An Ecological Theory of Value

Abstract

An ecological theory focuses on the relation of subject and world as mutually dependent moments of a whole and on the development and history of entities rather than on their present properties and dispositions. Values are an aspect of the relation between organism and environment that cannot be reduced to properties of organism or environment taken as separate entities. The theory of value developed on this ontological basis can roughly be categorised as a rather robust fallibilist, non-holist realism regarding values that leads to a non-relativist, pluralist rule-utilitarianism regarding norms.

Some Preliminary Remarks

The article is restricted to the *theory* of value, so I will not make any statement with regard to what is actually good or bad, but only with regard to what it is that can be good or bad and how we can come to know about its being good or bad. I will set out by identifying the entity which can carry value. Then I will turn to epistemology and shed some light on knowledge of value, decision making and norms. In the process I will gradually move from individual to social reason. An account of ideals based on the epistemological considerations will conclude this article.

I will draw on different positions somewhat eclectically, but they can all be brought under the heading "ecological". I will establish a systematic account of the abstract common basis of these positions in the future. The purpose of this article is to break some ground in a more concrete field.

1. Basic Values and Ecological Ontology

Water is good when I am thirsty, food is good when I am hungry, shelter is good in a storm, thick clothes are good when it is cold. Water is bad when I am drowning, thick clothes are bad when it is hot. Food might be bad when I am sick. Can shelter be bad? What sets the concept of shelter apart from the others is that it is intrinsically relational. A shelter is a barrier between my body and a potentially hostile environment. Objects that afford shelter are good because they help to establish a good relation between body and environment. The point of an ecological theory of value is that the relation between body and environment is the entity which carries value. So in the final analysis it is neither the object nor the subject alone that carries value but the relation between them.

We can find an ontology into which value fits, as characterised above, in ecology as a branch of biology and in the ecological psychology initiated by James Gibson. For the theory proposed here it is largely irrelevant in which sciences ecological ontology figures as a basic structure. The important point is the structure itself, which can be found in such opposed philosophical positions as Edmund Husserl's transcendental phenomenology and Ruth Millikan's naturalism. But in order to understand its specifics it is helpful to contrast ecological ontology as exemplified by biology with the atomistic ontology as exemplified by classical physics:

The most important static feature of ecological ontology is that organism-environment pairs are inseparable. Biologists study the behaviour of organisms under normal enough conditions such as fish in water and rats in air. To physicists on the other hand it is often of special interest how things behave under quite abnormal conditions such as close to absolute zero or in vacuum. Under such conditions biologists would simply lose their object. Leaving biochemistry and reductionism aside, we can say that biologists always study organism-environment pairs. Organisms and environments are mutually

dependent as objects of biological inquiry. The ontology that takes inseparable organism-environment pairs as basic entities can be termed "ecological".

More formally we can say that the topology of physical space and ecological space are different.[1] Physical space can be arbitrarily partitioned. The boundaries of physical systems and objects are drawn the way they are drawn by physicists solely for pragmatic reasons. In electrostatics the art of drawing the most suitable boundaries is even the key to solving most problems. The boundary between organism and environment on the other hand is *not* pragmatically drawn by biologists. It is a natural boundary that is vague by the standards of the geometrical exactness of drawn physical boundaries, but it is nevertheless a reality in biological inquiry. The fact that organism and environment stand in relation is not due to properties of organism or environment; they are not self-sufficient entities but mutually dependent. Their relation is formally similar to that of colour and visual extension. Such relations are dealt with in mereology under the heading of "mutual foundation".[2] The arbitrariness of physical partitioning on the other hand requires that physical objects are self-sufficient, so that their relations are always based on properties (charge, mass etc.) which are constant for the ultimate objects (mass points) regardless of partitioning. The result of these topological differences is that value - being a material property of a relation and not of a self-sufficient object - has no place in atomistic ontology, whereas it fits well into ecological ontology.

The most important dynamic feature of ecological ontology is that the history of an object is relevant for what it is. An evolutionary explanation for example reconstructs the development of an organism-environment relation. This may again be contrasted with classical physics where the present state, or even just some state, of an object is all one needs to know. Historical explanation is not restricted to an evolutionary time scale but may also be applied to cognitive processes situated in evolved environments. The structure of this dynamic

feature of ecological ontology is captured in Millikan's concept of "proper function" which will be introduced in some detail in section 4 below.

In order to develop a theory of value on the basis of this ontology we need a concept for general relations between organism and environment. We can use Gibson's concept of "affordance" for this purpose:

> The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.[3]

Gibson emphasises the special status of affordances repeatedly:

> An important fact about the affordances of the environment is that they are in a sense objective, real, and physical, unlike values and meanings, which are often supposed to be subjective, phenomenal and mental. But, actually, an affordance is neither an objective property nor a subjective property; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy.[4]

A good example for an affordance is shelter. What affords shelter is obviously dependent on the organism for which it should be provided. It is almost impossible to give a description of objects that afford shelter in terms of defining properties. Nevertheless we do immediately perceive if an object affords shelter when we need some. In fact Gibson asserts the primacy of affordance perception over perception of properties or qualities, thus contrasting his ecological psychology of perception with "orthodox" positions.[5]

It is important to see that affordances exist independently from anybody drawing on them; a doorway affords passage whether there is somebody walking

through it or not. Affordances are real features of the environment, but they only exist in relation to the organisms whose environment they are a part of. Affordances can be empirically investigated by correlating behaviour and body scaled information.[6] From what has been said one might be led to infer that values are affordances, but that is not quite right. Something affording passage may or may not be of value. This depends on the concrete situation one is in. For example a doorway is a good thing if one has to escape from a fire. In other cases it might be bad because an enemy can come in. But there are affordances which are typically good and others which are typically bad. Shelter is an example for the first, because situations in which the possibility to take shelter is bad seem to be very rare. So more precisely values are aspects of instances of affordances in situations. Typical instantiation of an affordance leads to a normal value for the affordance as in the case of shelter. Objects with a typical affordance (e.g. food) can also get a normal value via the normal value of what they afford.

2. Knowledge of the Value of Situations

It is often said that the value of an object depends on the context it is in. On the basis of ecological ontology we can differentiate two kinds of "context": First there is the "context" of the relation in which the object stands to me; e.g. a knife lying on the table opposite to me vs. a knife sticking in my leg. Second there is the "context" in which this relation is embedded spatio-temporally and socially. The first kind of contextuality is automatically captured by adopting an ecological ontology, because it is the relation that carries value and not the object alone. So I will reserve the term "context" for the second meaning. We may then speak of "acontextual situations", meaning the *relation* to one's environment *in which one is* regardless of its embedding. Such situations can be in themselves good, bad or value-free. But the context can superimpose the acontextual value of a situation.

I do perceive the value of my own acontextual situation as a kinaesthetic tendency to remain in or to get out of the specific relation to my environment I am in. This tendency may be perceived regardless of alternative situations I can get in. I will call this value "incompared value"; in value judgements it figures as a one-place predicate "good" or "bad" (e.g. "Being burned is bad"). We can also compare the value of two situations by assessing the tendency to get out of one situation and into another. Such "compared value" figures as an ordering relation in value judgements (e.g. "Breaking my legs on the ground is better than being burned in my flat"). We will see in the next section that value comparisons bear serious difficulties. For now we concentrate on our knowledge of incompared value.

Values are aspects of instances of affordances. Therefore the correctness of value perception depends on the correctness of affordance perception. Affordance perception is fallible (e.g. passability of a well cleaned plane of glass). So I can be wrong about the value of my acontextual situation. I can also be wrong about the context of my situation, because my knowledge of the connection between the situation and its context is obviously fallible. So the theory of value I propose is fallibilistic on the most simple level of knowledge of subjective incompared value. But this analysis also shows that the value ascribed to an imagined or anticipated situation can be tested by experience of the situation.

We form concepts of types of situations in everyday experience which is partitioned into a sequence of embedded types of situations. For example going shopping is a larger situation which consists of the parts going to the shop, standing in the queue etc. and going shopping is itself part of the sequence of the day's events. The partitioning of everyday experience and the corresponding types of situations are a social reality. They are relative to a cultural system in which their part-whole structure and their relations are manifest. But the cultural system is independent of the personal opinion of an individual; it can

only be altered collectively. Our concepts of types of situations are adapted to the cultural reality we live in. So within a culture there are types of situations whose normal instances have a certain value of being in. Value judgements typically refer to such types. It is important to note that the acontextual value of a type of situation can be tested by individual experience. Thus, while the typical objects of evaluation are created socially, their acontextual value can be assessed individually.

The biological environment in general is the same for all human beings and part of it is also the same for "higher", i.e. similar, animals. Because all of us exist in the same general organism-environment relation, there are some basic human needs on the biological and maybe also on the psychological level. It is an empirical question which these needs are, but some very likely candidates are e.g. freedom from bodily harm, food and drink, shelter, room to move, co-operative interaction. It is important to note, however, that concrete instances of environments which afford the values of basic human needs can be quite different: Somebody driving a wheelchair needs a different environment in order to have freedom of movement than somebody walking. We have to keep in mind that it is not the environment or the organism in itself that carries value but the relation between them. There are some general relations which objectively carry value independently from culture.

We do not only live in a biological but also in a cultural environment, though. A cultural environment is only shared by a specific community. It is a matter of empirical investigation where the biological, transcultural environment ends and the cultural begins. For our philosophical theory it is only important to point out that there is a part in every culture that is determined by the biological and maybe psychological organism-environment relation that is common to all human beings and also to be found with similar animals. Sections 4 and 5 will focus on cultural values and also deal with the issue of universalism and relativism.

3. Decisions and Bounded Rationality

Are there any norms for decisions? I will argue that decisions can only be considered right or wrong with hindsight. But they can be good or bad in the same sense as hypotheses can be good or bad. Before I will explore this analogy I want to show that there is no strict universal norm or even regulative idea for decisions.

As a matter of fact we always make our decisions under limited knowledge. There are at least four dimensions in which the basis of our decisions could in principle be indefinitely extended: In the dimension of time we could always ask for more and more consequences. In the dimension of social space we could always go on asking who else might be affected. In the dimension of understanding the valuations of others' we could explicate their role and personal history to indefinite detail. Finally we could always try to find further alternatives which might be better. These dimensions are interconnected; e.g. taking more consequences into account may lead to taking more people into account and vice versa. Whenever we actually make a decision we put a limit on these dimensions.

This fact alone still leaves room for a theory that makes use of regulative ideas. It might be argued that a decision is right if it approaches an ideal limit of perfect knowledge in all dimensions. This presupposes that there are ways to tell how to get closer to the ideal. This way of thinking is deeply ingrained in the way decision theories are built:

The theory of subjective expected utility for instance is based on the axiom that an alternative is better if the sum of the products of probability and utility for its possible outcomes are higher. This axiom is drawn from probability theory and it always leads to definite decisions if the respective probabilities and utilities are given exact numerical values. If such information is lacking to a certain extent (e.g. only intervals or orderings are known) then definiteness of the decision is restricted to special cases. Lack of definiteness can be compensated

for by additional assumptions on rationality like risk-aversion or risk-seeking. But these assumptions are not generally warranted. Therefore ways of measuring the corresponding propensities of the actual decision maker have been suggested. In all these attempts limited knowledge is invariably modelled as a restriction on an ideal model which is then compensated for by additional assumptions or measuring procedures regarding the rationality of the actual decision maker. This kind of models is the one usually referred to in philosophical discussions of decisions. But there are also theories which construct completely different models for reasoning under limited knowledge.
The most prominent example are the "satisficing" heuristics introduced by Herbert Simon:

> [satisficing methods of heuristic search are] using experience to construct an expectation of how good a solution we might reasonably achieve, and halting search as soon as a solution is reached that meets the expectation.[7]

Such models make no use of utility functions which are to be maximized.[8] Instead of taking the norm of utility maximization for granted models of bounded rationality contain a theory of the decision makers rationality in relation to the environment. Models of bounded rationality are therefore ecological:

> Human rational behavior [...] is shaped by a scissors whose two blades are the structure of task environments and the computational capabilities of the actor.[9]

An important feature of models of bounded rationality is that they violate basic axioms of classical rationality like transitivity of value comparisons. This still would not pose a problem for theories which use regulative ideas like utility maximization, because it might be argued that bounded rationality is only descriptively more correct. The decisive point is that models of bounded

rationality are better (they make more correct decisions) and more efficient (they need less computing power) under limited knowledge than classical models.[10] This shows that violating classic basic axioms may yield better decisions. And this fact again shows that there is no way to give rules for approaching a limit of ideally based decisions, i.e. there are no regulative ideas applicable to decisions.

As an answer to the bounded rationality of decisions I want to suggest that decisions should be understood analogous to hypotheses. The role that theory plays in forming hypotheses is in the case of decisions taken by norms. Norms will be dealt with in the next section. Let us now explore the analogy between decisions and hypotheses:

Decisions can be tested by putting them into action, but there is no way to tell whether a decision will turn out right in advance. This is analogous to the creativity of abductions and their experimental testing. There are no laws of reasoning for making hypotheses, it is an essentially creative process. But there are nevertheless some minimal demands on hypotheses and also some heuristics for good hypotheses. This also applies to decisions: An hypothesis should at least explain the case in hand. This corresponds to the demand on a decision that its near consequences should be good. This demand is essentially vague, but, as we have seen in the discussion of decision theory above, this vagueness cannot be overcome. It is a heuristic principle for abductions that they should conform to accepted theory on some level of generalisation. But abductions cannot be rejected on the sole basis on nonconformity. If they were always rejected in this manner there would be no improvement of theory. The parallel to decisions and norms is easy to see: Conformity of decisions to socially accepted norms is a heuristic principle as well; it makes decisions easier. But at the same time nonconformity is no sole reason against a decision. Also nonconformity is needed for the improvement of social norms. Finally straight obedience to

norms without any proper decision making corresponds to deduction from theory.

An important consequence of the fact that there is no regulative idea for decisions is that the moral evaluation of a person's decision has to be based on her intent. Not only bad intent is morally damnable, but also lack of good intent and consequential lack of decision as in the case of negligence.

The general result of the above reflections is that decisions are creative, vaguely guidelined processes, which are a part of social norm improvement. They are thus part of an evolving system of knowledge that can be given a telos toward an ideal, but they are not themselves totally determined by that ideal. The next and the final section will focus on the larger system of normative knowledge to whose improvement decisions should pertain.

4. Norms and Proper Functions

An ecological theory focuses on development. So let us start this section with an account of the formation of norms. Considerations on becoming vegetarian will be used as an example. Such considerations can be triggered by seeing the situation of animals in mass keeping. This type of situation is then acontextually evaluated as bad. We will consider the entering of contextual considerations like the farmer's economic situation later on. For now the bad situation of the animals is the only relevant fact. As a consequence of this evaluation the purpose to avoid this situation is set. Then a line of connection from everyday behaviour to the situation is singled out of the social system; e.g. from eating meat to mass keeping. This results in the norm "Do not eat meat!" which is functional for the purpose of avoiding mass keeping of animals. After this formation the norm regulates concrete decisions like shopping, selecting from menus etc.

Given a different way of formation the same command to act can be functional for a different purpose. For example the purpose could be avoiding health risks.

Differences between "same" norms having different histories of formation surface in borderline cases of application; e.g. deciding on eating meat that would otherwise be thrown away. More importantly they surface in the case of re-evaluation, because checking a norm is done by checking the value of its purpose. If a vegetarian for ethical reasons should find out that animals are perfectly happy in mass keeping then she will (issues of killing aside) have no reason to keep up her norm. This is of course different for the health vegetarian. Finding out that a norm is or has become dysfunctional for the purpose it was adopted for is also a reason to discharge a norm. But an account of how we come to know of dysfunctionality is not part of a theory of value but of the epistemology of social systems. The important point in the context of this article is that individual norms can be evaluated by acontextual evaluation of their purposes, that is they can be evaluated independently from the whole system of norms.

On the above account norms show all the signs of following a logic of proper functions. These are defined by Millikan as follows:

> Where m is a member of a reproductively established family R and R has the reproductively established or Normal[11] character C, m has the function F as a direct proper function iff:
>
> (1) Certain ancestors of m performed F.
>
> (2) In part because there existed a direct causal connection between having the character C and performance of the function F in the case of these ancestors of m, C correlated positively with F over a certain set of items S which included these ancestors and other things not having C.
>
> (3) One among the legitimate explanations that can be given of the fact that m exists makes reference to the fact that C correlated positively

with F over S, either directly causing reproduction of m or explaining why R was proliferated and hence why m exists.[12]

This definition can be applied to norms in the following way:

R: The norms in a society are reproduced by education of its new members.

m: A specific norm known by a member of society is a member of R

C: To be followed is a - by means of education - reproductively established character of the norms R.

F: The fulfilment of a specific purpose is the direct proper function of a specific norm m.

(1) The norms known and passed on by the educators did fulfil their purpose. This may in fact not always be the case, but it is certainly a reasonable demand on good education.

(2) The connections in the social system the educators live in connect following a norm with attaining its purpose in a causal way, therefore following a norm correlates positively with purpose attainment in the case of educators and other members of society.

(3) That educators only pass on such norms which - if followed - lead to attainment of their purpose, is a legitimate explanation for the existence of any such norm.

This only shows the general applicability of Millikan's theory of proper functions to norms. A full account of the actual application of all the differentiations in Millikan's theory and their implications for reasoning with norms is beyond the scope of this article. The application of the theory of proper functions to norms is to be distinguished carefully from the normative elements in the notion of proper function itself: The normativity of a proper function derives from the carriers being made or selected for the fulfilment of that function. The functional normativity of a norm then is violated if it is followed for a different purpose than it was created for. A norm's evaluative normativity

on the other hand is violated if its proper purpose turns out to be of no or negative value.

Millikan's primary examples of things that have proper functions are taken from the biological realm. The key feature of these things is that they have been selected for their proper functions. The mechanism of selection applying to them is that of natural evolution and the causal connection between performance of their proper function and having some character is natural. In the case of social norms this is different: (a) We can choose the criteria of selection. (b) We can change social causality. Both abilities are abilities of the community[13] to which the norms apply as a whole; but the process can be triggered by an individual and its nonconforming decisions, just as a biological change can be triggered by an individual mutated organism.

(a) and (b) need some further explication: The actual criteria for norm selection at work in a community need not be ethical. As a matter of historical fact the criteria are often the welfare of the ones in power. By setting up criteria for norm selection an evolving system of norms can be given a telos. I will come back to that in the next section. Regarding an ethical criterion for selection, our theory of value strongly points toward a specific kind of rule-utilitarianism: Norms should be selected for their consequences on the value of the situations of sentient beings. We have to distinguish the following kinds of consequences:

(1) Proper consequences are those consequences the norm has been selected for, i.e. in the ethical case the good consequences on a specific acontextual situation of sentient beings.

(2) Dysfunctional consequences are consequences which are due to a dysfunctionality of the norm caused by a change in the social environment that connected command and proper consequences originally.

(3) Contextual consequences are the side effects of following the norm on the situations of - in the final analysis - all sentient beings.

Correspondingly a change of norms can be triggered by

(1) a change in the evaluation of the proper consequences.

(2) a change in social causality rendering a norm dysfunctional.

(3) taking side effects into account.

While (1) and (2) are relatively unproblematic our analysis of (3) will determine whether the theory proposed here is holistic or not. We have seen above that unlimited areas of knowledge such as knowledge of contextual side effects cannot be dealt with as such. So according to the epistemology of our theory of value side effects also have to be put in the form of norms in order to be accounted for. Thus (3) boils down to conflict between norms. Let us take a look at our example again to get a better understanding of such conflict:

Suppose eating no meat was unhealthy. Then we would get conflicting norms from the purposes of avoiding mass keeping and staying healthy. One may try to compare the value of these purposes, but this is often - though maybe not in this example - impossible as we have seen in section 3. The only way to resolve the conflict and to make any comparison unnecessary is to change the lines of social causality which make the norms conflict. In our example this may be accomplished by introducing extensive open-land keeping, which would at the same time erase conflict with the farmers' economic situation. The norms would then be qualified to "Do not eat meat coming from mass keeping!" and "Do eat meat coming from open-land keeping!". But what is to be done as long as social causality has not been changed and norms still conflict? As there is no general objective way to decide such problems they have to be left to individual conscience, but action towards resolution of the conflict has to be taken at the same time.

These considerations show that norms are connected by social causality and social causality can be changed. Therefore conflict between norms with different purposes can be resolved by altering social causality in an appropriate way. So rule-utilitarianism can demand social change not only on the level of collective norms but also with regard to any social practice. That is the reason

why ethical demands are overriding. Conflict between norms is no fault of the norms but of the social causality which connects them in such a way as to conflict. So conflict between norms does not entail the demand to change the norms but the demand to change social causality by cultural development. The result of this is that our theory is fallibilist non-holist, for we can reevaluate individual norms in the following way:

When the purpose of a norm gets evaluated, a type of situation gets evaluated acontextually. We cut a type of situation out of the connections with other situations and evaluate it. Now certainly not every type of situation allows for a definite evaluation. But this poses no problem for the formation of norms, because it simply starts only from types of situations with definite values. This evaluation and its definiteness may turn out to be wrong (case (1) above). A resulting inversion of the evaluation leads to inversion of the norm (from "do" to "don't" or vice versa). But a resulting loss of definiteness simply destroys the norm, because it will be of no use for guidance of decisions. An evaluation of a type of situation can turn out to be wrong by experience of an instance of this type. Thus individual norms can turn out to be wrong independently from any other norms.

5. Ideals and Cultural Development

I have mentioned above that the development of the system of norms of a community can be given a telos by setting up criteria of norm selection. In order to get a better understanding of this, let me first pursue the analogy between systems of norms and theories a little further: Theories are about something, and what they are about determines their attributes; e.g. physical theory is about prediction of future behaviour of natural objects, i.e. more precisely a theory is a physical theory if it is about such prediction. This is of course a very simplistic picture of physical theory but it suffices for clarification of our analogy, because it makes clear that we have to say what a system of norms is

about before we can analyse it. So let a system of norms be an ethical system of norms if it is about the attainment of purposes whose instances are situations that have positive value for the sentient beings who are in them. This fixation of the term "ethical system of norms" is not intended as an analysis of the use of "ethical" in moral discourse, but as a technical fixation for the purpose of ethical theory.

When we have fixed what a theory is about, then we have also fixed the most general criterion for correctness of the theory. Thus we have fixed the criterion of attainment of good purposes for the selection of norms in an ethical system of norms. This criterion of selection introduces a telos into the development of a system of norms, making it an ethical system of norms. The development of an ethical system of norms is directed towards an ideal. The notion of an ideal is ambiguous in ethical contexts. We have to distinguish between the kind of ideal which we find in ideals of knowledge and that which we find in utopias. What I have in mind for ethical systems of norms is the first kind of ideal. The development of an ethical system of norms is a collective enterprise of a community and the result of this enterprise cannot be known in advance, unlike utopian ideals which are devised beforehand from the normative knowledge in hand at a certain stage of development. So the ethical ideal which can direct the development of a community is no concrete utopia but an ideal of normative knowledge about the attainment of purposes whose instances are situations that have positive value for the sentient beings who are in them. The ideal can only be approached by eliminating the bad social practices, i.e. ethical selection of norms is primarily a form of critique and not of design. Such an ideal leaves the result open and leads to indefinite improvement.

Attaining normative knowledge is a very complex process, because a large part of the reality this knowledge is about is social. We have seen that normative considerations may lead to changes in social reality. Against relativism I have emphasized that such considerations can be based on the organism-environment

relations universal to human beings. But we also have to note that considerations in more general terms make use of concepts of normal value for types of situations which are formed by the social system. Normal value of types of situations is bound to the existence of a community in which these types are realised. In an ecological theory we take the limits of our cognitive capacities seriously. These capacities only work properly if they can exploit certain regularities in the environment to which they are adapted. So our concrete ability to actually do normative considerations of some complexity is dependent on a sufficiently stable social environment in which types of situations with normal values are instantiated. Thus normative knowledge is relative to a culture but the criteria of its correctness are not.

This special kind of dependency entails non-relativistic pluralism for ethical normative systems: There may be a variety of very diverse cultures which are equally suited to the attainment of purposes whose instances are situations that have positive value for the sentient beings who are in them. But being so suited is a criterion that can be applied to all cultures; such application of course presupposes thorough knowledge of the culture in question.

So far we have only considered the critique of normative systems by reference to (ultimately) basic values of organism-environment relations in the framework of ethical improvement by selection of norms. But we may also refer to the directedness towards ethical improvement itself, thus criticising the mechanisms of cultural development operative in a community. Which mechanisms in fact are most conducive to ethical improvement is an empirical question, but we can again point out some very likely candidates: Equality of the members of the community regarding consideration of their situations, openness towards influences from other communities, tendency to extend the ethical community, non-oppressive intercultural contact etc. An investigation of human history in this respect could probably teach us a lot about the mechanisms we might adopt and probably even more about those which we should avoid.

To conclude, the specific norms we follow can be criticised with regard to the value of their proper purposes, and the general way we select our norms can be criticised with regard to its conduciveness to ethical improvement. Both kinds of critique make reference to transcultural facts. But between the universal poles of the very specific values of organism-environment relations and the very general norms for cultural development there is room and even need for pluralism of ethical normative systems in communities.

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Notes

[11] Cf. Smith, Varzi (1999) on the topology of ecological space.

[2] Cf. *III. Zur Lehre von den Ganzen und den Teilen* in Husserl (1984)

[3] Gibson (1986) 127

[4] Gibson (1986) 129

[5]We have thousands of names for [tools]. They can all be said to have properties or qualities: colour, texture [...] Orthodox psychology asserts that we perceive these objects insofar as we discriminate their properties or qualities. [...] The psychologists assume that objects are composed of their qualities. But I now suggest that what we perceive when we look at objects are their affordances, not their qualities. We can discriminate the dimensions of difference if required to do so in an experiment, but what the object affords us is what we normally pay attention to. The special combination of qualities into which an object can be analyzed is ordinarily not noticed." Gibson (1986) 134

[6]For some examples of empirical investigations of affordances see Warren (1984), Warren, Whang (1987).

[7]Simon (1990) 9

[8]Simon (1982)

[9]Simon (1990) 7. The ecological paradigm of bounded rationality has not always been fully appreciated as Gigerenzer and Goldstein (1996) remark: "For the most part, however, theories of human inference have focused exclusively on the cognitive side, equating the notion of bounded rationality with the statement that humans are limited information processors, period. In a Procrustean-bed fashion, bounded rationality became almost synonymous with heuristics and biases, thus paradoxically reassuring classical rationality as the normative standard for both biases and bounded rationality [...] Simon's insight that minds of living systems should be understood relative to the environment in which they evolved, rather than to the tenets of classical rationality, has had little impact so far in research of human inference." 651

[10]For an example see the "Take the Best" algorithm in Gigerenzer, Goldstein (1996)

[11]Millikan capitalises "Normal" in order to indicate that not any statistical average is referred to but normality in the biological or medical sense. Cf. Millikan (1984) 5. I use "typical and "normal" in the same sense throughout this article.

[12]Millikan (1984) 28

[13]By "community" any semi-self-sufficient subgroup of society is meant; e.g. families, peer groups, companies with corporate identities etc.