How do we develop rules for judging whether activities are beneficial?

Principle:

"The property of 'goodness' cannot be defined" (Moore, 1903). Therefore, whilst I could argue about the logic of an argument. I cannot suggest one perfectly logical argument is *"better"* than another.

"Hypotheticals":

"Hypotheticals (general propositions) are not a judgement but a rule for judging" (Ramsey, 1931). It seems general propositions form the basis of most ethical arguments.

Contrasts between *"rights-based"* and *"goal-based"* ethics:

"The distinction between rights based and goal based theories [lies in the idea] that a requirement is rights-based if it is generated by concern for some individual interest, goal-based if it is generated by concern for something taken to be an interest of society as a whole" (Waldron, 1984).

"Individuals have rights, and there are things that no person or group may do to them" (Nozick, 1974).

"A goal is a non-individuated political aim" (Dworkin, 1978).

"Rights-based theories… shudder at the thought of an aggregation exercise" (Dasgupta, 2001).

It is possible for goal-based ethics to accommodate rights-based theory, with individual's rights imposing strict constraints on what people may or may not do. States of affairs in which Nozickian rights are violated to the slightest extent are rejected (Dasgupta, 2001).

Definition of term *"sustainable development"* by UN:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations: World Commission on Environment and Development, 1987).

Definition of *"welfare"*:

"The value that someone attaches to [their] personal circumstances in a social state of affairs". Normative economists assert that all human beings should be treated equally and that their names, castes, or political or religious or ethnic affiliations should not matter for valuing objects and evaluating policies from a social point of view (Dasgupta, 2001).

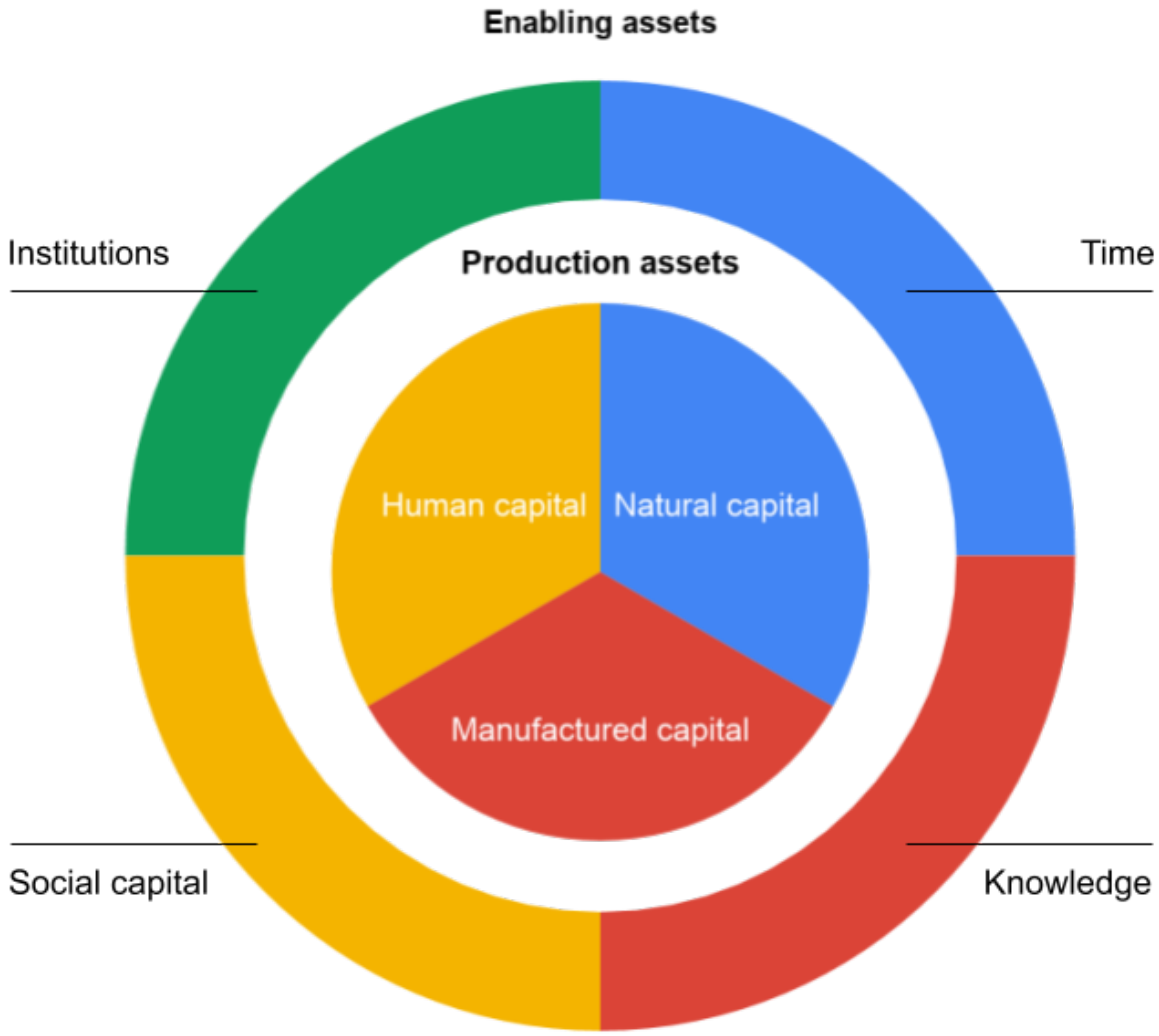
Definition of *"well-being"*:

The value that someone attached to [their] personal circumstances in a social state of affairs and the rights that they enjoy. An aggregation of the well-being of individuals is thought a measure of *"social well-being"* or *"intergenerational well-being"* (Dasgupta, 2001).

Therefore, a precisely defined goal for sustainable development may be:

"Intergenerational well-being"

A convenient taxonomy of influences on human well-being (Dasgupta, 2015):



Enabling assets allow society to be more precise about their influences on the physical world. These assets may be defined as functioning code and released as software for worldwide application.

These assets can exhibit different types of value (Dasgupta, 2001):

- *"Use-value"*: relating to the contribution of an asset to well-being once consumed.
- *"Option-value"*: relating to the contribution of an asset to well-being in the understanding that it may be consumed at some time in the future.
- *"Intrinsic-value"*: relating to the contribution of an asset to well-being in the understanding that it exists (eg. believing that polar bears roam free in the arctic).

Neither the attitudes and preferences that characterise a state of well-being, nor the rights that constitute a minimum level of decency for humanity are defined and need to be found.

Methods to understand social attitudes and preferences:

- Stock markets: Determines the price of a supply of commodities through a process of efficient market clearing.
- Hedonic regression: Determines the price of amenities by comparing house valuations and the amenities available on different parcels of land to each other using regression analysis (Dasgupta, 2001).
- Satisfaction/approval surveys: Determines the level of approval survey respondents have for a particular amenity. It has been recognised that respondent heuristics prevent pricing of an amenity using survey methods (Arrow, et al., 1993).

Methods to constitute a minimum level of decency:

"Equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all" covers both political and civil liberties (Rawls, 1972).

"Social and economic inequalities are to be arranged so that they are (a) to the greatest benefit of the least advantaged, consistent with the just saving principle, and (b) attached to offices and positions open to all under conditions of fair equality of opportunity" (Rawls, 1972).

Sustainable management of environmental externalities:

Polluting activities have benefits to individuals at others expense. By collecting reliable information about the precise sources and impacts of pollution on property rights effective resolutions can be found. Without this information public policy interventions are warranted (Coase, 1960).

Applications to valuation and evaluation:

We *"value"* when comparing objects and we *"evaluate"* when comparing the benefits of actions. Valuation and evaluation both involve comparisons between worlds with and without the course of action or object. This process is called social cost-benefit analysis and involves measuring consumer and producer *"surpluses"*. Carrying out social cost-benefit analysis requires a quantitative formulation of our qualitative goal. This was achieved in Ramsey's Mathematical Theory of Saving, which can be simplified as follows (Ramsey, 1928):

$$V_t = \sum_t^{\infty} \beta^{(\tau - t)}.U(C_\tau), \quad \text{for } t \geq 0, \text{ where } \beta = \frac{1}{(1+\mu)}$$

Where, $\mathbf{V_t}$is *"intergenerational well-being"*, $\boldsymbol{\beta}$ is the *"discount factor"*, $\mathbf{U}$ is *"well-being"*, $\mathbf{C_\tau}$ is *"consumption"* during time-step, $\mathbf{t}$ is *"time"* and $\boldsymbol{\mu}$ the *"social discount-rate"*.

$$\mu = \sigma.g(C_\tau) + \delta$$

Where, $\boldsymbol{\sigma}$ is the *"marginal utility of consumption"* and the difference in the utility one would gain from a unit of consumption by those of low and high incomes, $\mathbf{g}$ is the *"long-term growth rate"* in consumption, $\boldsymbol{\delta}$ is the *"pure rate of time preference"* and our impatience to consume resources in fear of extinction.

$$S = \frac{\mu-\delta}{\sigma\mu}$$

Where, $\boldsymbol{S}$ is the "savings rate" and the proportion of output that should be invested.

In practical applications, $\mathbf{U(C_\tau)}$ can be substituted for net cash-flow in time period to yield a familiar equation.

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Appendix

See below a table of statistics of social discount rates applied in various social contributions, including social-cost benefit of greenhouse gas emissions. Note, savings rates marked with * have been used to inform UK domestic policies.

Contribution	μ	σ	g	δ	S
(Cline, 1992)	0.05	1.5	0.033	0	0.67
(Nordhaus, 1994)	0.05	1	0.02	0.03	0.4
(Stern, 2006)*	0.05	1	0.049	0.001	0.98
(Parkinson, 2015)*	0.038	1.4	0.02	0.01	0.53
(HM Treasury, 2018)*	0.025	1	0.02	0.005	0.8

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