

## Making Decisions: Tools for Ethical Evaluations

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intro  
ethical tools  
case study  
summary

### Index

- 1 intro
  - ethics in practice
- 2 ethical tools
  - decision tree
  - reflective equilibrium method
  - ethical grid
  - ethical matrix
- 3 case study
  - case
- 4 summary



Assiut, Egypt, 2000 BCE, Peliceus-Museum Hildesheim

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### moral reasoning

ethics in practice

First: Ethic is about acting consistently, not arbitrary !

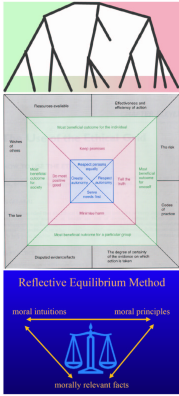
Second: Ethics is about rational & fair decisions for acting rightly.  
(*moral egalitarianism, impartial principles, based on approved facts*)

Third: In case of an ethical dilemma (contradicting principles) ethical theory helps to prioritise principles.

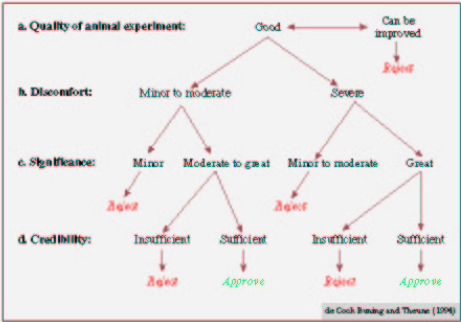
important theories

- Deontology
- Consequentialism / Utilitarianism
- Anthropocentrism

- suggested tools
- decision trees
  - ethical grids
  - ethical matrix
  - ethics from discourse



- the ethical assessment is based on a sequence of minor decisions ordered by ethical priorities
- the judgement is assisted by a table with compiled settings

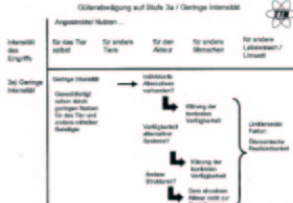


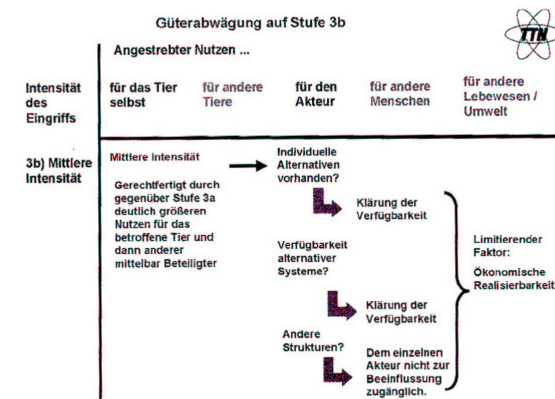
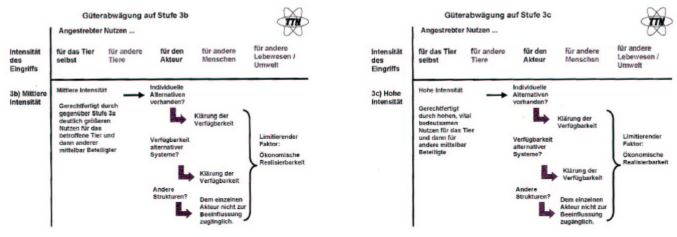
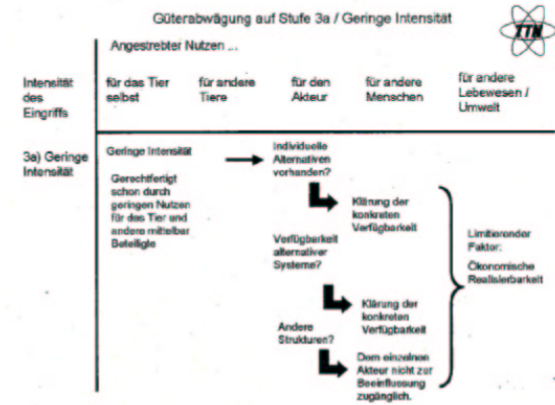


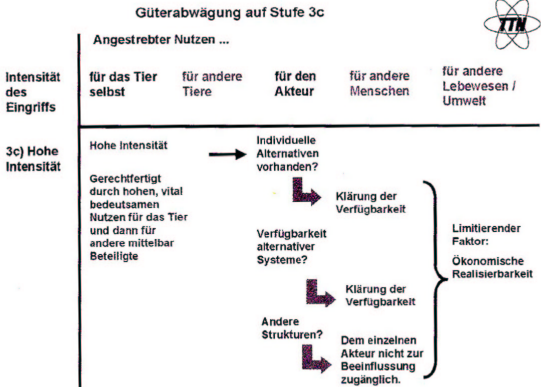
Güterabwägung		Angestrebter Nutzen ...				
Intensität des Eingriffs		für das Tier selbst	für andere Tiere	für den Akteur	für andere Menschen	für andere Lebewesen / Umwelt
1) Zu hohe Intensität		Sofern die Belastungsgrenzen des Tieres überschritten werden, erübrigt sich die Güterabwägung, weil kein Nutzen des zu intensiven Eingriffs rechtfertigend in Anschlag gebracht werden kann. Handlung ist ethisch unerlaubt.				
2) Hohe Intensität bei zweifelhaftem Nutzen		Güterabwägung erscheint <i>prima facie</i> wegen eines offenkundigen Missverhältnisses von Eingriffsintensität und Nutzen negativ. Handlung ist ethisch unerlaubt.				
3) Geringe, mittlere und ggf. hohe Intensität		Güterabwägung ist nicht <i>prima facie</i> negativ. Rechtfertigungsdruck nimmt mit der Eingriffsintensität zu. Für jeden Intensitätsgrad ist nach den Alternativen des Akteurs zu fragen. Die Handlung kann ethisch zu rechtfertigen sein, muss es aber nicht.				

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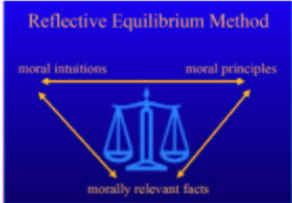
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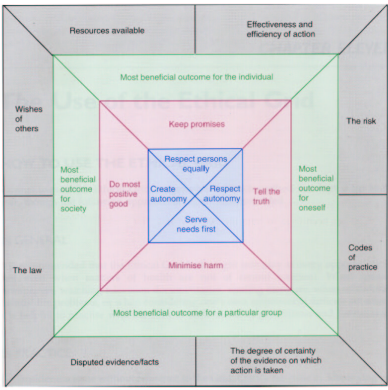


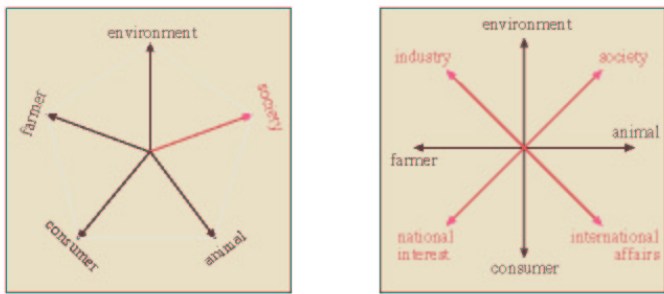
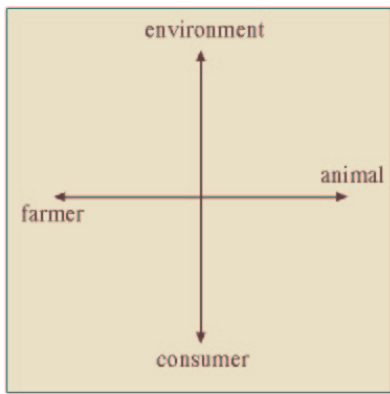
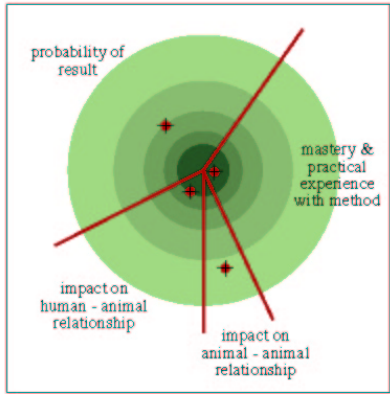


- four steps to reach equilibrium**
- 1 making explicit (own) moral intuitions on the case
  - 2 looking for applicable moral principles and elucidate the case
  - 3 searching for the morally relevant facts in relation to 1. and 2.
  - 4 balancing intuitions, principles and morally relevant facts

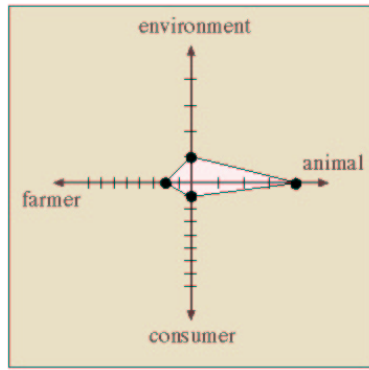


Rutgers (2002)





the grid is extensible and can be scaled properly



the ethical grid can be scaled with respect to the (relative) importance of the underlying principle.

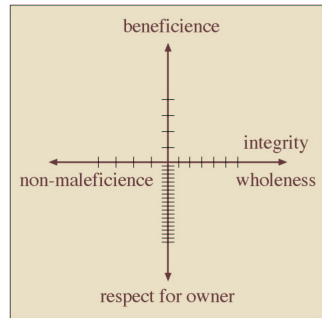
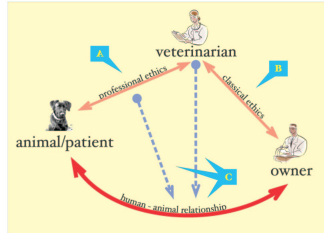
← This grid is exemplary scaled using the following weights:

protection of environment	% of animal	interests of farmer	% of consumer
2	2	1	1

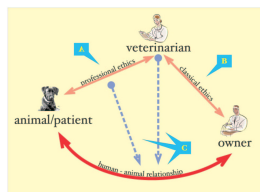
the power of the examined options can be shown by connecting the scores of each option and comparing their resulting areas.

four leading principles (A. Briese)

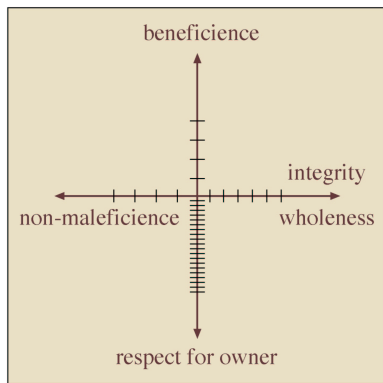
- 1 beneficence
- 2 non-maleficence
- 3 respect for animal integrity / wholeness / intrinsic value
- 4 respect for animal owner



1. & 2. ← Beauchamp and Childress (2001)  
3. ← Rutgers (1998)



... Maßnahmen zur Anpassung von Tieren an widrige Haltungsbedingungen (z.B. Mastbullenhaltung auf Spalten, Kälbermast, Kastenstand Sauen), Krallenkürzen, Schnabelkürzen, Schwanzamputation, Ferkelkastration, Mitwirkung an Tiertransporten bei widrigen Klimabedingungen, Mitwirkung an Palztierhaltung, Mastgefügelhaltung, betäubungsloser Tötung und Schlachtung, Tötung auf Verlangen des Halters, Kosmetische Operationen, Kastration und Sterilisation allgemein, "Reparaturbetrieb" bei (Sport-)Pferden ...





the ethical matrix  
 (CIWF / Ben Mepham)

RESPECT FOR	WELLBEING	CHOICE	FAIRNESS
 FARMERS FW	Satisfactory income/workplace PW	Managerial freedom PC	Fair trade rules PF
 CONSUMERS CW	Safety and quality CW	Choice/democracy CC	Affordability CF
 FARM ANIMALS AW	Animal welfare AW	Behavioural freedom AC	Intrinsic value AF
 ENVIRONMENT EW	Conservation EW	Biodiversity EC	Sustainability EF

<http://www.ethicalmatrix.net/>

the ethical matrix

ETHICAL SCORES OF TWO STUDENTS, COMPARING ORGANIC LAYING HENS WITH BATTERY-CAGED (INTENSIVE) HENS

HENRIETTA				HENRY			
	WELLBEING	CHOICE	FAIRNESS		WELLBEING	CHOICE	FAIRNESS
FARMERS	FW ?	PC +1	PF 0	FARMERS	FW ?	PC +1	PF -1
CONSUMERS	CW +1	CC +1	CF -1	CONSUMERS	CW 0	CC 0	CF -1
LAYING HENS	AW +2	AC +2	AF +2	LAYING HENS	AW +1	AC +1	AF 0
ENVIRONMENT	EW 0	EC ?	EF +1	ENVIRONMENT	EW ?	EC ?	EF +1

-2 Strongly infringe    -1 Infringe    0 Neutral    +1 Respect    +2 Strongly respect    ? Don't know

<http://www.ethicalmatrix.net/>

case: Farmer Bloggs decision

Farmer Bloggs is a pig farmer who raises 6000 pigs a years. Last year extreme weather destroyed his stables leaving the rest of the farm untouched. Frequency and strength of extreme weather phenomena have increased in recent years, claimed by many scientists to result from global climate change.

Fortunately farmer Bloggs was insured and will thus have a certain amount of money to rebuild his stable at the same size. Now he has to decide what housing system he will invest in for the next 15-20 years, which is the usual investment cycle in farms.

Based on a case study compiled by Group 3 of 2002 FLAD Bioethics Instituto 27.05. - 04.06.02 in Lisbon, Portugal, by Margarida Castro (Portugal), Tadeusz Kuczyński (Poland), Clark Ford (USA), Andreas Briese (Germany)



case: Farmer Bloggs decision



slices from <http://coastal.er.usgs.gov/hurricane> showing impact of hurricane Katrina in august 2005



case: Farmer Bloggs decision  
animal welfare aspects

On the market two different husbandry systems are available: slatted floor or deep straw (deep litter) which also affect the manure management.

Both systems are widely used and reliable information on the advantages and disadvantages of them are available. In both, the pigs are kept in groups of 12 with the same amount of floor space (8.4 square meters per group). Overall production costs including the building investment are roughly the same. The slightly higher workload on straw systems is outweighed by a lower building investment and slightly higher fattening performance.

There are strong indicators that pigs are less stressed in a diversified environment like the deep straw system. Under these conditions they express a richer behavioural inventory. Straw can be used in various ways (play, chew, hide, nest, dig, etc.) by the pigs and therefore it is recommended for intensive husbandry systems on behalf of animal welfare.

Slatted floor systems are monotonous in comparison to deep litter / deep straw systems because of less opportunity to play, chew, hide, nest, dig, etc.. In relation to pigs housed on deep litter/straw, pigs raised on slatted floors show 3 times more abnormal behaviours with serious health implications, such as repetitive (stereotype) behaviours and cannibalism.

case: Farmer Bloggs decision



two husbandry systems for intensive fattener production  
← slatted floor  
vs  
deep straw bedding →



case: Farmer Bloggs decision  
environmental protection aspect

Animal farming is suspected to have a high impact on global climate change.

Animal husbandry usually leads to production-specific emissions.

Ammonia (NH<sub>3</sub>) is one of the most important, although other emissions may have serious consequences too. Gaseous ammonia is emitted from the stable into the air and negatively affects plant biodiversity. N<sub>2</sub>O and CO<sub>2</sub> are also emitted from the straw and contribute to the global warming phenomenon.

Regarding the emission of ammonia the deep litter/straw system has some flaws. Ammonia emission results from a chemical reaction at the surface of the manure. Straw systems have a large surface area which bind faeces & urine resulting in increased NH<sub>3</sub> production. In slatted floor systems urine & faeces falls through the floor and collect under the stable. The surface of the manure pool and the animal pen area are equal. Thus the emission of ammonia in slatted floor systems is remarkably lower (by a half to a third) compared to that of the deep straw/litter system.

case: Farmer Bloggs decision  
aspect green technology investments and consumer prices

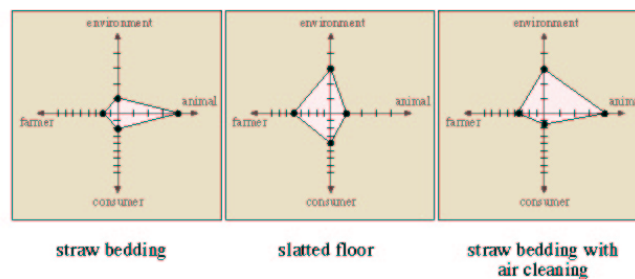
The relevant technology to reduce air-born emissions is available. But higher production costs are inevitable.

To reduce emissions basically the outgoing air is "washed" and unwanted contents are diluted in water that can be cleaned afterwards. But the technology needs further investment by the farmer to install the air-wash devices and to provide waste water cleaning facilities.

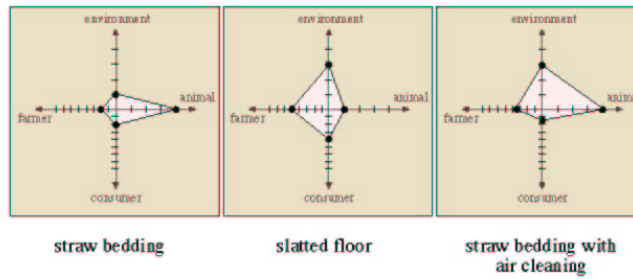
Furthermore continuous costs from energy consumption and fresh water use arise. This results in an increase of consumer prices by about 30 percent.

The further overall outcome of increased pig market prices is difficult to foresee. In consequence pig meat and other goods from pig origin might not be affordable in the same amount to anybody. The actual trend towards poultry meat might be strengthened from higher pig production costs which again affects pig farmers – disregard risks from poultry farming emissions. Lately the market pressure might lead to further concentration of pig production and loss of smaller family driven farms.

Bloggs decision



Bloggs decision



$$power = \sum_{i=1}^{n-1} (P_i * f_i * P_{i+1} * f_{i+1})/2 + (P_n * f_n * P_1 * f_1)/2$$

$P_i$  = value of Parameter<sub>i</sub> (i.e. environmental impact)  
 $f_i$  = relative weight of Parameter<sub>i</sub> (i.e. 0.3)

summary

- decision trees can be used very good with deontological approaches or if an approval is required by law. cut-off-situations will become more obvious in decision trees than in graphical tools.
- graphical tools (grid or matrix) are superior for cost - benefit - analysis (utilitarian ethics) or in any case in which the general action is ethically accepted but smaller parameters need further evaluation.

using ethical tool can be related to various situations including teaching or approval of proposals by authorities.  
 which tool might be related to the issue in discussion or the preferred ethical concept.

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thank you !

summary

- Deontologische Herangehensweisen (auch Verfahren, die sich an einer expliziten Rechtsgrundlage orientieren) lassen sich sehr gut durch Entscheidungsbäume deutlich machen.
- Der Vorteil einer grafischen Vergleichbarkeit verschiedener Optionen prädestiniert die Grid- und Matrix-Verfahren für Cost-Benefit-Erwägungen, wie sie insbesondere durch eine utilitaristische Ethik eingefordert werden.

Der Einsatzbereich solcher Tools kann sehr gross sein, und kann von der Lehre bis hin zur Dokumentation von ethischen Abwägungen bei Genehmigungen reichen. Welches Hilfsmittel bevorzugt wird, wird sich im Einzelfall an der Fragestellung und an dem präferierten ethischen Ansatz orientieren.

Danke für Ihre Aufmerksamkeit !

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