains that ethical claims are not merely expressions of feelings but commands that tell people what to do. *Commendatory non-cognitivism* suggests that normative claims simply commend some behaviour or object to somebody else.

It is self-evident that non-cognitivism, in denying that normative claims represent knowledge that is inter-subjectively verifiable, subscribes to a *subjectivist* interpretation of value. Major exponents of non-cognitivism are Ayer, Carnap, Stevenson, Hare, and Bertrand Russell.

3.2 Axiology: the general theory of value

3.2.1 Foundations of axiology

The present discussion of axiology is based on the use of "value" as an *abstract* noun in its widest sense; thus, axiology is the general theory of all critical predicates. However, the discussion applies *mutatis mutandis* to a narrower use of value; in this narrower sense, axiology deals only with certain kinds of critical predicates and is a part of ethics or moral philosophy, that branch of philosophy that is concerned with what is morally good and bad, right or wrong.

The development of axiology as a general theory of value and valuation was initiated in the second half of the nineteenth century by the German philosopher Rudolf Hermann Lotze. Axiologists set out to develop a generic conception of value (as *abstract* noun) to provide a unified basis for the wide range of contexts in which acts of evaluation take place. Rather than dealing with the enormous variety of diverse values and the infinity of situations where valuation takes place, the general phenomenon of valuation is subjected to scrutiny.

Following Lotze and Brentano, Meinong suggested that the "value experience" involves four ingredients:

- "1. The *value subject* who experiences
2. A positive (or negative) emotion called the *value feeling* directed at
3. A real or an "intentional" (nonexistent) object, a *value object* that is the thing with respect to which the evaluation is made, the value feeling being produced in the value subject (not by the value object itself, but) by the value subject's entertaining (though not necessarily accepting)
4. An existence judgement about the realization or existence of this value object" (Meinong, 1894, c.f. Rescher, 1969, p.51).

This separation of the "value experience" into components raises two fundamental questions that are central to any axiological theory:

- (a) is value a *property* of an object independent of any observer or valuing subject, or is it a *relation* between the object and the valuing subject?
- (b) is the perception of value a *personal*, entirely intuitive experience, or is there an *objective* basis to it that can be investigated using scientific methods?

Meinong's position with regard to these questions constitutes the first systematic statement of what is today known as the *subjectivist* interpretation of value. Well-known antecedents to this conception of value can be found in Thomas Hobbes' *Leviathan*, and David Hume's *Treatise of human nature* (c.f. Frondizi, 1971, p.39).

Subjectivism maintains that value arises from the relation between the valuing subject and the value object. It has had a profound influence on the development of philosophy in this century, as well as on the emerging social and behavioural sciences. Subjectivism is epitomised by Perry's view that "... a thing - any thing - has value, or is valuable, in the original and generic sense when it is the object of an interest - any interest. Or, whatever is object of interest is ipso facto valuable" (Perry, 1954, pp.2-3).

The contrasting view is known as *objectivism*. It holds that value belongs to objects independent of whether they are desired, enjoyed or valued by people. The most prominent exponents of objectivism are Plato, Scheler, Nicolai Hartman, G.E. Moore, and, in his later years, Meinong, who came to adopt a position quite contrary to his earlier subjectivism. The objectivist school of thought contends that value is revealed through the process of intuition, either emotive or intellectual.

The distinction between objectivist and subjectivist doctrines is of course just one of many ways to separate different schools of philosophical thought; depending on other fundamental assumptions about the nature of value and the knowledge of value, other classes arise.

The debate between objectivism and subjectivism is of more than just historical interest; in the context of the Environment Act 1986, which requires that the Ministry for the Environment take full and balanced account of (*inter alia*) "the intrinsic values of ecosystems", a clarification of the philosophical assumptions underlying the use of the concept of value in legislation is essential. Both subjectivist and objectivist doctrines are very much alive today, and both employ the

concept of "intrinsic" values, but they differ substantially in their assumptions about the source of such values. Recent contributions in the field of environmental ethics discuss both objectivist as well as subjectivist elements (see e.g. Astbury *et al.*, 1988; Bellet, 1989; Callicott, 1984, 1985; Fox, 1984; Howell, 1986; Naess, 1973; an excellent critical account of objectivism v. subjectivism can be found in Frondizi, 1971).

3.2.2 Classifications of "value"

In order to structure the inquiry into value phenomena philosophers often distinguish between different *types* or *classes* of value. Due to the complexity of the phenomenon "value", a great number of different approaches to value classification are possible; the choice of classificational principles depends on the purpose of inquiry and the underlying assumptions regarding the domain of value and the relation between value and fact (see e.g. Rescher's (1969) list of principles in Section 3.1.1.2). In order to give an indication of the variety of possible classifications, the approaches of Perry, Lewis, Von Wright, and Robert S. Hartman are presented in this section.

A common distinction, based on the wider perception of "value", is made between the various aspects of human existence in which value phenomena are observed; this is exemplified in Perry's "realms" of value (1926, 1954). Perry lists eight realms of value:

- (a) morality
- (b) the arts
- (c) science
- (d) religion
- (e) economics
- (f) politics
- (g) law
- (h) custom or etiquette.

This classification provides the foundation for some empirical work in the social sciences, for example the classic *Study of values* (Allport *et al.* 1960).

From a narrower conception of "value", Lewis (1946) distinguishes among:

- (a) *utility*, i.e. the usefulness for some purpose
- (b) *extrinsic* or *instrumental* value, i.e. being valuable as a means to something else
- (c) *inherent* value, i.e. producing valued experiences when observed
- (d) *intrinsic* value, i.e. being valuable in itself, or as an end
- (e) *contributory* value, the value that something contributes to a greater whole of which it is a part.

A simple example, elucidating Lewis' distinctions, is provided by Frankena (1967):

"A stick of wood may be useful in making a violin, a violin may be extrinsically good by being a means to good music, the music may be inherently good if hearing it is enjoyable, the experience of hearing it may be intrinsically good or valuable if it is enjoyable for its own sake, and it may also be contributively good if it is part of a good evening or week end" (p.230).

Von Wright (1963) suggests the following varieties of "goodness":

- (a) *instrumental* goodness, i.e. useful for a purpose
- (b) *technical* goodness, i.e. being good or skilled at something
- (c) *utilitarian* goodness, i.e. resulting in good outcomes
- (d) *hedonic* goodness, i.e. pleasantness
- (e) *welfare*, i.e. the good of society.

A very precise formulation of three basic categories of value is provided by Robert S. Hartman (1967). Hartman first considers the relation between fact and value by introducing the notions of the *extension* of a concept, and its *intension*. The *extension* of a concept defines a class of objects by indicating features they possess in common. The *intension* of a concept is the set of qualities prescribed for any object that make it a "good" or "fit" member of that class of objects. For example, the objects belonging to the class "chair" share the common features of legs, a seat and a back in an arrangement and size to support a human being in a sitting position; this is the *extension* of the concept "chair". The *intension* of the concept "chair" prescribes, for example, that the legs are solid and of equal length, that the back is not broken and the seat not split; to the extent that a particular chair meets the requirements of the *intension* of the concept "chair", it is a "good" chair or a "useless" chair (Wieman, 1972). Thus, *facts* are found within the *extension* of a concept, while *values* are found within the *intension* of a concept.

Hartman distinguishes between the intensions of three different types of concepts (*synthetic*, *analytic*, and *singular*), and thus derives three fundamental types of value.

- (a) *Systemic value* is the extent to which the intension of a *synthetic* concept is fulfilled. A synthetic concept is a construct of the human mind, rather than an empirical thing; synthetic concepts have finite and denumerable properties because they come into being by definition. Systemic value is thus simply the match between a thing and the *definition* of its concept, because this definition is equal to the *intension* of the concept. For example, the concept "triangle" can be defined as "a closed plane figure bounded by three straight lines"; by adding another line to a particular triangle, or replacing one straight line with a curve the triangle is not turned into a "better" or "worse" triangle, but it is turned into a non-triangle (Brumbaugh, 1972). Systemic value is therefore of the true/false variety: either the intension of a synthetic concept is fulfilled, or it is not.
- (b) *Extrinsic value* is the value that empirical objects have to the extent that they fulfil the intension of an *analytic concept*. Because the intension of an analytic concept derives from the abstraction of common attributes of a class of objects, it can contain an infinite but denumerable number of properties. Empirical objects (chairs, for example) do not need to possess all the attributes prescribed by the intension of their concept; they may possess them to a degree, and to that degree they have extrinsic value.
- (c) *Intrinsic value* is the value found in any uniquely individual object, fulfilling the intension of a *singular concept*. A singular concept is not based on common attributes of a class of objects; rather, it defines one, and only one unique object with infinite and non-denumerable properties.

In this classification, the complexity of value increases from the *systemic* level (for example the class of human beings) to the *extrinsic* (an abstract person in society) to the *intrinsic* (a particular, unique individual).

3.2.3 Intrinsic v. instrumental value

Axiologists view the topic of their concern as something distinctive and special; they are not overly concerned with the more mundane types of valuation such as the decorative value of a vase, but with "higher" or more fundamental values (Rescher,

1969, p.53). Thus, a lot of axiological attention is focused on *intrinsic* value as opposed to *instrumental* value, i.e. upon what is valued as an *end in itself* as opposed to what is valued as a *means to some end*. This emphasis on *end values* is of special importance in ethics, as evidenced by Wittgenstein's (1965) comment, that ethics is concerned with what is good, not in the sense in which a piece of furniture might be said to be good (e.g. for seating or decoration or firewood), but in the sense of "what is really important" in life.

A major question in this connection is the *nature* of end values; i.e. the criteria of intrinsic value. This is where the major ethical systems diverge. A primary distinction exists between *monist* and *pluralist* theories; *monist* theories maintain that there is, in the final analysis, only one criterion of intrinsic value, while *pluralist* theories hold that there are a number of criteria.

Among the monist theories, a further distinction between *hedonistic* and *anti-hedonistic* theories is commonly made; *hedonists* (and *quasi-hedonists*) contend that the criterion of intrinsic value is *pleasure*, respectively *satisfaction*. Thus, all experiences that are intrinsically good are pleasant, and all pleasant experiences are intrinsically good. Principal exponents of this school of thought are Hume, Bentham, J.S. Mill, von Ehrenfels, the early Meinong, Dewey and Lewis (c.f. Frankena, 1967). *Anti-hedonistic* philosophers have suggested a range of alternative criteria for intrinsic value such as communion with god (Augustine, Aquinas), knowledge (Spinoza), self-realisation (Bradley) or power (Nietzsche) (c.f. Frankena, 1967).

Pluralistic philosophers (Plato, G.E. Moore, Scheler, Hartman and Perry) suggest a wide range of *co-existing* criteria of intrinsic goodness, such as pleasure, knowledge, beauty, truth, harmony, love, friendship, justice etc. (c.f. Frankena, 1967).

The nature and definition of intrinsic value are of particular concern to environmental philosophers (see e.g. Gunn, 1988, or Fox, 1984). While the mainstream of ethics or moral philosophy often restricts intrinsic value, and thus moral consideration, to rational beings (Kant) or sentient beings (Bentham) (c.f. Routley, 1973; Callicott, 1985), environmental ethics attempts to extend the moral community beyond humans to include animals, life in general, the biosphere, and finally the cosmos. According to Regan (1981) it is essential for the development of an environment ethic to assign intrinsic or inherent value to nature; in the absence of this, an environment ethic is reduced to a "management ethic".

A recent approach to extending intrinsic value to non-human entities is based on the argument that a contemporary view of physics (i.e. post 1925) forces the abandonment of the traditional object-subject distinction; it is argued that, if the universe is not made up of discrete objects but everything is interconnected, then intrinsic value in humans must extend by definition to the rest of the universe. Thus, moral considerability is conferred upon nature. This perception of the biosphere or the cosmos as a unified entity adds a new dimension to the question of the *carrier* of value ("*Werttrager*"), which exercised objectivist philosophers from Plato to Scheler. (For a discussion of intrinsic value and quantum theory, see e.g. Fox, 1984 and Callicott, 1985; philosophical perspectives of quantum theory are explored e.g. in Eddington, 1958, Heisenberg, 1959, Jammer, 1974, and Capra, 1976; for an entertaining non-technical account of a quantum-mechanical view of reality see Gribbin, 1984.)

It is evident from this brief sketch of some key issues in the general theory of value that the realms of value are indeed vast; the meaning of "value" in any given context depends on a substantial number of underlying assumptions, representing fundamentally different views of the world and major philosophical schools of thought. These different views of the world, and in particular the ethical stance that is adopted, are not only of significance to philosophers: they also provide the foundations for the social and behavioural sciences, as well as for economics.

3.3 Summary

Concepts of value are used in a wide variety of contexts and meanings in philosophy. Philosophers differ substantially in their meta-normative assumptions, as well as in the normative theories developed on the basis of these assumptions. A very important distinction among meta-normative theories is the choice of an objectivist or a subjectivist interpretation of "value"; this distinction pervades *all* meta-normative theories regardless of their other assumptions. Many classifications of values contain the class of "intrinsic value"; however, there are significant differences between the respective contents of that class, although they generally refer to some kind of *end* value. In order to interpret the references to "value" in the Environment Act 1986, a clarification of the underlying philosophical assumptions appears necessary.

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Section Four

Concepts and measures of value in the social and behavioural sciences

4.1 Introduction

The previous section has introduced a number of concepts and classifications of value that are of interest in the broad domain of philosophy. In addition, an overview of theories of value was presented; these theories provide a foundation not only for philosophy, but also for the social and behavioural sciences, and for economics.

Much of the philosophical inquiry into the phenomenon of value is concerned with value-as criterion, i.e., with the standards in terms of which evaluations are made. Moreover, substantial areas of philosophy, including ethics, political philosophy, and the philosophy of art, adopt a *normative* stance in their investigation of value-as-criterion; thus, they are concerned with what *ought* to be in the realms of value. The social and behavioural sciences, including disciplines such as sociology, psychology, social psychology, and anthropology, share this focus on *value-as-criterion* insofar as they are concerned with value phenomena. However, here, the emphasis lies on the *descriptive* investigation of value(s); hence, these disciplines inquire into what *is* in the realms of value.

The general object of inquiry of the social and behavioural sciences is the description and explanation of human behaviour on the individual as well as on the social level. Values-as-criteria are of interest in this area because they can contribute to the *explanation* of human behaviour: as standards of evaluation, they provide reasons or motives for human actions; therefore, they are seen as *explanatory variables* of individual and social behaviour (see e.g. Fishbein & Ajzen, 1975; Feather, 1979; Neuman, 1986; Rescher, 1969; Rokeach, 1973; Schuman & Johnson, 1976).

In contrast to philosophy and economics, which have explicitly dealt with value phenomena in one form or another for a very long time, the social and behavioural sciences have generally avoided the use of value concepts until well into the twentieth century. A major reason for this was the perceived fact-value dichotomy;

values were often regarded as *subjective*, and therefore not thought to be proper objects of scientific study (Williams, 1968).

However, the last 60 years have seen significant contributions to the study of values from the broad domain of the social and behavioural sciences. While many distinctive concepts of value and methods of empirical value research have evolved in these disciplines, several reasons suggest that they should be treated as a *whole* for the purposes of this study: firstly, as a group, the value concepts that are employed are quite distinct from the concepts of value that are used in philosophy and economics; secondly, while there is an abundance of different concepts and definitions available within this group, most of them rest on very similar key elements; finally, the empirical research in these disciplines is based on a number of common methods.

4.2 The domain of value(s)

Value research in the social and behavioural sciences is based on normative and meta-normative theories of value, and on philosophical concepts of value as discussed in Section 3. Accordingly, the *domain* covered by the term "value" can range from the restrictive to the comprehensive.

A somewhat *restrictive* definition of "value", and, according to Williams (1968), one of the more widely used ones in the social science literature, considers values to be *conceptions of the desirable, influencing selective behaviour* (Kluckhohn, 1951). Here, a clear distinction is made between what is *desirable*, and what is (merely) *desired*; the desirable is what *ought* to be desired, or what is *worthy* of being desired. Therefore, such a definition of value restricts the domain of *descriptive* value inquiry by the application of a *normative* criterion. Evidently, this normative criterion itself is a value-as-criterion; hence, the distinction between the desirable and the desired expresses a preference for one over the other.

Following Perry (1926, 1954), a broad and *comprehensive* definition of value(s) includes *anything of interest to human subjects*, all kinds of desires, wants, likes, pleasures, needs, interests, preferences, duties and many other modalities of selective behaviour (Pepper, 1958).

4.2.1 Values and related concepts

The term "value(s)" can be used in two ways: it can refer to value-as-criterion *in general*, and is then frequently used interchangeably with terms such as attitudes, norms, and motives; but it can also refer to one *particular type* or *class* of value-as-criterion, in distinction from other classes such as attitudes and norms. To avoid confusion about the two different usages of the term "value(s)", the following convention will be adopted for the rest of this section: the term "value(s)" will be used to refer to fundamental, evaluative beliefs along the lines of Rokeach's definition given below. The *collection* of concepts such as "value(s)" and "attitudes" will be generically referred to as "value-as-criterion".

Rokeach suggests the following definitions for the key concepts of *value* and *attitude*:

"A *value* is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p.5).

"An *attitude* is a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner" (Rokeach, 1968, p.450; italics added).

Values and attitudes (in Rokeach's framework) are closely related concepts; but whereas values *transcend situations*, attitudes are *situation-specific*, and whereas a value can be seen as a *single*, non-reducible element, attitudes refer to an organisation of *several* beliefs or underlying values. Attitudes are formed by the application of the relevant values pertaining to a specific situation or class of situations. In this sense, values are a much more fundamental concept than attitudes.

The distinction between values and *norms* is similar to the distinction between values and attitudes: norms are an application of values to specific situations. One or more values may give rise to a norm, and "[t]he same value may be a point of reference for a great many specific norms" (Williams, 1968, p.284). However, in contrast to attitudes, norms as specific rules of conduct are a reflection of the values and attitudes of a *group of people*, brought to bear on the individual or on a group. For example, a person may hold a fundamental belief about the equality of all humans; on the basis of this *value*, a personal *attitude* towards gender discrimination in the workplace may be formed; if the value "equality of all humans" is shared by a group of people, a social *norm* such as "equal pay for equal work" may arise. The

more general and abstract a norm, the more difficult it is to distinguish from values; the same is of course true of attitudes (Dunn,1983; Williams,1968).

The relation of *needs* to values-as-criteria is also of interest to value researchers. Biological and social needs can be seen as *prerequisites* for the development of values. For example, Schwartz & Bilsky (1987) derive eight distinct motivational or value *domains* from an analysis of the biological and social needs of the human organism. The term "value domain" refers to a grouping of values that are associated with a particular class of needs; distinct value domains identified by Schwartz & Bilsky include "enjoyment", "security", "social power", and "self-direction". Thus, needs may give rise to values, and values in turn are reflected in attitudes or, on a social level, in norms.

The totality of the values held by an individual or a group, including the relations between these values, constitute a value system:

"A value system is an organized set of preferential standards that are used in making selections of objects and actions, resolving conflicts, invoking social sanctions, and coping with needs or claims for social and psychological defenses of choices made or proposed" (Williams, 1979, p.20).

Because the values contained in a value system may conflict with each other, the notion of an *ordering* within the value system is introduced:

"A *value system* is an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a *continuum of relative importance*" (Rokeach, 1973, p.5; italics added).

On the group level, terms like "social value system", "cultural value system" or "organisational value system" are frequently used to denote the ordering of the values held by a particular group of people.

Values, as *beliefs*, are commonly seen as having *cognitive*, *affective* and *behavioural* components (Rokeach, 1973):

- (a) a value is a *cognition*, in that it refers to some kind of perception or knowledge about a correct end state to strive for, or a correct way of behaving;
- (b) a value is an *affective* component, in that people can feel emotional about it;

- (c) a value is a *behavioural* component in that it is an interceding variable that leads to action when activated.

The major features of the concept value(s) as it is used in the social and behavioural sciences can thus be summarised as follows (Schwartz & Bilsky, 1987); values are :

- (a) concepts or beliefs,
- (b) about desirable end states or behaviours,
- (c) that transcend specific situations,
- (d) guide selection or evaluation of behaviour and events, and
- (e) are ordered by relative importance.

4.2.2 The enduring nature of values

Values, as defined above, are not something that humans are born with; they are learned and developed in interaction with other humans, and through the experience of countless decision situations. Thus, values are a function of a person's history, and in particular of early childhood and adolescence (see e.g. Kohlberg, 1983). The way values are initially taught and learned has much to do with the comparative stability of values and value systems; values are taught and learned as *absolutes* and with little reference to other, possibly competing, values. As Rokeach observes:

"[we] are not taught that it is desirable, for example, to be just a little bit honest or logical, or to strive for just a little bit of salvation or peace. Nor are we taught that such modes or end-states are sometimes desirable and sometimes not" (Rokeach, 1973, p.6).

However, as children mature they are exposed to increasingly complex decision situations; they encounter situations where several competing values apply that have to be traded off against each other. Thus, a set of isolated, absolute values gradually changes into a complex system of hierarchically ordered values. This value system changes throughout the rest of one's life; usually, this change is a slow and gradual one although it often follows certain developmental patterns (see e.g. Allport, 1961; Kohlberg, 1983; Rescher, 1969, pp.111-115). Occasionally, there may occur a substantial reordering of the value system, a veritable shift of paradigm; this is often associated with a substantial change in the circumstances of one's life, or by being exposed to a value system radically different from one's own, as for example in the case of a religious conversion. In general, though, values are perceived to have an enduring or permanent character.

4.3 The empirical study of values

Any research that attempts to describe, measure, or analyse value-as-criterion faces a major obstacle: these standards of evaluation are psychological properties of the mind, not directly observable objects or phenomena. The concept of *value-as-criterion* is nothing but a *mental construct* for that which makes people prefer one thing over another, choose one course of action when several are available. In contrast to many other phenomena, particularly in the natural sciences, it is extremely difficult to isolate the phenomenon value-as-criterion in operation, and thence to describe and measure it.

In the absence of direct observation methods, social and behavioural scientists have to rely on several *indirect* lines of evidence to describe and analyse value-as-criterion (Williams, 1968). In the first instance, the research can be based on *testimonial evidence* by *asking* an individual what values or attitudes s/he holds. Depending on the particular object of inquiry, the evidence can be gathered by open or structured interviews, or through the administration of a questionnaire. Examples of these widely practised methods are candidate interviews, political surveys, and market research. There are a number of potential sources of error associated with testimonial evidence (see e.g. Dillman, 1978):

- (a) the subject may have only *limited knowledge* of his or her values-as-criteria;
- (b) the subject may not be willing to reveal the information *truthfully*;
- (c) the *question* may be *misinterpreted* by the subject, so that the answer does not address the object of inquiry;
- (d) the subject's *answer*, while addressing the question correctly, may be *misinterpreted* by the researcher; and
- (e) the researcher can introduce a *biased response* in the subject, either through the particular formulation of a question, or through his/her behaviour during the interview.

A second line of inquiry is based on the observation and analysis of *decisions* that are made by the subject, either in an experimental situation, or in real life. By scrutinising the subject's decisions, the researcher can attempt to *deduce* the subject's values-as-criteria from observed behaviour. A major problem in this type of research is the control

of the decision situation; for example, if the researcher and the subject do not coincide entirely in their perception or description of the decision situation (and they may not be aware of such a lack of coincidence), then any conclusion as to the values-as-criteria underlying a particular choice may be of questionable validity.

Yet another method of gathering evidence about value-as-criterion is the systematic analysis of verbal material, frequently called *socio-linguistic content analysis*. By subjecting the *choice of words* (for example, in documents published by an organisation) to empirical analysis on the basis of frequency counts and associations, underlying values and attitudes towards objects, situations and people can be revealed. This method can be particularly useful for analysing institutional or cultural values. Since the usage of language changes over time, this method can also be used to trace changes in social values, attitudes and norms over time (see e.g. Gerbener *et al.*, 1969; Holsti, 1969; Rokeach, 1979; Rokeach *et al.*, 1970).

4.3.1 Instruments for the empirical study of value-as-criterion

Empirical research on value-as-criterion over the past 60 years has seen the development of a vast number of specific instruments for the description of attitudes and values. Robinson & Shaver (1973) list over 100 established instruments in their compilation of *Measures of social psychological attitudes*; similar source books are provided by Chun *et al.* (1975), Lake *et al.* (1973) and Straus (1969). In addition to established and repeatedly used survey instruments, there are of course the familiar *ad hoc* attitude surveys covering a wide range of subjects in political life, market research, media studies etc.

Even a cursory inspection of these instruments would be well beyond the scope of this study; thus, the present section is restricted to a brief description of three highly influential study formats that were designed to reveal *fundamental values*. In addition, a recent *international* value survey is briefly introduced.

4.3.1.1 *Study of values* (Allport *et al.*, 1960)

Introduced in 1931, the *Study of values* measures the relative importance of six basic areas of interest or value. The construct measures what is desired, not what is desirable. The six areas are represented by:

- (a) the *theoretical* person, placing high value on the discovery of truth;
- (b) the *economic* person, placing high value on that which is useful;
- (c) the *aesthetic* person, placing high value on beauty and harmony;
- (d) the *social* person, placing high value on altruistic and philanthropic love;
- (e) the *political* person, placing high value on power and influence; and
- (f) the *religious* person, placing high value on unity.

The questionnaire contains 45 items, 30 of which are forced choice including the expression of strong or weak preference, and 15 that involve the rank ordering of four alternatives.

The test can be self-administered and self-scored; standard scores for men and women are provided, so that the test subjects can interpret their own particular value profile. According to the authors, administration and scoring can be completed in one hour.

4.3.1.2 *Variations in value orientations (Kluckhohn & Strodtbeck, 1961)*

This study attempts to measure the value orientations found in five different cultures: (a) a Spanish-American community, (b) a Mormon group, (c) a Texan group, (d) a Navaho group, and (e) a Zuni community. Thus, this study format is of particular interest to *cross-cultural* value comparisons.

Kluckhohn (1951, p.409) defines a *value orientation* as "a set of linked propositions embracing both value and existential elements". The survey rests on the assumption that all people at all times face the same limited number of fundamental problems, and that there is only a limited range of possible solutions to these problems. The particular solutions found in a given culture reflect the value orientation of that culture.

Kluckhohn and Strodtbeck identify five common human problems and postulate a range of *variations* of value orientations:

- (a) *the character of human nature*
(variations: human nature can be conceived as evil, neutral or mixed, and good; and this may be mutable or immutable);

- (b) *the relation of people to nature*
(variations: subjugation to nature, harmony with nature, domination of nature);
- (c) *the temporal focus of human life*
(variations: past, present, future);
- (d) *the modality of human activity*
(variations: being, being-in-becoming, doing); and
- (e) *the relationship between people*
(variations: lineality, collaterality, individualism)

The test consists (in its original application) of 22 items that involve the evaluation of two or three situations or statements. As the description of some of the items is quite lengthy and complex, interview time may vary quite considerably. The value-orientations format has also been used in the study of Japanese and other cultures (Albert, 1968; Robinson & Shaver, 1973).

The use of variations in value orientations is not confined to descriptive studies; it can also be employed in *futures studies* or scenario building (see e.g. Hawrylyshyn, 1980). A recent New Zealand example is the study *Contexts for development* (Zepke *et al.*, 1981). In this study, two problem areas (the relationship between human beings, and the relationship between human beings and nature), each associated with two different value orientations, form the basis of *scenario building*. This type of study is usually restricted to two or three problem areas with few variations in value orientations, due to the proliferation of possible combinations with each added dimension.

4.3.1.3 *The European value systems study (Harding et al., 1986)*

The "European value systems study group" (EVSSG) in Amsterdam was established as a foundation in 1978 to design and conduct a major empirical study of the moral and social values underlying European social and public institutions, and governing conduct. The study format has been adopted by a number of non-European countries, amongst them New Zealand (Webster *et al.*, in preparation). The study is based on an extensive questionnaire involving forced choice, multiple choice and rating questions. The main areas addressed in the New Zealand study were:

- (1) leisure, hobbies and interests;
- (2) work;
- (3) meaning and purpose of life;
- (4) marriage and family life;
- (5) financial situation;
- (6) political and social issues;
- (7) demographic data; and
- (8) business in New Zealand.

While the study does not focus on environmental and resource management issues, the section on political and social issues contains some questions about attitudes towards resource development, conservation of natural heritage and emphasis placed on material possessions and natural lifestyles. Furthermore, the questions relating to the ANZUS-nuclear armed/propelled ships issue bear on attitudes towards the environment (Webster, pers. comm.).

4.3.1.4 *The Rokeach value survey (Rokeach, 1973)*

This instrument has found widespread use in a great variety of research fields over the past 20 years, and due to the large number of studies based on the Rokeach value survey (RVS), there is now an extensive international data base available. The instrument attempts to measure two fundamental *types* of values that underlie people's attitudes and behaviour: *terminal* values, referring to desirable end states of existence; and *instrumental* values, referring to desirable modes of conduct. Each category contains 18 values, presented on separate lists (see next page); respondents are asked to *rank* the values on the two lists (separately) in order of importance, usually by rearranging a set of gummed labels. The administration of the survey is simple and does not place great demands on respondents. The instrument is usually administered together with other questions, in order to relate values to attitudes and behaviour, or to demographic data.

A major values research programme on the basis of the RVS, spanning almost two decades, has been carried out by N.T. Feathers (Feathers, 1985). The RVS is frequently used for cross-cultural comparisons (see e.g. Feather, 1979a and b, 1980). Recent applications in the context of environmental attitudes and conservation behaviour include Dunlap *et al.* (1981), Neuman (1986) and Rankin (1981). For further developments of the RVS see e.g. Braithwaite & Law (1985) and Schwartz & Bilsky (1987).

Terminal values

A comfortable life
An exciting life
A sense of accomplishment
A world at peace
A world of beauty
Equality
Family security
Freedom
Happiness
Inner harmony
Mature love
National security
Pleasure
Salvation
Self-respect
Social recognition
True friendship
Wisdom

Instrumental values

Ambitious
Broadminded
Capable
Cheerful
Clean
Courageous
Forgiving
Helpful
Honest
Imaginative
Independent
Intellectual
Logical
Loving
Obedient
Polite
Responsible
Self-controlled

4.3.2 Individual and social value-as-criterion

A substantial amount of the empirical value research within the social and behavioural sciences concerns itself with the values-as-criteria of groups or societies. The standard (implicit) assumption is that *social* standards of evaluation are a reflection of the evaluative standards of the *individual members* of the group or society (this assumption, and its philosophical foundations, will be discussed in detail in Section 5).

Note that social values-as-criteria, revealed through empirical value research as discussed above, are not, strictly speaking, *combinations* or *aggregates* of individual values-as-criteria: they are merely descriptions of the *distribution* of individual values-as-criteria within the group that is of interest. These descriptions may be highly condensed through the use of statistical measures such as means, medians, and standard deviations, but they will *always* represent statements about the underlying individual phenomena. In order to arrive at the *combined* values-as-criteria of some society, i.e., getting from the statement "the average member of society believes (x)" to "society believes (x)", a particular *aggregation rule* is needed; the problem of selecting such a rule will be briefly addressed in Section 5.

4.4 Summary

The social and behavioural sciences are predominantly interested in *value-as-criterion*, both as an explanatory variable, as well as for purely descriptive purposes. "Values" are generally understood to be beliefs or conceptions of the desirable that influence selective behaviour. Empirical value research relies on survey methods, observation methods, experimental methods, and socio-linguistic content analysis. Many research instruments have been developed that can be employed to gain evidence about fundamental values, as well as about attitudes towards specific objects and situations.

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Section Five

Concepts and measures of value in economics

Economics has had a long history of dealing explicitly with concepts of "value"; according to Frankena (1967), the widespread use of the terms "value" and "valuation" began in economics long before it was adopted in philosophy during the last century. Economics concerns itself predominantly with the issue of *choice* as a fundamental aspect of human behaviour. As individuals, groups and societies, people are continuously in the situation of having to choose between a set of (imagined) alternative futures that come about as a result of human actions and their consequences. Choice cannot be avoided: not to act in a choice-situation is a choice in itself that carries its own set of consequences, and thus constitutes one of the alternative futures.

Regardless of whether a choice is of major social significance, like the decision to build a large hydro dam, or as insignificant as the decision to save a chocolate bar for later, the choice is made on the basis of an *evaluation* of alternative futures and an ordering of them on a scale from better to worse. Thus, these alternative futures can be seen as "objects" to which people assign "value". Economics, then, attempts to identify the value assigned to objects, and express it in a form that allows a decision maker to compare the values of alternative futures and make a choice between them; thus, "[e]conomic measures of value are species of the genus *assigned value*, which belongs to the family *value*" (Brown, 1984, p.231; italics in the original). The discipline does not normally deal with *value-as-criterion*; these *underlying preferences* are usually taken as givens, assuming that individuals have their own reasons and motives for preferring one thing over another, and that they are the best judges of what is good for them. This notion is usually referred to as *individual* or *consumer sovereignty*.

Economics does not provide a single, fully specified and comprehensive definition of total value (although the concept of *option price* is an initial move in this direction; see Bishop, 1987); rather, it operates with a number of concepts, reflecting behavioural observations, that describe components or incidents of value. Some of the more fundamental concepts are briefly introduced in Section 5.2, followed by an account of some specific measures of economic value in Section 5.3; for a more elaborate, and theoretically more precise treatment refer to any textbook on microeconomic theory, e.g. Mansfield (1979).

5.1 Philosophical foundations of economic theory

Like other social and behavioural sciences, economics can be separated into a *positive* and a *normative* branch. The subject matter of *positive economics* is the description, explanation and prediction of the decisions that consumers and producers make about the allocation of resources. Positive economics deals with what *is*; thus, in terms of the typology of value theories presented in Section 3.1, it is a *descriptive* theory of value. *Normative economics* on the other hand deals with how resource allocation decisions *ought* to be made: with the criteria for judging alternative resource allocations and with the mechanisms for achieving them (Sassone, 1982). Normative economics looks at the use of resources, be they physical, human, financial or whatever, and the distribution of their benefits among people, and asks: "are some resource allocations better than others?" and "is there an optimal or best allocation?". Normative economics concerns itself with the well-being or welfare of the members of society; this is why it is frequently referred to as *welfare economics*. Because welfare economics inquires into what *ought* to be, rather than into what *is*, it is classified amongst the *normative* theories of value.

To distinguish between "better" and "worse" resource allocations and thus rank alternative social states according to their social desirability, a social decision rule is needed. The choice of this social decision rule, the *Social Welfare Function*, involves some fundamental value judgements. In the first instance, welfare economics rests on two major assumptions:

- (a) individuals are the best judges of their own welfare; and
- (b) the welfare of society depends solely on the welfare of individuals.

It is evident that these assumptions are based on value judgements; for example, by accepting assumption (b) one rejects the notion that a society is an "organism" that is greater than the "sum" of its members, and that has values of its own; moreover, anything not valued by *any* individual has *eo ipso* no value.

Within this individualistic context, a number of further value judgements are necessary; the major themes here are *efficiency* and *equity*.

5.1.1 Efficiency

The use of the term "efficiency" in economics derives from the *Pareto rule* which is one of the possible social decision rules. The Pareto rule, named after the Italian economist Vilfredo Pareto (1848-1923), declares that "[...] state 1 is socially preferred to state 2 if no one prefers state 2 to state 1 and at least one person prefers state 1 to state 2" (c.f. Sassone, 1982, p.962). For example, a proposal to preserve a historic building is Pareto *superior* to the building's destruction, if *no* individual is made worse-off by implementing this proposal, and at least *one* person is made better off. If no Pareto improvement is possible because any change would make some people worse-off, then the situation is called Pareto *efficient* or Pareto *optimal*. Questions of distributional justice cannot be addressed by the Pareto criterion; if the initial distribution of welfare is deemed to be unjust (by whatever criterion), a Pareto superior (implying socially "better") state does not necessarily redress this injustice. The Pareto criterion thus contains an implicit value judgement about the appropriateness of the initial social state. Furthermore, the criterion is limited in that it does not provide any help in judging between the *many possible* Pareto efficient states. In practice, most social actions involve at least some negative impacts on some people; in such situations, the Pareto rule does not provide any guidance.

A related form of a social decision rule is the *potential Pareto rule*, also known as the *Kaldor-Hicks criterion* (named after Nicholas Kaldor and John Hicks); according to this criterion a proposed change is socially preferred if the "winners" could *compensate* the "losers" and still be better-off. Note that there is no requirement for an *actual* compensation; hence the name *potential* Pareto rule. The implicit value judgement regarding the initial distribution of welfare is still present; however, another value judgement of the original Pareto rule, the right of everybody not to be made worse-off by a social decision, is reversed. The Kaldor-Hicks criterion is of great importance in modern welfare economics, because, in contrast to the original Pareto rule, it can be applied in real situations; Cost Benefit Analysis (CBA) (see Section 5.3) is frequently used to provide the data for a Kaldor-Hicks test.

Three other possible social decision rules may be mentioned briefly:

- (a) The *unanimity* rule, which states that a social state is superior if every single individual in society judges it to be preferable; the underlying value judgements are similar to those of the Pareto rule, and the practical

limitations of this criterion are self-evident;

- (b) *majority rule*; this rule states that a social state is superior if it is preferred by the majority of the members of that society. The rule is practically feasible and widely used for collective decisions. Here, the value judgements concern the rights of the minority against the majority; furthermore, it is deemed irrelevant whether the preferences for different social states are strong or weak: 50.1 % of the people with a weak preference for one social state prevail over 49.9 % of the people with a strong preference for the other. Because of this latter point, "... few economists have been willing to embrace the principle" (Sassone, 1982);
- (c) The *Bergson welfare function*; this decision rule assigns different weights to individual preferences to achieve equitable outcomes; however, it assumes that the well-being of one person can be compared to the well-being of another - an assumption that is not widely held by economists.

5.1.2 Equity

A second area where normative questions in welfare economics are evident is *equity*. The main issues at stake include *equality*, *justice*, and *liberty*. A distinction made between *outcome equity* and *process equity* is important in this context. The former is concerned with the fairness or equality of the outcome of social actions, while the latter is interested in the equity of the initial distribution of welfare, and the processes of change in this distribution.

Questions of *outcome equity* are mainly addressed in the form of teleological and formal deontological value theories as discussed in Section 3.1. For example, the (teleological) decision rule of utilitarianism concentrates on total social welfare; the (formal deontological) decision rule in Rawlsian justice concentrates on the welfare of the least well-off member of society. Outcome equity is often addressed in terms of *equality*: the more equal the distribution of welfare, the "better" it is; this ethical principle is often referred to as egalitarianism (see e.g. Atkinson, 1970; Friedman & Friedman, 1980; Kneese, 1977; Tobin, 1970; Sen, 1973). Another approach to determining outcome equity is *envy*: an outcome is deemed to be fair if no individual is envious of the welfare of another member of society (see e.g. Baumol, 1986, and Feldman, 1980).

Questions of *process equity* often take the form of axiological or material deontological arguments; thus, it does not matter what the outcome in terms of social welfare is, as long as the *process* of achieving an outcome is fair. The most important criterion of process equity is the notion of *equal opportunity*: for example, it may be argued that it is unfair or unjust if some people are disadvantaged because of their age, gender, race, or even because of their genetic characteristics (see e.g. Nozick, 1974, and Sen, 1986).

5.1.3 Individual and social values

One further issue remains to be briefly raised: the question of the relation between individual and social welfare. Recall the two fundamental assumptions of welfare economics mentioned above:

- (a) individuals are the best judges of their own welfare; and
- (b) the welfare of society depends solely on the welfare of individuals.

According to these assumptions, a *Social Welfare Function* is derived from individual welfare functions, i.e. from people's underlying preferences. However, it is by no means clear *how* such a social decision rule is constructed from individual values. Indeed, Kenneth Arrow has shown in his famous "impossibility theorem" (Arrow, 1963), that there is no way of obtaining a social welfare ordering from individual values that *guarantees* to satisfy a few fairly plausible conditions. These conditions can be stated as follows (c.f. McLean, 1987):

- (a) *Universal domain*: the social choice procedure can cope with every possible configuration of individual preferences (condition **U**);
- (b) *The Pareto condition*: if every individual in a society prefers x to y , the social choice procedure should pick x over y (condition **P**);
- (c) *The Independence condition*: the social ranking of any pair of options depends only on the individual rankings of that pair and is not affected by individual rankings of either member of the pair vis-a-vis others (condition **I**);
- (d) *Non-dictatorship*: there is no individual whose preferences always become society's irrespective of everyone else's preferences (condition **D**);

- (e) *Transitivity*: the requirement that the social ordering be "rational"; i.e., if society prefers A over B, and B over C, then it also prefers A over C.

Arrow's theorem states, that if there are at least three people, and at least three options, no rational social welfare function can guarantee to satisfy conditions U, P, I, and D.

Arrow's theorem has been pivotal in the development of modern social choice theory, integrating political theory with economics. The primary impact of Arrow's initial result was to demand a re-examination of the entire basis of social welfare judgements. There is a vast body of literature dealing with the impossibility theorem under varied conditions; in particular, the requirements of collective rationality, and the *Independence* condition have come under scrutiny. For an overview of Arrow's theorem and social choice theory, see Sen (1987); an excellent non-technical discussion can be found in McLean (1987).

5.1.4 Utilitarianism

Welfare economics has traditionally been dominated by an underlying utilitarian moral philosophy. Although welfare economics can be based on other normative ethical theories - and economists increasingly explore other normative foundations (see e.g. Baumol, 1986, and Sen, 1986, 1987) - the mainstream of modern welfare economics remains utilitarian. For this reason, the main elements of utilitarianism are briefly stated:

- (a) *consequentialism*: The rightness of actions - and (more generally) of the choice of all control variables - must be judged entirely by the goodness of the consequent state of affairs;
- (b) *welfarism*: The goodness of states of affairs must be judged entirely by the goodness of the set of individual utilities in the respective states of affairs;
- (c) *sum-ranking*: The goodness of any set of individual utilities must be judged entirely by their sum total (Sen, 1986, p.278).

With these philosophical underpinnings of welfare economics in mind, the general as well as some specific economic concepts of value can be explored.

5.2 The general concept of value

In a widely quoted passage in the *Wealth of nations*, Adam Smith wrote:

"The word VALUE, it is to be observed, has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys. The one may be called 'value in use'; the other, 'value in exchange'" (Smith, 1776, p.21).

This basic distinction, which can be traced as far back as Aristotle (*Politica*, 1257a6-14, c.f. Georgescu-Roegen, 1968), to this day provides the underpinning of the utility theory of value.

5.2.1 Utility analysis

The term utility, used by economists since the eighteenth century in close connection with their inquiry into the phenomenon of value, was originally used in the objective sense of "usefulness", referring to an inherent quality or *property of an object* to produce benefits, pleasure or happiness. Its meaning gradually shifted to the purely *subjective concept* of "desiredness", expressing a feeling of the mind. The classical economists had no theory to explain the relationships between utility, demand, and market prices, i.e. between *value in use* and *value in exchange*. Such an explanation rests on a distinction between *total utility*, and *increments* of utility, reflecting the common observation that the consumption of successive units of a good yields ever decreasing amounts of satisfaction; for example, to a very thirsty person, the first glass of water may taste like the best drink s/he has ever had; a second glass is still very satisfying, whilst the third tastes pretty ordinary, and a fourth is refused. Today, this is known as the *Principle of Diminishing Marginal Utility*. During the second half of the nineteenth century, the attention of economists shifted from value in use, or *total utility*, to the analysis of incremental or marginal utility, thus enabling the development of a theory linking value in use with value in exchange; at the close of the century, Francis Edgeworth wrote:

"The relation of utility to value, which exercised the older economists, is thus simply explained by the mathematical school. The value in use of a certain quantity of commodity corresponds to its total utility; the value in exchange to its marginal utility (multiplied by the quantity). The former is greater than the latter, since the utility of the final increment of commodity is less than that of every other increment" (Edgeworth, 1899, p.602, c.f. Black, 1987).

Economists frequently use diagrammatic representations to communicate formal concepts and relationships; thus the concepts of *utility* and *marginal utility* can be displayed in the following way (Fig. 5.1):

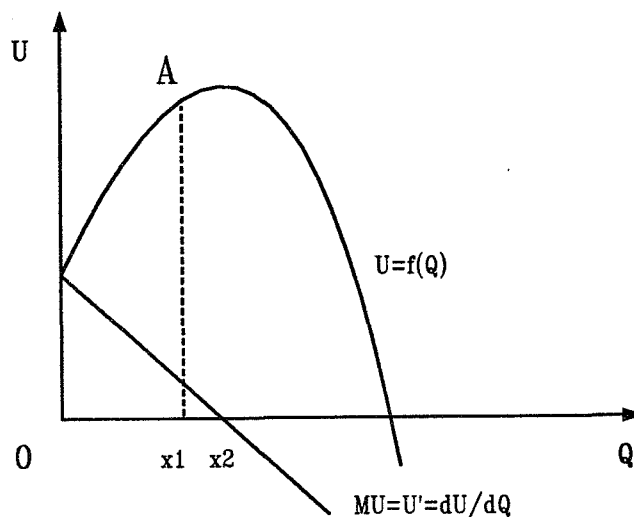


Figure 5.1: Total and marginal utility.

The vertical axis in Figure 5.1, labelled *U*, represents *utility*, increasing from the origin; the horizontal axis, labelled *Q*, measures the quantity of a *commodity*, again increasing from the origin.

The curve $U = f(Q)$ shows how utility varies with changing quantities of *Q*; the *height* of the curve at point *A* is the *total utility* derived from consuming x_1 units of *Q*.

The curve $MU = U' = dU/dQ$ shows the amount of utility associated with each additional unit of *Q*. Mathematically, this is the first derivative of $U = f(Q)$. Note that this *marginal utility* of consumption can become negative (at x_2); for example, consuming more than the prescribed dosage of medication can have adverse health effects.

There are two basic problems with the concept of utility: one is the measurement of utility, the other the interpersonal comparison or aggregation of utility. According to Georgescu-Roegen (1982, p.934), "[i]t was Plato who first claimed that what we now understand to mean utility has a measure". Many prominent economists, amongst them Bentham, Edgeworth, Walras and Marshall, believed that utility must be cardinally measurable, i.e., that there was a proper unit for utility, a "util", as it

were. Thus, Bentham coined the term "moral thermometer", and Edgeworth hoped for a "hedonimeter" to measure utility. Moreover, it was commonly assumed that these "utils" could be added up across persons, thus providing a measure of the utility of a group of people, or society. However, the idea of measurable or *cardinal* utility has by now been largely abandoned. The modern concept of utility involves only *ordinal* comparison; i.e. different levels of utility are ordered from lower to higher, but it is meaningless to say that "level A is so *much* higher than level B". Furthermore, modern economics does not assume that the utility of person X can be added to, or subtracted from, the utility of person Y in any meaningful way.

5.2.2 Indifference analysis and revealed preference

Rather than attempting to measure utility in some kind of units, *indifference analysis* inquires whether a particular utility level associated with the consumption of a *combination* or *bundle* of several goods is higher or lower than others, or alternatively, which combinations of goods produce *the same level of utility*.

This approach can be demonstrated by adding another dimension (or axis) to Figure 5.1, representing a second good; a graphic representation would be a three-dimensional picture of something akin to a mountain, where the horizontal dimensions represent the two goods, and the vertical axis represents utility; the *surface* of the mountain would then indicate the *total utility* derived from the consumption of any possible combination of *both goods*.

Now, if one were to cut off the top of that mountain at a particular altitude (or *utility level*), a *contour line* would become apparent - very much like the contour lines on a topographical map; and in the same way as a contour line on a map shows all the places on a mountain that are at the same altitude, the contour lines of the "utility mountain" show all the combinations of two goods that produce the same total utility level (Fig. 5.2).

Both axes or dimensions now represent quantities of goods, say bottles of wine, and casks of fruit juice. The contour lines on this "utility-map" show various combinations of the two goods that provide the consumer with the same amount of total utility, and thus leave her/him *indifferent* between them; hence their name *indifference curves*. For example, a consumer might be indifferent between the following *pairs* of goods:

10 bottles of wine and 1 cask of fruit juice, or
6 bottles of wine and 3 casks of fruit juice, or
3 bottles of wine and 6 casks of fruit juice, or
1 bottle of wine and 10 casks of fruit juice.

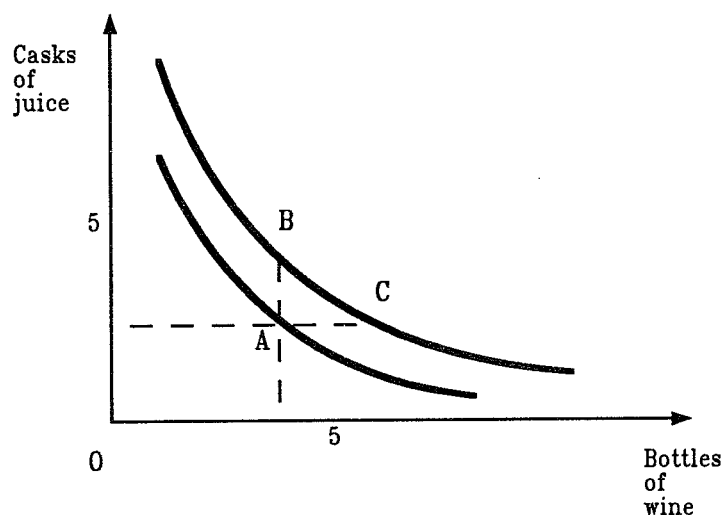


Figure 5.2: Indifference curves.

Every consumer is assumed to have a whole *set* of these indifference curves; under normal circumstances, the further away from the origin a curve is, the higher the utility level (the closer to the top of the mountain), since people usually prefer more of a good to less of it. For example, the points B and C are preferred to point A, since they involve more of one good, without having to give up some of the other.

However, in the real world, resources are limited, and therefore, not all *desirable* combinations of goods are *available* to the consumer. The consumer is constrained by a budget, say \$100, and the current prices at the liquor store stand at \$10 each for wine and fruit juice; thus s/he can for example buy 10 bottles of wine and no juice, or 10 casks of juice and no wine, or five of each. This constraint is introduced in Figure 5.3 by the budget line BC. The consumer now has the choice between all combinations within the area OBC.

Economics now assumes a certain kind of behaviour of consumers, i.e. that they choose that combination of goods that allows them to reach the highest indifference curve, so as to "maximise their utility". This is just another way of saying that "everybody does what they think is best at the time" (Boulding & Lundstedt, 1988, p.14). In Figure 5.3, this means that the combination of wine and juice at point A on indifference curve U' is chosen.

Assume now that for some reason the price of wine rises to \$20 a bottle. This changes the budget line to BD, and the available combinations of wine and juice are constrained to the area OBD (Fig. 5.4). The previously optimal combination A is now no longer available. The best possible mix of wine and fruit juice is now point E on curve U'' , i.e. on a *lower utility level* than was previously attainable.

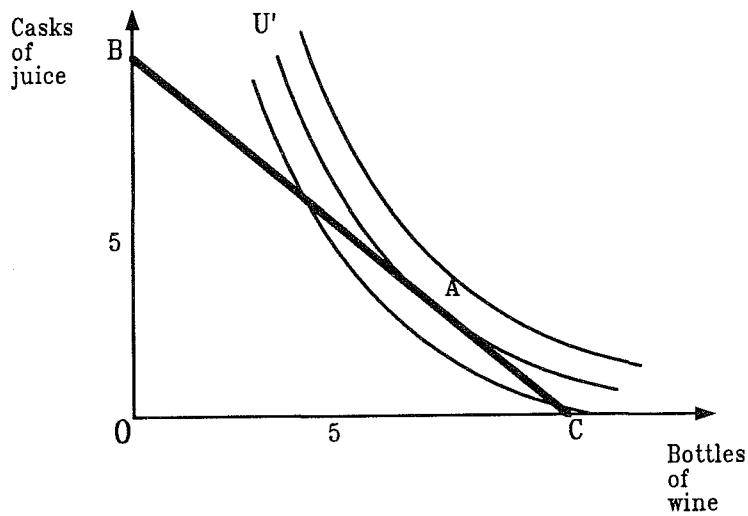


Figure 5.3: Consumer choice.

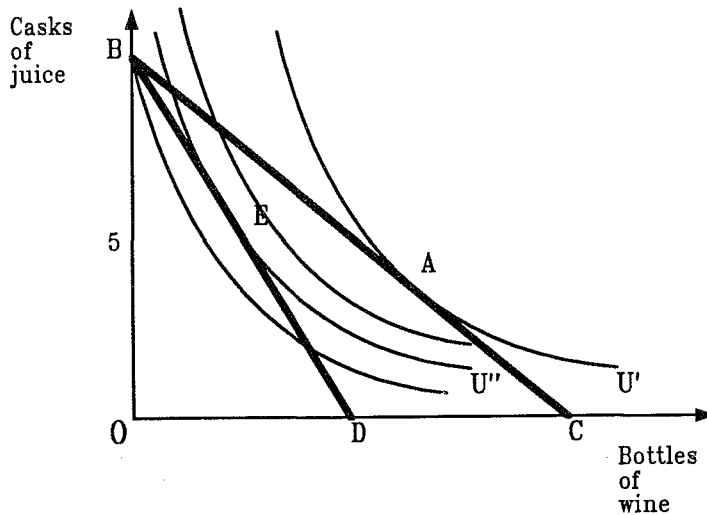


Figure 5.4: Effect of a price change.

By varying the price of a good and observing the resulting effects, one can collect a number of price/quantity combinations for that good; in the present example, the consumer may choose to buy six bottles of wine at a price of \$10, three bottles at \$20, and none at \$50. Plotting these combinations (Fig. 5.5) produces the consumer's *demand curve* for wine. The demand curve shows the different amounts that the

consumer is *willing to pay* for the first bottle of wine, for the second bottle of wine, for the third, and so on.

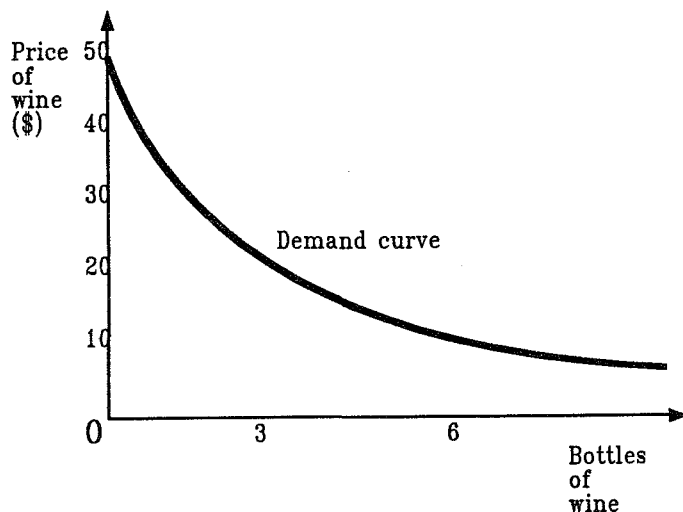


Figure 5.5: Demand curve for wine.

However, in order to derive a demand curve, a major difficulty must be overcome: in the example presented above, it was assumed that the indifference curves of the consumer were *known*; in the real world, this is hardly ever the case. Moreover, the very notion of "indifference" is problematic: *true* indifference requires that the states of mind of an individual facing two different situations are *absolutely identical* (Georgescu-Roegen, 1982).

This difficulty was resolved with the introduction of the theory of *revealed preference* by Paul A. Samuelson. The central premise of the theory of revealed preference is the *consistency-axiom*: it states that "[i]f an individual chooses A as the optimal distribution of his or her budget when also B can be chosen, the same individual will never choose B in any budget for which A is also available" (c.f. Georgescu-Roegen, 1982, p. 939). If people behave in a consistent manner with regard to their preferences, then it becomes possible to derive the demand function from mere market data (i.e., by observing the quantities demanded at different prices); the *consumers' preferences are revealed by their behaviour in real choice situations*. In contrast to utility and indifference analysis, revealed preference is an empirical concept, but it is based on indifference analysis.

5.2.3 Consumer surplus

The final step to get from these notions to a concept of value (*assigned value*) is now very simple; consider Figure 5.6:

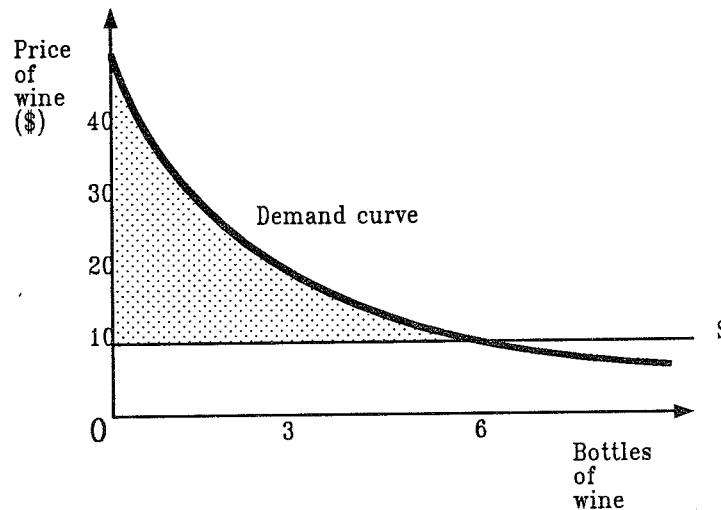


Figure 5.6: Consumer surplus.

The *demand curve* shows the maximum amount the consumer is prepared to pay for the n^{th} bottle of wine, given that s/he has already consumed (or at least bought) $n-1$ bottles; this is called the consumer's *marginal willingness to pay* for wine. Adding up the marginal willingness-to-pay for all the units produces the *total willingness-to-pay* for n bottles of wine; this is a measure of the *total (gross) benefits* the consumer expects from purchasing n bottles of wine. On the graph, this is the total area under the demand curve.

In a competitive market, the *individual* consumer cannot influence the price at which a good is supplied; the individual is a *price taker*. This constant price for wine is represented by the *supply curve* S in Figure 5.6 (under perfect competition assumptions a straight horizontal line), which is a measure of the *cost* the consumer expects to incur when buying wine.

It is apparent now, that for every bottle of wine, the *gross benefits* are not equal to the *expected costs*; in fact, for the first few bottles, benefits *exceed* costs. The *net benefits* to the consumer are equal to the excess of gross benefits over costs; i.e. total willingness-to-pay minus total cost. This net benefit is the *consumer's surplus*, and it is represented in Figure 5.6 by the shaded area *under* the demand curve and *above* the supply curve.

Thus, consumer demand theory can be used to derive a measure of value (*assigned value*) in the form of consumer surplus and expressed in terms of *willingness-to-pay*. So far, the discussion has dealt with the *individual* consumer's value only; however, recalling the main tenets of the utilitarian ethic, *social value* or social welfare is derived by simply adding up the respective surpluses of *all* individual members of society. Note that the measure of value expressed in terms of willingness-to-pay is *dependent on the initial distribution of welfare*: while a good may be as valuable to a rich or a poor person (say, a bottle of water in the desert), the rich person will be able to pay more for it.

As mentioned at the beginning of this section, welfare economics is concerned with the *social choice* between alternative proposals. The decision rule that utilitarian welfare economics applies most frequently is the *Kaldor-Hicks criterion* discussed in Section 5.1.1; i.e., a proposed change is socially preferred if the "winners" could *compensate* the "losers" and still be better off. To determine who wins or loses how much, and thus whether winners could *potentially* compensate losers, welfare economics makes use of four specific measures of value based on consumer surplus.

5.2.4 Compensating and equivalent measures

The four measures of value mentioned above are:

- (a) compensating variation
- (b) compensating surplus
- (c) equivalent variation
- (d) equivalent surplus.

Assume that a government wants to induce consumers to drink less wine for health reasons; for that purpose, a "health tax" on wine is introduced, which raises the price of wine from \$10 to \$20. Referring to Figure 5.6, it can be seen that the consumer would now only buy three bottles of wine, rather than six as before. Moreover, the consumer would face a *loss of utility*, as his/her budget of \$100 buys less wine than before. The *compensating measures* determine how much *additional income* the consumer would need to be given to be *as well-off* as before the price rise (but drinking less wine and more fruit juice).

Conversely, *equivalent measures* determine how much the consumer would be willing to pay to the government in order *not to have the price of wine raised*. Thus,

compensating measures are based on the *initial level of utility*, while equivalent measures are based on the subsequent level.

Surplus measures are used in cases where the consumer can adjust the quantities consumed - like in the case of wine. *Variation measures* are used in cases where the consumer cannot respond by changing the quantity, for example, when a government introduces a policy that alters the level of air pollution. In this case, the consumer has no choice (in the short term) but to endure (or enjoy) the change in pollution levels. (For a detailed discussion of the welfare-theoretical basis of these measures of value, and choice of the appropriate measure, see Devine, 1987.)

5.3 Non-market valuation

Not all goods and services are exchanged in markets; these goods are often natural resources like water, air, offshore fisheries, or they may be goods produced and provided by government like roads, national defence etc. Such goods are called *public goods*, in distinction from *private goods*. A pure public good is characterised by non-excludability, i.e. everyone can use it and no-one can be excluded from the use of the good, and by *non-rivalry* i.e. the use of the good by one person does not diminish the value of using it to another person. In contrast, private goods are able to confer benefits only to a single user who can exclude others from using the good. An example of a public good is TV-transmissions: nobody can be prevented from receiving the TV signals, and the transmission quality of a programme does not (for practical purposes) deteriorate if many people watch it. An example of a private good is a pair of boots: only one person can use them at a time, and the owner of the boots can prevent other people from using them even if s/he does not wear them at the time. There is a broad spectrum of goods ranging from pure public goods to pure private goods with many types of goods combining aspects of both classes.

However, the fact that a public good has *no market price* does not mean that it has *no value* to society. Choices about the provision of these goods still need to be made and, conceptually speaking, they need to be made on exactly the same basis of evaluating all alternative futures by determining the associated costs and benefits to all people. In the following section, some concepts of value used in *non-market valuation* are introduced, followed by an overview of the main methods for measuring non-market values.

5.3.1 Concepts of value in non-market valuation

There are a number of specific concepts of value that are of importance in a non-market valuation context; these concepts are of comparatively recent origin, and so the definitions in the literature are not always consistent. The present description follows Kerr (1986) and Kerr & Sharp (1987).

5.3.1.1 Use value

This is the value derived from present and (expected) future use of the resource in any form whatsoever, be it commercial or non-commercial. Examples include National Park visits, attendance at public concerts, wildlife photography etc.

5.3.1.2 Option value

There may be uncertainty about the future demand or supply of a resource; in this case the expected use value must be adjusted to reflect people's attitudes towards that uncertainty. This adjustment is called option value, and can be compared to a kind of insurance premium that people are willing to pay in order to cover themselves against, or be exposed to, a risk.

5.3.1.3 Quasi-option value

This is the value of improved knowledge about outcomes of resource uses in instances where the proposed use of the resource results in irreversible changes (e.g. the logging of rain forests). The knowledge about positive or negative outcomes only becomes available in the future, hence its value cannot be estimated. If this knowledge of future states was available, it could be included directly in decision making; thus, "[w]hile quasi-option value is definable, it is useless for decision making" (Kerr & Sharp, 1987, p.95).

5.3.1.4 Existence value

This is the value associated with the mere knowledge that a resource exists or is preserved. Various motives have been suggested as elements of existence value (Brookshire *et al.*, 1987):

- (a) *vicarious consumption*, i.e. the individual's willingness-to-pay to know that others are using the resource;
- (b) *bequest*, i.e. the willingness-to-pay for the preservation of a resource so that children and grandchildren will be able to use it;
- (c) *altruism*, in the form of interpersonal altruism, intergenerational altruism, and in the form of knowing that the resource is undisturbed (Randall & Stoll, 1983);
- (d) *stewardship*, i.e. a willingness-to-pay for preserving ecological diversity because this is part of the affairs of other individuals, or because the resources belong to future generations;
- (e) *intrinsic value*, i.e. willingness-to-pay for knowing that the resource is undisturbed for its own sake.

These categories or elements of existence value are not consistently defined in the literature; the review by Brookshire *et al.* (1987) suggests considerable overlap. To some extent, these forms of consumption may be considered part of use and option value, insofar as they fall into the category of *sympathy* as defined by Sen:

"When a person's sense of well-being is psychologically dependent on someone else's welfare, it is a case of sympathy; other things given, the awareness of the increase in the welfare of the other person then makes this person directly better off" (Sen, 1977, c.f. Brookshire *et al.*, 1987, p.15).

However, it can also be argued that some of these motives are instances of a true counter-preferential choice; as such, they would fall into what Sen characterises as *commitment*:

"One way to define commitment is in terms of a person choosing an act that he believes will yield a lower level of personal welfare to him than an alternative that is also available to him" (Sen, 1977, c.f. Brookshire *et al.*, 1987, p. 15).

This is an area where economics inquires into individual values in the sense of *value-as-criterion*: in order to be able to clearly conceptualize existence value, and assign its components into use and non-use, and preferential choice and counter-preferential choice categories, a better understanding of the motives that

underlie human behaviour is required. (For a review of conceptual and empirical work in existence and intrinsic values, see Brookshire *et al.*, 1987, and Smith, 1987).

5.3.2 Methods of value measurement

Values can be estimated either *directly* by determining maximum willingness-to-pay (or minimum willingness-to-sell), or *indirectly* by determining demand curves and measuring consumer surplus. The only direct method is the *contingent valuation* method; all other methods are indirect.

5.3.2.1 Contingent valuation

The contingent valuation method is based on the simulation of a market for a non-market good. It uses standard survey research techniques (interviews and questionnaires) to estimate the consumer's valuation (i.e. willingness-to-pay) of a good. The method employs open and forced-choice questions, bidding games and ranking exercises. It is particularly useful for estimations of non-use values. As the contingent valuation method is based on testimonial evidence, it is subject to the same range of methodological problems as discussed in the section on empirical value research in the social and behavioural sciences (Section 4.3). The method depends to a greater degree than usual survey research on the cooperation of the respondent, as some people simply refuse to express their valuation of non-market goods in monetary terms (Sagoff, 1988). A recent New Zealand application of contingent valuation was a study of values associated with the proposed Kawarau Gorge hydro scheme (Kerr, 1985). For reviews of the method see Bishop & Heberlein (1987), Brookshire *et al.*, (1987) and Cummings *et al.*, (1986).

5.3.2.2 Travel cost analysis

Travel cost analysis is a method for estimating the demand for site or location-specific resources (e.g. National Parks, skiing facilities etc.). It rests on the assumption that in order to consume the good, the consumer has to get there first, and thus incurs costs associated with travelling; these costs are the *price* that the consumer has to pay for the use of the resource. Everything else being equal, one can expect that the *cost* increases with the *distance* the consumer has to travel. By observing the number of visitors and their origin, usually by means of a questionnaire, one can derive the demand for the site as a function of the "price" for using it. The method has been widely applied in North America; recent New

Zealand studies include Harris & Meister (1981), and Kerr *et al.* (1986). For a review of the method see Kerr (1987).

5.3.2.3 *Indifference curve mapping*

It was mentioned in Section 5.2 that a weakness of indifference analysis was that indifference curves of consumers were generally unknown. However, these indifference curves can be derived by *interviewing* a subject; in such an interview, the respondent makes a series of (hypothetical) choices between combinations or bundles of goods. Plotting these choices produces indifference curves from which the demand function can be derived; however, this requires some strong assumptions, e.g. fixed expenditure on a single class of goods. The same provisos apply as discussed in Section 4.3.; the method is quite demanding of subjects, and interviews can be difficult; as a result, the method is not widely used. For a detailed discussion see Bennett (1987).

5.3.2.4 *Hedonic pricing*

Hedonic pricing makes use of the fact that the value that is attached to a good by a consumer usually depends on a whole range of *characteristics* or *attributes* of that good that satisfy different aspects of the consumer's underlying value structure. For example, a car has the characteristics of size, safety, design, status, fuel consumption etc.; the value of a house may depend on the location, number of rooms, size of the section etc. For many such goods, an extensive data base of market values is available (e.g. in the housing market). By comparing the prices of goods, say houses, one can use statistical means to derive an estimate of the consumer's valuation of a *particular attribute* of these goods. The hedonic pricing methods depends strongly on high quality data; statistical analysis of the data is fairly demanding. For a review of the method see Fisher (1987).

5.3.2.5 *Cost benefit analysis*

As indicated in the introduction to this section, decisions about the provision of goods and services are, conceptually speaking, based on an assessment of *all* costs and benefits associated with them. In order to do so, these costs and benefits, which are instances of *assigned value*, need to be brought together in a common analytical framework, independent of whether they are priced in markets, or revealed through non-market valuation techniques.

In simple terms, CBA is the assessment of *all* costs and benefits associated with a proposal, and the expression of them in one *common denominator* to enable a comparison between proposals to be made. The common denominator is arbitrarily chosen: it can be any unit of measurement, whether this is chocolate bars, compact discs or kakapos; however, for convenience a *monetary unit* is usually chosen. Cost benefit analysis is *not* a social decision rule: CBA is an *information system* or data base to which social decision rules (such as the Kaldor-Hicks criterion) can be applied. (For a short introduction into concepts of CBA see e.g. Kerr & Odgers, 1987; more extensive treatments are found in Just *et al.*, 1982; Mishan, 1982; Pearce, 1983.)

An important element of any overall assessment of *assigned values* that are associated with particular decision alternatives is the use of a *discounting procedure* i.e. of a mechanism that relates valued events or objects occurring at *different points in time* to each other. The principle of discounting is a reflection of the common observation that most people, for example, seem to prefer a bottle of wine now to a bottle of wine in a year. The underlying rationale of discounting behaviour can be seen in the fundamental *uncertainty* surrounding future events: if it is uncertain whether the benefits associated with a future event will actually materialise, then it seems reasonable to assign a *lower value* to that future, uncertain event, compared with the same event happening now with certainty. Thus, the inter-temporal evaluation of events operates with a time preference as *value-as-criterion*.

In practice, discounting of future (expected) value is often performed by means of a single *discount rate*, say, five percent per annum. Note that a discount rate of zero percent does *not* imply the absence of time preference *in principle*; it is merely a *special case* of time preference, expressing indifference between present and future events. The use of a single discount rate is based on two assumptions about the consistency of behaviour: firstly, that the same time preference (value-as-criterion) applies to *all* objects, or classes of objects, of inter-temporal evaluation, and secondly, that the time preference function has a particular *shape* i.e. a steadily decreasing *rate*. Both of these two consistency assumptions can be challenged on empirical grounds, but it is unclear which assumptions could possibly replace them (see e.g. Elster, 1985; Just *et al.*, 1982 and Mishan, 1982).

5.4 Summary

The normative foundation of mainstream welfare economics is provided by utilitarianism with the main elements of consequentialism, welfarism, and sum-ranking. Other normative assumptions are possible and are increasingly explored by economists. Welfare economics uses the concept of total willingness-to-pay as a measure of social value and the Kaldor-Hicks test as a social decision rule. To estimate the value of goods and services that are not exchanged in markets, specific non-market valuation methods are used.

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Section Six

Conclusions

This study into the use of value concepts in various disciplines has revealed a wide range of contexts in which value phenomena are investigated. It has also established some theoretical cross-connections between these disciplines.

The theoretical foundations for all value research can be found in philosophy, in normative as well as in meta-normative work. Philosophy inquires into the fundamental nature of value and valuation. The main themes that are apparent here are:

- (a) what *is* value? Is value an independent, physical or meta-physical property of objects, or does value arise out of an interaction between an object and a valuing subject?
- (b) what specific *types* of value can be identified?
- (c) what is the nature of a *normative* theory? Does a normative or ethical theory constitute some kind of knowledge that can be true or false, or is an ethical theory simply a personal statement?
- (d) what ethical rules should people observe in interacting with each other?
- (e) what ethical rules should people observe in interacting with nature?

On the basis of particular answers to these philosophical questions, social and behavioural scientists inquire into the values and attitudes that are *held* by people and groups of people. The main themes in this connection are:

- (a) what is the *psychological* and *social nature* of values and value systems?
- (b) how do values *develop*, and what are the main *influences* shaping this development?
- (c) what is the *relation* between values, attitudes and behaviour?

- (d) what *methods* are available to reveal and describe values and value systems?

Finally, economics inquires into the process and the outcomes of individual and social *choice* by observing, describing and predicting the value that people *assign* to objects and experiences. On the basis of particular normative ethical theories, welfare economics investigates socially desirable choices. Here, the main themes are:

- (a) what are the main characteristics and components of *assigned value*?
- (b) what are the *distinguishing* features of the objects and experiences to which people attach value?
- (c) which *methods* can be used to reveal the values that people place on objects and experiences?
- (d) how can individual values be *combined* into social values?
- (e) which *decision rules* can be used to make social choices?

Several implications for the Ministry's research programme on values arise from this study.

- (a) The question whether "value" is to be interpreted in an objectivist or a subjectivist manner needs to be resolved, as this has obvious implications for the direction of future research. An *objectivist* interpretation of expressions such as "the intrinsic value of ecosystems" would appear to demand further research efforts in the area of philosophy and meta-physics. Two main areas would require exploration: (1) the nature of the objects that are carriers of value ("what *is* an ecosystem; what are the boundaries of an ecosystem; how do we distinguish between higher and lower order systems?"); this is a problem of *ontology*. (2) the processes by which the value of these objects is revealed; this is a problem of *epistemology*.

A subjectivist interpretation on the other hand would appear to require further research efforts in the social sciences and in economics, directed at the values and value systems *held* by people and groups of people (for example with regards to ecosystems), and at the characteristics or features of

objects like ecosystems that give rise to a value experience in people. Since values and value systems may change over time, a subjectivist interpretation of value implies an ongoing research effort.

- (b) In all three of the disciplinary areas that were explored in this study, value research with particular reference to environmental or resource management issues is of comparatively recent origin. As a result of this, the concepts and definitions within each discipline vary significantly; furthermore, as far as economics and the social and behavioural sciences are concerned, there is so far only a comparatively small body of empirical work available. Some areas that appear to be worthy of particular attention are:

in *philosophy*: the exploration of alternative ethical systems that focus on the relationship between people and their environment; the exploration of the moral relationship between the present world and future worlds; and the exploration of the philosophical implications of contemporary physics.

in *economics*: the discussion of alternative normative foundations for welfare economics; the conceptual and empirical exploration of non-use values such as "existence values"; and the development of a substantial body of empirical work on non-market values of natural resources.

in the *social and behavioural sciences*: the exploration of the influence of values and attitudes on behaviour with respect to the physical environment; the exploration of methods to influence environmental attitudes and behaviour; and the development of a substantial body of empirical work on the values and attitudes that people and groups of people hold towards the quality of the environment in general, as well as towards particular aspects of the environment.

- (c) Finally, as indicated in the Ministry's Research Agenda 1989-1992 in Theme 13, Topics 36 and 45, institutional frameworks need to be developed for the integration of value information with other physical, social and economic data.

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