Why are perfect animals, hybrids, and monsters food for symbolic thought?

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Abstract

Work on animal symbolism, in particular that of Mary Douglas, suggests that the symbolic value of some animals is grounded in taxonomic anomaly. Yet the work of ethno-zoologists tends to show that folk-taxonomies are consistent and devoid of true anomalies. This raises a first problem. Moreover, not only anomalous animals, but also exemplary animals often take on a symbolic value, thus raising a second problem. A solution to both problems is suggested, based on an examination of the cognitive organization of folk-taxonomies, and with illustrations drawn from Ethiopian, Biblical, and Western culture.

Foreword (1995). Here is how this article came about. When working on what was to become *Le Symbolisme en Général* (1974; in English, *Rethinking Symbolism*, 1975a), I wrote two sections, one on rhetoric, the other on animal symbolism, that I had initially intended for the book. Both, however, became too large, and were published as separate articles (Sperber 1975b, c). In 1980, I prepared a revised English version of the article on animal symbolism for a collection of French anthropological papers commissioned by Cambridge University Press, which, in the end, never came out. An Italian version of this text was published in 1986 as a separate booklet. A year or so ago, I mentioned the paper in conversation with Thomas Lawson; he mentioned it to the editors of *Method and Theory in the Study of Religion* who kindly offered, after all these years, to publish the English version. I did not have the modesty and good sense to say no.

The main point of the article - a point with which I am still in agreement - is that an understanding of animal symbolism should be firmly grounded in an account of the manner in which zoological knowledge is organized. Another important point, guiding the whole paper and stressed in the conclusion, which, I believe, anticipated recent developments at the boundary of the cognitive and the social sciences (see Hirschfeld and Gelman 1994, Tooby and Cosmides 1992), is that the conceptual organization of the zoological domain does not merely follow general principle of conceptual organization but rather exhibits domain-specific features, as do other conceptual domains. The idea that our conceptual knowledge is organized differently in different domains has far-reaching implications, including in the study of religion (see Boyer 1993). The paper attempts to develop these two points by discussing in turn categorization, and symbolism.

I was unaware, when writing this paper, of the major developments that were, just then, taking place in the psychological study of categorization (see Smith and Medin 1981, Medin 1989, Smith *in press*, for an account of these, and later developments in the field). The "classical" view of mental concepts, according to which concepts are mentally defined in terms of a set of individually necessary and jointly sufficient features, was being challenged in the work of Eleanor Rosch (1978) and others. New probabilistic approaches were emerging, according to which concepts are characterized in terms of prototypes, and items are likely to fall under a concept to the extent that they resemble the relevant prototype. The opposition between the classical view, and probabilistic views spawned a

wealth of new research. For a while, the probabilistic views seemed to be absolute winners, but then they too met with objections, both theoretical and empirical. Yet another approach emerged, according to which a concept is based on a "theory" of the objects that fall under it. In particular, the concept of a living kind is based on the idea that each living kind has some specific underlying essence.

The view of categorization I was putting forward in the present paper might have seemed obsolete in 1980, when prototypes were carrying the day. However, now, a charitable reading might see it as having been ahead of its time in some respects. Retrospectively, I should not have talked of semantic and encyclopaedic "definitions," but of semantic features and of theories, and I trust the reader will update the terminology. On the substantive side, however, I had argued that animal kinds were taken to possess their properties (e.g. the tiger its stripes) by nature, and that, when a given property was not manifested in a given individual animal, it was nevertheless virtually there. This anticipated today's "psychological essentialism." Even so, the view of categorization I was sketching was very rudimentary and poorly informed. My main motive of pride in this respect is that this paper, together with many conversations we had at the time, may have encouraged Scott Atran to develop his outstanding work on living kinds categorization, approached from a combined cognitive, historical and anthropological perspective (see in particular Atran 1990).

My treatment of animal symbolism was intended as an illustration of the general view of cultural symbolism I had articulated in *Rethinking Symbolism*, and took the form of a discussion of Mary Douglas's deservedly influential views in the matter. What I find not uninteresting in retrospect was my attempt to find a unified account of the symbolism of perfect animals, hybrids and monsters. This is a sensible goal for the study of animal symbolism, in particular in the religious context, even if the solution I offered was at best sketchy. In general, however, I am struck by my naivete in believing that cognitive psychology as it was at the time allowed a clear understanding of the cognitive bases of symbolism. The cognitive sciences have enormously progessed since the mid 70s (and I am much less ignorant than I was), but there is still a huge way to go. My present feeling is that we are just begining to be in a position to properly articulate the questions which I saw myself as answering (see Kelly, M. & F.C. Keil 1985, for an example of recent relevant cognitive research).

Relevant to a better articulation of the problem is, I believe, my later work on the "epidemiology of representations" (Sperber 1985, 1990, 1994), and the work I have done with Deirdre Wilson on communication and cognition under the label "relevance theory" (Sperber and Wilson 1986/1995). My involvement in this latter work, incidentally, came out of the article on rhetoric which I had written at the same time as the one on animal symbolism, and initially intended as a section of *Rethinking Symbolism*. I myself have not done more work on animal symbolism, but I have been led to deepen my understanding of the issues through the work already mentioned of Scott Atran (1990), and of Pascal Boyer (1993).

What follows is my 1980 English revised version of my 1975 article, with only minor stylistic changes. I am grateful to Thomas Lawson and to Russell McCutcheon for the chance of seeing this old manuscript come out of the drawer. I just hope it is not too, too dusty.

1. Introduction

Why are some animals more symbolic than others, that is, more apt to be involved in ritual, in myth, in poetry, in metaphor? The first answer is that there is no single answer: an animal may be symbolic for many, sundry reasons. It evokes, say, its former owner, or distant places, it is symbolic because of the folk etymology of its name, or because it is the first to fly back in the springtime. Still, is each and every case of animal symbolism to

be accounted for separately? Is there no explanatory principle which would determine, given a certain state of zoological knowledge, which animals are most likely to be symbolic?

Such a principle has been suggested and widely accepted in contemporary anthropology: the symbolic character of an animal would derive from its taxonomic anomaly. This is an interesting suggestion which brings together a number of ethnographic intuitions, but it is a vague one: the notion of taxonomic anomaly is left undefined and a general relationship between the anomalous and the symbolic is postulated without being either explained or explicated.

My aim in this paper is to discuss the notion of taxonomic anomaly and its explanatory value, and to suggest an alternative. To do so, I shall take for granted one general assumption about symbolism, which I have developed and argued for in *Rethinking Symbolism* (1975a): when some information meets obstacles in conceptual processing, it is symbolically processed, i.e., it evokes conditions under which its conceptual processing would have been unproblematic. This is particularly the case with paradoxical information which is symbolic of conditions under which the paradox would be solved. Cultural symbolism is a social exploitation of this psychological mechanism. When some representation, e.g., of an animal, is symbolic in a given culture, this is because it cannot be fully processed solely with the conceptual means available.

2. Symbolism and anomaly

To begin with, a remark about fantastic animals whose symbolic character is manifest. One might have expected these imaginary creatures to come and fill the gaps of the empirically know fauna. Given a classification, a taxonomy of animals, some extra species could fit in it not only without provoking a revision of classificatory principles, but even corroborating them. Actually this is what generally happens when a new species is discovered and classified: taxonomies are open and contain an indefinite number of positions for new categories. In a given culture, some species might even come in handy and give greater equilibrium and regularity to the set of known species. For instance, since we know of zebras and tigers, i.e., striped *equidae* and *felidae*, we could use striped *bovidae*, striped *canidae*, etc.

It is then worthy of remark that fantastic animals, instead of filling empty slots in existing taxonomies, do not belong to them at all. Horses with two horns would not be so upsetting, but why the unicorn with its single and quite singular horn? Why the dragon, a snake with legs and feathered wings which spits fire, when what most distinguishes snakes form other reptiles is that they are legless, when no reptile has feathered wings and no animal spits fire?

Fantastic animals are hybrids or monsters. Sometimes they combine features of preferably quite distant species or genera: like the minotaur (man and bull), the centaur (man and horse), the sphinx (woman, bird, and lion in the Greek version), the griffin (eagle and lion), the hippogriff (horse and griffin), the barometz (lamb and plant). Sometimes they possess unparalleled features: the phoenix (immortal and periodic bird), the cerberus (a three-headed dog), the catobeplas (with its deadly gaze but with a head so heavy it can only stare at the ground), the dahu (legs shorter on one side). Of course hybrids and

monsters can freely combine: thus the dragon, the hydra of Lerna, the chimaera. (For other mythical and literary examples, see Borgès & Guerrero 1957).

Hybrids, monsters or monstrous hybrids, all fantastic animals, however diverse, are taxonomic aberrations. Since they are also all symbolic, it is tempting to connect these two features, to explain the symbolic character by the anomaly, and to try and generalize the explanation so as to include real animals in its scope.

A number of recent studies, partly influenced by the work of Claude Lévi-Strauss, (in particular by Mary Douglas [1957; 1966], Edmund Leach [1964], Ralph Bulmer [1967], and S. J. Tambiah [1969]) have made such a connection between the symbolic character of certain animals and the fact of their being marginal or aberrant relative to the taxonomy of a given culture. Among these studies, those of Mary Douglas deserve a special place. Indeed, Edmund Leach and S. J. Tambiah, discussing domestic animals, rightly stress sociological factors as a source of their symbolic character and do not consider taxonomic anomaly as an independent and determining factor. Ralph Bulmer describes the marginal position of the cassowary in the zoological classification of the Karam of New Guinea, but sees it more as an effect than as a cause of a symbolic significance which he would rather explain by other factors, again sociological ones. These excellent analyses have less theoretical import than those of Mary Douglas: she alone attempts to isolate, from among all factors which may endow the conceptual representation of an animal with a symbolic value, an independent and determining factor: taxonomic anomaly. The assumption first seems to hold for individual animals which fail to conform to the pattern of their species: calves with five legs, dogs which love cats, white elephants, cocks which crow at midnight--and also for the human species: giants, dwarves, albinos, bearded ladies--all, it seems, are symbolic because they are anomalies. Even more interesting for anthropologists, some species are symbolic because they depart too much from the pattern of their genus, or seem to partake of several genera simultaneously. (Here I shall speak of species and genus, not in the strict zoological sense but to refer to two arbitrary taxonomic levels, with the genus level being more general than the species one.)

Mary Douglas offers several examples of this kind of deviation and of its symbolic consequences. In Leviticus (11:3-7) and Deuteronomy (14:4-8) some species of mammals are expressly listed as fit for human consumption: ox, sheep, goat, gazelle, roebuck, wild goat, white-rumped deer; others are listed as abominable and unfit for consumption: camel, hare, rock-hedge, and pig. Mary Douglas writes: "All the interpretations given so far fall into one of two groups: either the rules are meaningless, arbitrary because their intent is disciplinary and not doctrinal, or they are allegories of virtues and vices" (Douglas 1966: 43). The first kind of interpretation explains nothing and merely asserts that there is nothing to be explained. The second type of interpretation provides a special explanation for each biblical injunction. But "any interpretation will fail which takes the Do-Nots of the Old Testament in piecemeal fashion. ... Since each of the injunctions is prefaced by the injunction to be holy, so they must be explained by that command. There must be contrariness between holiness and abomination which will make overall sense of all the particular restrictions" (Douglas 1996: 49). Now, holiness is "unity, integrity, perfection of the individual and of the kind" (Douglas 1966: 54). Species which deviate from the definition of their genus depart from holiness.

Reconsidered in these terms, the abominations of Leviticus seem meaningful and coherent: you may eat any animal which has a parted foot or a cloven hoof and also chews the cud. A pure genus is characterized by the conjunction of two features: rumination and cloven-hoovedness. Ruminants which are not cloven-hooved (camels, as well as rock-hedges and hares taken for ruminants because of their constant chewing) and cloven-hooved animals which do not ruminate (pigs) depart from the definition of the genus and are branded impure. The abominations of Leviticus are thus neither arbitrary, nor allegorical: they are anomalies with respect to the biblical taxonomy of animals.

The Lele of Kasai (Zaïre) give an important symbolic role to the pangolin. Now, the pangolin "contradicts the most obvious animal categories. It is scaly like a fish, but it climbs trees. It is more like an egg-laying lizard than a mammal, yet it suckles its young. And most significant of all, unlike other small mammals its young are born singly" (Douglas 1966: 168). This manner of conceiving sets the pangolin apart from other animals with their large litters, and associates it with humans who also give birth singly: when a pangolin is killed, the Lele treats its body like that of a chief; its ritual ingestion protects human fertility.

Two more examples along the same lines: for the Dorze of Southern Ethiopia, snakes are aberrant animals, the only large legless ones they ever see. They do not classify snakes with any of the three large categories of animals they distinguish: domestic animals, birds, and other wild animals. The snake is thought of as a quasi-supernatural being, related to *genii loci*, object of taboos, beneficiary of sacrifices.

With respect to French folk taxonomy, the bat is a paradoxical animal: a mouse that flies like a bird. It is the object of a fear out of proportion to the actual risk: bats, it is said, get entangled in people's hair. Nowadays, this fear is given a seemingly scientific justification: the sound waves which bats emit are not echoed back by human hair. However, even a cursory look at bat folklore is enough to show that the relationship between bats and human hair is first and foremost symbolic: baldness is said to be caused by bat urine, *tinea capitis* by bat droppings (see Sébillot 1907: III, 14-15). That bats should affect the heads of humans by means of their feet and excrement is to be contrasted with the fate of mice, which go after human toes and waste matter and are sometimes trodden underfoot. Further, the special association of bats with hair (evoked by their French name, *chauve-souris*, i.e., "bald mouse") is to be related to their aberrant combination of features: they are winged animals with hair instead of feathers.

Mary Douglas, puts forward a general explanation for all facts of this kind:

Any given system of classification must give rise to anomalies, and any given culture must confront events which seem to defy its assumptions. It cannot ignore the anomalies which its scheme produces, except at risk of forfeiting confidence. This is why, I suggest, we find in any culture worthy of the name various provisions for dealing with ambiguous or anomalous events.

She then lists five types of such provisions:

First by settling for one or other interpretation, ambiguity is often reduced ... . Second, the existence of anomaly can be physically controlled ... take night crowing cocks. If their necks are properly wrung, they do not live to contradict the definition of a cock as a bird that crows at dawn ... . Third, a

rule of avoiding anomalous things affirms and strengthens the definition to which they do not conform [e.g., the abominations of Leviticus]. Fourth, anomalous events may be labelled dangerous ... . Fifth, ambiguous symbols can be used in ritual for the same ends as they are used in poetry and mythology, to enrich meaning or to call attention to other levels of existence [e.g., in the case of the pangolin]. (Douglas 1966: 39-40)

In short, a natural being which deviates from the taxonomic schema is symbolically set apart from normal beings, thus avoiding any upsetting of this schema.

According to an older view put forward by functionalists, animals become symbolic when they are particularly useful or harmful to humans. For Radcliffe-Brown this follows from a more general law: "Any object or event which has important effects upon the well-being (material or spiritual) of a society, or anything which stands for or represents any such object or event tends to become an object of the ritual attitude" (Radcliffe-Brown 1952: 129). Animals are symbolic because they are functional or antifunctional. But actually, as is stressed by Lévi-Strauss in *Totemism* (1963), there is no clear correlation between the practical and the symbolic significance of animals. Radcliffe-Brown seems to have bean somewhat aware of this when he invoked not only society's material well-being, but its spiritual well-being as well. As a result, his so-called "law" becomes circular: "spiritual" and "ritual" (or symbolic) significance are but two names for one and the same phenomenon rather than two phenomena related as cause and effect.

Mary Douglas's view is not affected by such objections. For her, it is symbolic processing itself (rather than the object processed) that fulfills a function (an intellectual, rather than a practical one) of protecting taxonomic schemata. To Lévi-Strauss's point that animals are symbolic not when they make good food, but when they make good food for thought, one might add: they make good food for symbolic thought when they make bad food for taxonomic thought.

However, the view according to which the symbolic character of animals follows from their being anomalous--i.e., deviant with respect to a taxonomic norm--while intuitively appealing, comes up against several objections.

To begin with, the functional explanation suggested does not stand up to the facts. Imagine that symbolic treatment did have the function of ridding taxonomic schemata of the anomalies they generate, of reconciling experience with a cultural image of the world which, in order to be systematic has to be selective. Two kinds of data could not then be explained: first, symbolic processing, far from merely drawing on anomalies generated by the taxonomy, gives rise to many new ones, which goes against its alleged function. If it were just a matter of setting apart natural hybrids and monsters, why create artificial ones, those fantastic animals which complicate the task further? Why ascribe to normal natural species properties which raise new taxonomic problems and do not solve any: for example, why do the Dorze hold leopards to be Christians, and hyenas to be larger at night?

Second, why should some taxonomic anomalies such as the Lele pangolin, instead of being prohibited and set apart, be put right in the centre of cultural life, worshipped, ritually eaten, etc.? Of course, privileged treatment does separate these animals from the

common lot, but in a way such as to emphasize rather than play down the inadequate and incomplete character of the taxonomic schema. In order to deal with such cases, Mary Douglas has to invoke another function: "to enrich meaning or to call attention to other levels of existence" (Douglas 1966: 40). Enriched meaning and other levels of existence fit no more easily into the taxonomic schema than do fantastic animals. In short, symbolic treatment introduces as many distortions as it removes between experience and the taxonomic model of the world. It multiplies the problems (if they are problems) which it is supposed to resolve.

Even leaving aside this suggested psychological functional explanation, Mary Douglas's view comes under three more objections. Firstly, it is not established that anomaly is a sufficient condition. To do this, instead of considering some symbolic animals and showing them to be anomalous, one would have to consider a full taxonomy and check if all anomalies undergo symbolic treatment. And, it should be shown that anomaly is the determining factor. Secondly, anomaly is not a necessary condition: perfect or paradigmatic animals also take on a symbolic value: e. g. the eagle, the paradigmatic raptor, or the lion, the perfect wildcat. Thirdly, and most important of all, the notion of a taxonomic norm is left too obscure to be of much value in clarifying our intuitions.

3. the logic of folk-taxonomies

While notions of taxonomic norm and anomaly are rather vague, the notion of a taxonomy is, it seems, better understood and has been much studied, both formally and empirically, in the past twenty years. A whole trend in American anthropology known variously as ethnoscience, ethnosemantics, componential analysis, or cognitive anthropology has made a specialty of this kind of study (see the collection edited by Tyler 1969).

Take a set of objects. These objects are distributed among a number of mutually exclusive categories, i.e., every object must belong to a category, no object can belong to two categories. The set of these categories is itself distributed among a number of also mutually exclusive categories of a hierarchically superordinate level. These second-level categories may themselves be similarly distributed among third-level categories, etc. This is a taxonomy. In other words, a taxonomy is a hierarchical classification such that, at any given level, categories are mutually exclusive. All known cases of zoological classification basically conform to this taxonomic pattern (with a variable number of levels from culture to culture): no individual animal belongs to two species, no species belongs to two genera, etc.

Note that taxonomic classification is just one pattern among many and has no logical primacy. Sentiments for example are not classified into mutually exclusive and hierarchically organized categories: a sentiment may be at the same time of love, tenderness, and esteem. Again, cigars are classified according to their shade (oscuro, maduro, colorado, claro), their shape (corona, perfecto, panatella, etc.) and their origin (Havanas, Brazils, Manillas, etc.); these three criteria freely overlap so as to determine a cross-classification rather than a taxonomy.

The classification of animals by means of a taxonomic ordering does not derive from any abstract logical necessity. One might imagine that it is determined by the empirical

organization of the animal kingdom into species, genera, etc., as established by scientific zoology. However a brief look at folk taxonomies (the only ones this article is concerned with) shows that they are not fully determined by empirical considerations. The modern notion of a species revolves around the fact that like begets like. But what of natural hybrids? In French folk taxonomy, for example, the mule has the logical status of a species: a mule is not both a horse and a donkey, it is neither; in other words it constitutes a category mutually exclusive of others on the same level; it is not a conceptual hybrid even though its being a biological hybrid is well known. Further, there are a number of exotic variations of the doctrine of spontaneous generation, especially for insects, without this causing the notion of a species or taxonomic classification to be called into question. Thus the notion of a species in folk taxonomies need not be defined by the only criterion acceptable to modern zoological thinking: the reproduction of like by like. The natural mode of reproduction, certainly well observed in all societies for the greater part of their fauna, may be the object of a generalisation which, however important, remains external to the principle of taxonomic classification.(For the development of Western tradition in this respect, see Jacob 1970).

In folk taxonomies, empirical considerations are even less determining when one considers the distribution not of individual animals into species, but of species into genera. Thus among the Dorze, having feathers and eggs defines a first genus (*kapho*); domestication defines a second genus (*mehe*); and having at least four legs and not belonging to the other two genera defines a third genus (*do'a*); lastly snakes and fish are two marginal genera, each with only one named species, in the two-tiered taxonomy of the Dorze. The Dorze are aware of resemblances among insects, among *felidae*, among *bovidae*, etc., but this knowledge is not part of their taxonomy, and in some cases could not be part of it since, for instance, there are both domestic and wild *bovidae*. On the other hand, the distinction between domesticated and wild animals could not define two genera in French folk taxonomy where several species are found in both conditions. This distinction belongs to encyclopaedic knowledge of animals, which extends far beyond taxonomy proper.

The knowledge that the Dorze and many other people have of their fauna could be expressed in a cross-classification (on the pattern of that of cigars) rather than in a taxonomy. As overlapping criteria, one could have, for instance: mode of reproduction, number of legs, size, type of skin (fur, feathers, scales, etc.), habitat, and food habits. Plenty of knowledge for which taxonomic ordering has no use would become quite relevant in such a mode of classification.

If a taxonomic mode is logically arbitrary and empirically under-determined, it is unclear why it should be considered as defining a norm, and why then a zoological classification which would deviate from it in places, i.e., which would not constitute a fully regular taxonomy, should be considered 'anomalous' in those places. Still, in the absence of logical or empirical necessity, the existence of a psychological necessity may be suggested: the human mind might have a preference for the taxonomic mode, which could be imperative in cases such as that of the fauna where the facts fit easily enough. However vague, this hypothesis has the merit of suggesting an explanation as to why animals should universally be classified taxonomically.

I shall accept the hypothesis of a psychological imperative for yet another reason: I want to disprove Mary Douglas's claim that "any given system of classification must give rise to anomalies" (1966: 39). Now, if the taxonomic mode is not imperative, the points at which a folk classification depart from it do not constitute anomalies and I would not have much left to prove. However, it is possible that this mode is psychologically imperative. What I have to show, then, is that even in that case, classification need not give rise to anomalies.

To do this, I shall argue that folk classifications, precisely because they are empirically under-determined, can always be made to conform to the taxonomic principle; that apparent irregularities can be eliminated by simple logical devices available to the people themselves; that anomalies turn up only when ethnographers fail to normalize their descriptions. The ethnographers' failure need not reflect a similar failure on the part of the subjects. Actually, it is worth noting that ethnozoologists generally describe folk taxonomies without proper anomalies, while students of symbolism come up with as many taxonomic anomalies as there are symbolic animals. This inconsistency surely must be eliminated, while at the same time preserving the true contribution of both approaches.

Consider the following statements:

[1] Every animal belongs to one and only one species.

[2] Every species belongs to one and only one genus.

These are not contingent but necessary truths given the taxonomic mode of animal classification. Or again:

[3] What species does this animal belong to?

[4] What genus does this species belong to?

These two questions necessarily have an answer even in cases where a new species or a new genus has to be identified before the answer can actually be given. In other words, [5] must be understood in the sense of [6] or else it is necessarily false:

[5] This animal does not belong to any species.

[6] This animal does not belong to any *known* species.

Any statement which contradicts [1] or [2] is forever paradoxical and can only be assimilated through symbolic processing. The only zoological identifications that are clearly of this type are descriptions of fantastic animals: the minotaur belongs to no species, dragons to no genus, independently of the fact that they borrow their features from several species or genera. Fantastic animals are, as we have seen, outside all taxonomy. Though they may be anomalies, they are not generated by the taxonomy but by a contradiction--in discourse, not in nature--of the very principles of taxonomic classification.

However, within the taxonomy itself there could exist cases where, for instance, a natural

species would be described as not belonging to any genus, that is to say, cases where taxonomic principles are not strictly obeyed. The difficulty for the anthropologist in establishing the existence of such anomalies, is proportionate to the ease with which natives could correct them. All they would have to do is give the term referring to the isolated species a double meaning so that, in principle, it would also refer to a genus of which the species concerned is the only known member.

Take the Dorze snake (*shosh*). It does not belong to any of the three main genera: *kapho* ('birds'), *mehe* ('domestic animals'), *do'a* ('wild animals'). In the Dorze highlands only one species of snake is ever met. Hence the word *shosh* could be understood as referring to a species without a genus or to both a species and a genus. How are we to decide which interpretation is correct? There is an easy test in this instance which could, I imagine, be extended to all similar cases. Near Dorze, in the Rift Valley, snakes are plentiful and varied. When Dorzes go down in the Rift Valley, they come to recognize several species, they borrow terms from other Ethiopian languages to name them, and they keep *shosh* to describe the genus on the one hand, and the one species commonly found in Dorze on the other hand. This shows that snakes are not a species without a genus, but a genus which happens to include only one well-known species. When the Rift Valley is not within walking distance, a similar test could be devised with the help of photographs.

In the same way, evidence suggesting that a species belongs to two genera simultaneously should be considered critically. A bat is not half-bird half-rodent; it is a rodent which flies like a bird or a bird which has fur like a rodent according to different taxonomies. It is not contrary to principles of taxonomic classification that a species should in some features resemble a species belonging to another genus. The catfish is definitely a fish despite its whiskers. What would be needed is a case where investigating the taxonomy itself i.e., the classification of empirical objects (and not mythical, fabulous, or metaphoric discourse) would clearly bring out that a certain species belongs to two genera. That is a case where "species X belongs to genus A" and "species X belongs to genus B" would be put forward as equally true statements.

Imagine that the definition of some species X should conform to the definition of two genera A and B. Couldn't this be remedied? Species X necessarily has some features which no species of genus B possesses. It is enough then that the absence of that feature or some other feature incompatible with it be made part of the definition of B for the species X unequivocally to belong to genus A.

An example: recently a few Dorze have started breeding poultry. Poultry could then, it seems, come both under "birds" and under "domestic animals" (which, as already mentioned, are two distinct genera). However they are still strictly considered as "birds". This is unproblematic if the definition of "domestic animals" is made to include the feature "four-legged". In other words, this kind of anomaly can always be prevented by some simple logical device.

In short, if we accept that the taxonomic principle constitutes a universal norm, then two kinds of anomalies are conceivable in the relationships between species and genera: a species so defined that it fits into no genus, or a species so defined that it fits into two genera. I have argued that these two kinds of anomalies can be altogether avoided by appropriately altering the definitions of species and genera. It seems then that not only

does the taxonomic principle universally govern zoological classifications, but also all species can be made to conform to it. The only clear cases where this principle is violated are those of imaginary animals which are certainly anomalies but generated in opposition to the taxonomy rather than by it.

4. Anomalous individuals

I shall now consider another range of possible anomalies which involve relationships not between taxonomic categories, but between these categories and descriptions of the individuals to whom they refer. A taxonomy is a set of categories with semantic definitions and encyclopaedic characterizations. Semantic knowledge is analytically true. Encyclopaedic knowledge is about things, not words; its truth is synthetic, i.e., empirically determined. Within encyclopaedic knowledge, two types of propositions have to be distinguished. Propositions of the first kind are considered as theoretically necessary; they constitute theories of things or, in other words, encyclopaedic definitions as opposed to semantic ones. Propositions of the second kind are contingent; they are not part of the encyclopaedic definitions of things. For instance:

[7] The salmon is a fish.

[8] The salmon is a migratory fish.

[9] Salmon are found in Scotland.

Here [7] is analytic; it would be a contradiction in terms to deny it. [8] is not semantically necessary but it is part of the theory or encyclopaedic definition of the salmon. A denial of [8] would not be a contradiction in terms but it would show ignorance of what a salmon is. [9] is contingent both with respect to the semantic and to the encyclopaedic definition of a salmon; its denial would involve neither contradiction nor ignorance of what a salmon is.

It is quite difficult to decide for a given taxonomy which propositions are part of the semantic definition of a species, which are part of its encyclopaedic definition, and which are not definitional at all. The only clearly analytic propositions are of the type:

[10] The S is a G

where S is a species and G a genus; and:

[11] The S_1 is not an S_2

[12] The G_1 is not a G_2

where S_1 and S_2 refer to different species and G_1 and G_2 to different genera. In other words, they are propositions which follow from the very principles of taxonomic classification.

The only propositions which are clearly not definitional are those which are not about the whole species or genus irrespective of time and place, as for instance [9].

On the other hand, propositions which ascribe a specific positive property to a genus or

to a species as a whole have a logical status which is much less clear. Consider:

[13] Birds have feathers

If [13] is part of the semantic definition of "bird", it should follow that

[14] This bird has no feathers

is a contradiction just as, say: "this husband has no wife". But that is not so. If [13] is part of the encyclopaedic definition of "bird", then [14] should always be false just as, say: "this piece of flesh contains no proteins". But that is not so. The chicken I had for lunch had no feathers, and yet was a bird. Similarly, if a lion loses its mane, or never had one, if a lizard loses its tail, if a cat is born with three legs, they do not as a result change species. They still conform to the definition of their species, even though they are anomalous.

We are faced, then, with an apparent paradox: either [13] is a contingent generalization of relative validity about birds--and the same should be true for their beaks, their laying eggs, and any other positive features one might wish to ascribe to them, which, intuitively, is hardly acceptable--or else animals which do not possess all the features of their species do not in fact belong to it, which is equally unacceptable. If it could be shown that this paradox admits of no solution, Mary Douglas' contention would thereby be proved right, since, then, any zoological taxonomy could not but give rise to anomalies. If the question is left pending with the paradox neither solved nor proved to be unsolvable, no conclusion can be drawn in this respect. However there is a solution to this paradox which at the same time disconfirms Mary Douglas' contention.

The statement [14] can be paraphrased as:

[15] This bird does not have its feathers

On the other hand [17] is not a paraphrase of [16]:

[16] This cat has no feathers

[17] This cat does not have its feathers

In other words, the difference between a featherless bird and a featherless cat is that, by definition, the bird has at least virtual feathers while the cat has none.

Consider again:

[18] a perch's comb

[19] a cock's mane

[20] a lion's crow

[21] an exaltation of sparrows

Cases [18] to [21] are semantic anomalies since by definition "comb" only applies to some birds, "mane" to some mammals, "crow" to cocks, and "exaltation" to larks. In other

words, it is analytic that certain features belong to certain species.

Other features belong to certain species not because of the meaning of the word referring to them but because of the encyclopaedic definition of these species. Consider:

[22] a turbot's song

[23] a sea urchin's tail

[24] a cat's burrow

These phrases are strange, not for semantic but for empirical reasons: turbot do not sing, sea-urchins have no tail, cats do not make burrows, but the words "song", "tail", and "burrow" are not semantically confined to particular species. Suppose now that a wicked cat should decide to dig a burrow. How would that differ from a rabbit digging one? In the following manner:

[25] the cat is making a burrow

[26] the rabbit is making its burrow

while [27] seems inappropriate:

[27] the cat is making its burrow.

In other words, that a rabbit should make a burrow is part of its encyclopaedic definition and it is "its" burrow. Our cat, on the other hand, just makes believe.

In short: a number of features are confined to particular species, either semantically or encyclopaedically. An individual animal need not possess all the features that belong to its species. It does not possess any of the features that are *semantically* confined to other species. (While a lion's roar might be comparable to a cock's crow, a lion could only "crow" metaphorically.) If it possesses features *encyclopaedically* confined to other species, it does not possess them in the same conceptual manner: it is not entitled to them in the same way.

What then may the definition of a species be made of, semantically and encyclopaedically? First, propositions on the pattern of [10]-[12] which are semantic and which follow from the taxonomic principle. Second, semantic or encyclopaedic propositions which ascribe a set of features to a given species. This does not imply that all members of that species actually possess these features, nor that they do not possess any others, but only this: that the specific features which they do not possess are missing, while even if the non-specific features they possess were lost, they would not be missing. In yet other terms, the definition is about the nature not the appearance of animals, and I am suggesting that such a distinction is involved in any folk taxonomy.

This format of taxonomic definitions is quite different from a set of criteria which would allow one to tell to which species a given animal belongs: while it can be perceived that an animal actually has feathers, it cannot be similarly perceived that it virtually has feathers. A definition is not a set of criteria for matching a percept with a concept, and such a set of criteria is not a definition. If, for instance, at this very moment I heard the

sound of hooves coming down the street, I would straightforwardly recognize the sound of horses passing, since not far from where I live, there are the barracks of the Garde Républicaine, a mounted corps, and since I have never seen herds of cows or zebra roaming through the streets of Paris. But these considerations, although part of my encyclopaedic knowledge, are of course not definitional of horses. On the other hand, it is part of my definition of horses that they are ruminants, but this is of little help in recognizing a horse. The encyclopaedic definition of a species is a theory of what that species intrinsically is. The criteria by which its members are actually identified determines a heuristic worth studying in its own right but different from the definition.

Anthropological work on folk taxonomies, and especially those which relate taxonomic and symbolic aspects are not always careful to distinguish, on the one hand, semantic from encyclopaedic definitions and, on the other hand, definition from identification criteria. Here I have only emphasized the logical significance of those distinctions. To establish them is in each case a matter of empirical investigations.

I take a herring, I paint it red, I cut off its tail and I put it in a swallow's nest: it is now pretty difficult to identify it at first sight. But at the same time there is no doubt that only one identification would be correct: it is a herring. The format suggested for taxonomic definitions of animals resolves the paradox which such situations seem to involve. By the same token, it should be clear that my red herring is aberrant not with respect to the taxonomic definition of herrings, but with respect to the criteria standardly used to identify them, that is to say, with respect to an encyclopaedic knowledge of herrings of which their encyclopaedic definition is only a small part.

Thus norms and definitions are quite different: a featherless bird, a cat digging burrows, a red herring are all anomalies, but they are still a bird, a cat, and a herring in conformity with the definition of their species. An animal does not belong to a species according to the features it actually possesses, but according to the features it is, so to speak, entitled to possess. I shall try to show how the postulation of an identity between these two sets of features partly characterizes a notion of norm. But conformity to this norm is not part of the definition. With respect to a taxonomic definition, there need not be any anomaly. If an animal does not actually possess a feature ascribed to it by its definition, then it possesses it virtually: not in its appearance but in its nature. In such conditions it would be hard for empirical evidence to contradict the definitions of folk taxonomies. These definitions are not falsifiable theories of natural species and their confrontation with the empirical world need not generate anomalies. The only anomalies to be observed in this respect are internal to discourse and independent of experience: they are metaphorical phrases using semantic anomalies as for instance in statements [18]-[21].

5. Taxonomy and knowledge

Folk taxonomies are often sophisticated and show a deep knowledge of the local environment, not always equalled by scientific zoology. Thus Bulmer and Tyler note in their study of frog taxonomy among the Karam of New Guinea:

Already since this paper was first drafted in 1965, one Karam discrimination, that between *kosoj* and *wyt* (initially both placed by the biologist in the same species, *Hyka becki*) has been substantiated as biologically valid. ... It is not inconceivable that the forms now known as *H. angiana* and *N. dispupta*

will turn out eventually to be complexes of sibling species and the Karam also to be justified in splitting these. (Bulmer & Tyler 1968: 376)

It would not be accurate, though, to say that the Karam have anticipated the work of the zoologists, or that the former were right where the latter were wrong. Only zoologists can be right or wrong in such matters. When zoologists discriminate a species, they are making a strong and falsifiable hypothesis about the genetic relationships among a set of animals. When the Karam discriminate a species, they are deciding that among all the differences observable in their fauna, some are relevant to their system of taxonomic definitions. Their decision may be subtle or not, useful or not, but it cannot be right or wrong.

Zoologists have a strong concept of a natural species. The Karam too have, according to Bulmer and Tyler, a concept of a natural species, but it is a weaker one which does not absolutely determine which discriminations are actually made. For instance,

there is a handful of cases, all applying to mammals, where the Karam believe that metamorphoses sometimes occur between taxa, each of which also reproduces after its kind, which suggests that they do not see separate ancestry and reproductive isolation as necessary features of the units they distinguish. (Bulmer & Tyler 1968: 335)

The Karam, further, group together several species under one category at the species level as if they were a single species, or distinguish varieties belonging to a single species as if they were different species, while being, we are told, "*well aware of what they are doing*" (Bulmer &Tyler 1968: 335; my italics). They are then remarkable observers. But should zoologists fail to incorporate in their taxonomy species distinctions of which they would otherwise be well aware, they would be in serious trouble. In other words, not only is the Karam concept of a species quite weak, but moreover taxonomic discrimination need not match actually perceived generic differences. In these conditions the Karam have no difficulty in conforming to the taxonomic principle. They can keep whatever piece of knowledge might cause problems outside their taxonomy, thereby ensuring that their classifications will not generate anomalies.

When Mary Douglas maintains that "[a]ny given system of classification must give rise to anomalies" (1966: 39), she is hazarding a most questionable proposition. Neither the structure of folk taxonomies, nor the manner in which they are used to describe experience, render anomalies inevitable.

While Mary Douglas's formulations seem to me to be mistaken, I do believe that they rest upon a fundamentally sound intuition. My purpose is not to eliminate this intuition but to explicate it in an acceptable and useful way. There is a relationship between anomaly and symbolism but it does not directly derive from a mismatch between experience and classification. It indirectly derives, I shall argue, from the relationship between norms and definitions. This approach should make it possible to explain why not only anomalous animals but also exemplary ones take on a symbolic value.

Apart from semantic definitions of taxonomic categories and encyclopaedic definitions of categorized species and genera, encyclopaedic memory contains zoological propositions the truth of which is relative and independent of taxonomy. Many of the propositions are of the following format:

[28] Given a feature *f* which specifically belongs to certain species, members of these species and they alone actually display this feature.

Propositions of this format are statistically true and, as such, crucial to identification of animals. Exceptions to these propositions (e.g., featherless birds or herrings in swallows' nests) pose problems not for categorization but for identification. There are a large number of contingent propositions on animals in any cultural encyclopaedia. Each of them is statistically true, i.e., admits of exceptions. However the *conjunction* of all these propositions is not true, not even statistically. On the contrary, most individual animals have a blemish of some sort and are an exception to one or several contingent propositions on the species to which they belong. Similarly, most species are an exception to one or several contingent propositions on their genus or on fauna in general. Perfect animals or a paradigmatic species are also statistical exceptions.

Hybrids, monsters, and perfect animals are marked exceptions to statistical knowledge. Is this in any way sufficient to explain why they should be of particular symbolic importance? I doubt it. Exceptions to statistically true propositions are expectable and should raise no major problem for conceptual thinking. That they do is something to be explained rather than an explanation. This, however, narrows down the problem and suggests that beside taxonomic definitions and statistical knowledge, there may be some idealized representations of the fauna in relationship to which statistical exceptions cause conceptual problems and get symbolically processed.

6. Ideal norms and symbolic animals

Imagine that most contingent and statistical propositions about a species were necessarily and absolutely true. Then their conjunctions would also be necessarily true and all members of this species would be perfect. They would all actually display the features which in their taxonomic definitions are only virtualities. The distinction between actual and virtual features could be abolished. Moreover, animals of this species would all possess--and necessarily so--features which, in the real world, only the majority of them possess and contingently so. These features could then be included into the encyclopaedic definition of the species. This enlarged definition would by itself provide sufficient identification criteria.

Imagine that most contingent and statistical propositions on a genus were necessarily and absolutely true, and true, therefore, the conjunction of these propositions. All the species within the genus would be paradigmatic. Marginal species would not exist: there would be no pangolin among mammals, no bats among rodents, etc.

Imagine again that most contingent propositions on fauna in general--and hence their conjunction--were necessarily and absolutely true. Marginal genera such as snakes among the Dorze would not exist at all.

No culture, no society ever mistakes this representation of an ideal world for reality. I know of no society either where such a representation would be fully spelled out, although some myths like that of Noah's ark and some institutions like zoos in modern society come close to doing so. I suggest, however, that fragments or approximations of this ideal representation are universally used as points of reference or of comparison in

representing the real world or in passing value judgments on individual species and genera.

While the taxonomic representation involves minor distinctions which are not always easy to observe, the ideal representation develops strong contrasts. One corresponds to actual experience; the other corresponds to ideal conditions for thought: if the ideal norm were an adequate representation of the world, humans need never doubt and never err. Normative discourse, however, is not a mere nostalgic evocation of an impossible world, devoid of any empirical significance, a pure fiction that would be developed in myths and tales without ever being confronted with actual knowledge of the world. The ideal norm is invoked in discourses about the real world in a way which seems to suggest that perhaps it is not humans but nature itself which stumbles and makes mistakes: that ordinary animals should be like perfect ones and that abnormal animals should not exist.

While taxonomy is consistent both internally and externally, the ideal norm gives rise to two kinds of anomalies: external anomalies when the world ostensibly deviates from the norm, and internal anomalies when the norm of a species ostensibly deviates from the norm of the genus to which it belongs.

The Bible, for instance, does not only distinguish ordinary animals which are edible from abominations which are prohibited. Among edible animals it also distinguishes those which because of their individual perfection or generic exemplariness can be used for sacrifice. It further distinguishes degrees of perfection: only the most perfect animals of exemplary species are suitable for fulfilling a vow. Animals which actually display all the virtual features of an exemplary species, but whose proportions are not ideal are at best suitable for a voluntary offering:

When a man presents a shared-offering to the Lord, whether cattle or sheep to fulfil a special vow or as a freewill offering, if it is to be acceptable it must be perfect; there shall be no defect in it. You shall present to the Lord nothing blind, disabled, mutilated, with running sore, scab, or eruption, nor set any such creature on the altar as a food-offering to the Lord. If a bull or a sheep is overgrown or stunted, you may make of it a freewill offering, but it will not be acceptable in fulfillment of a vow. If its testicles have been crushed or bruised, torn or cut, you shall not present it to the Lord; this is forbidden in your land. (Leviticus 22:21-24)

If any animal is defective, if it is lame or blind, or has any other serious defect, you must not sacrifice it to the Lord your God. Eat it in your settlements; both clean and unclean alike may eat it as they would the meat of gazelle or buck. (Deuteronomy 15:21-22)

In other words, some animals are perfect (with degrees of perfection) and may be sacrificed; others are abominable and cannot even be eaten; most animals are neither perfect nor abominable: they have food value but no marked symbolic value.

Here is a very different example. In European cities live animals are shown in four kinds of places: at the zoo, at fairs, at the circus, and recently in dolphinariums. Animals in zoos are expected to be paradigmatic: if the lion does not have a beautiful mane and fails to roar, if the elephant does not make use of its trunk, if the monkeys do not get up to monkey tricks, one feels vaguely disappointed. On the other hand, if a lioness has cubs she gets into the headlines and visitors flock to see her in her exemplary role as a watchful and jealous mother. In zoos, malformed animals are not to be seen.

Monsters which would be out of place in a zoo are quite at home at fairs. An extra leg, an extra hundred visitors. Half-animal, half-human monsters, mermaids, man-apes, etc., have the greatest success.

In this regard the circus is intermediary between the zoo and the fair. As at the zoo, animals must be physically perfect. Actually, outside the main show, they are often displayed in a zoo-like fashion in a menagerie. However, in the ring their behaviour must radically depart from the ideal norm of their species. Big cats, for instance, must perform tricks whose only function is to show their submission to their trainer. Still, from time to time they must roar convincingly and look dangerous so as to remind us of the norm from which they have been made to depart.

In a good dolphin show, on the other hand, the dolphins look as if they were doing as they please: they play among themselves or with their human partner and it is never too clear who is giving the orders. But the dolphin is itself already an anomaly: it is a great sea animal, swift and strong3/4this is the norm of the genus; at the same time it is an animal with a near-human intelligence: this ideal norm of the species contrasts not only with that of the genus, but also with that of the whole animal kingdom. The acts performed during the show alternately evoke these contrasting ideal norms: displays of near-human intelligence are followed by exercises of purely animal strength and speed.

Zoo and fair animals are not socialized. On the contrary, separated from each other and from the public they evoke at the zoo a perfect and a-social nature and at the fair an a-social anti-nature. Circus and dolphinarium animals physically conform to the norm; however they depart from it in their behaviour. In a Lévi-Straussian fashion we could say that the former constitute a metonymic society and the latter a metaphorical society: circus animals enter society from below as slaves of humans. It is fitting that they should look dangerous since, ultimately, they serve to confirm human supremacy. Dolphins, on the other hand, should look quite benign since the thrill of their display consists in evoking not a submissive and integrated fauna but an independent and potentially competitive animal society the idea of which, though at first attractive, might easily become sinister as in Karel Capek's novel *War with the Newts* (1937). While dolphin shows are quite recent, what they stand for in our culture has long been there and been represented in literary works.

Exhibitions of wild animals are not here to satisfy a simple curiosity: curiosity is never simple. They are cultural institutions which prompt people and especially children to think in a symbolic way about relations among animal species and between fauna and humankind.

Symbolic animals in the Torah are characterised by the fulfillment or the transgression of an ideal norm. Similarly, in our society, animals are symbolically exhibited in four separate settings which correspond to four distinct modes of fulfillment or transgression of the norm. This suggests that the way an individual animal or a species matches or contradicts the ideal norm may endow it with symbolic value. However, while this specifies the problem further, it does not yet solve it: what is the intellectual mechanism at work? Under what conditions is it effective?

The ideal norm can be invoked in describing an animal which either fulfills or violates it, without the resulting representation being particularly symbolic:

[29] This horse has all the qualities a horse should have.

[30] This horse is a monster: it has five legs and only one ear.

Compare [29]-[30] with [31]-[34] which on the contrary have a straightforward symbolic--and more specifically rhetorical--value:

[31] That's a horse worthy of the name!

[32] That's a real horse!

[33] You call that a horse?

[34] That nag is no horse!

In [29]-[30] the taxonomic identification is independent of the judgment of normality. In [31]-[34], on the other hand, the judgment of normality is put forward as modifying the taxonomic judgment and as either strengthening its import or as casting doubt on it: if the horse conforms to the ideal norm then it is a "real" horse; if it clearly departs from the norm, then its generic identity becomes dubious.

My hypothesis is that symbolism occurs when a judgment of normality is put forward as modifying a taxonomic identification, i.e., when the ideal norm is considered as an encyclopaedic component of the taxonomic definition. Logically, the norm cannot play such a role. Taxonomic identification is a logical pre-condition for any judgment of normality to be passed. For an individual animal to be a perfect or a monstrous horse, it must first be a horse. For the ostrich to be a deviant bird, it must first be a bird. For the snake to be an anomalous animal, it must first be an animal, etc. In no case, could a judgment of normality entail a modification of the identification, since if the identification turns out to have been wrong, then so does *a fortiori* the judgment of normality.

I find a horse anomalous because it has black and white stripes on its body until I realize I am looking at a zebra. When I give up my initial identification, I must by the same token give up my judgment of abnormality. It would be illogical to maintain that this horse is anomalous because it is a zebra, or that it is a zebra because it is an anomalous horse. Such an illogicality can only serve to echo a misjudgment and bring out its absurdity.

Conversely, if I identify a horse without being too sure and then discover that it conforms to the ideal norm of a horse, I feel surer of my identification. But the horse is not more of a horse or more "real" than I initially thought it was. Taxonomic definitions are of the all-or-nothing type. An animal does or does not belong to a given species; one can be more or less sure that it belongs to it but it cannot belong to it more or less.

Yet in some statements a real horse is not an animal which would really be a horse as opposed to a donkey, a mule or a zebra, or as opposed to a wooden or a china horse; a horse is said to be "true" or "real" as opposed to other animals which are equally horses

from a taxonomic point of view. It can be said that the eagle is more of a bird than the ostrich, the bat almost a bird, the pangolin only just a mammal, of an old nag that it is not a real horse, of a cock that crows at midnight that it is not a true cock (it is the devil of course), etc. Such statements can take many different forms on different occasions, with different speakers and different cultures; some are expressions of beliefs, others are mere tropes; sometimes they may be developed into a systematic discourse on the fauna. What is important here, however, is not the diversity of these statements, but the general form of the conceptual representations which underlie them and can just as well exist in the mind without being verbalized: in all these cases a normative judgment is considered as modifying the taxonomic identification which it logically presupposes. Here is the paradox that causes the representation of an animal or of a species to be processed symbolically.

When the Bible prescribes that only perfect animals can be sacrificed, underlying this prescription is the idea that only perfect animals really belong to their species and genus. When certain species are forbidden as food because they are cloven-hooved but don't chew the cud or because they chew the cud without being cloven-hooved, underlying this proscription is the idea that these species do not properly belong to their genus. In each of these cases the underlying idea is a paradox which could only be solved in an imaginary world where the ideal norm would be fulfilled.

When the public seeks in the appearance or the behaviour of animals in the zoo proof that they are "real" elephants, "real" monkeys etc.; when monsters at the fair are seen as nature's own mistakes; when circus animals are seen as individuals removed from their species, and dolphins as animals removed from animality by their very generic features, in each case a paradox is involved: a representation where conformity to the ideal norm is considered a condition for conformity to the taxonomic definition rather than the other way around. The conceptual representation is constructed as if the ideal norm had to be fulfilled, as if statistical and contingent propositions were absolutely and necessarily true and hence part of the very definition of species, of genera, of the animal kingdom. Thus, these conceptual representations operate not as descriptions of the real world but as evocation, on the basis of a knowledge of the real world, of an ideal world where definitions would encompass all identification criteria, and where the only mistakes would be made not by humans but by nature.

Symbolic representations of animals do not serve to correct the taxonomic schema, which is adequate. On the contrary, humans must know the world to wish it were different, have definitions to conceive of norms, assume a rational description to elaborate a symbolic representation which modifies it. For animals to be thought of symbolically they must have been thought of taxonomically. From fantastic animals to perfect or unworthy horses, symbolic representations of animals serve neither to fill in blanks, nor to space out the taxonomy. They evoke a worse world, that of anomaly, and a better one, that of perfection. They provide a contrasted and contrasting imaginary background for knowledge of the world as it is.

7. Conclusion

I have tried in this paper to help make more explicit and harmonize our understanding of zoological taxonomies on the one hand and of animal symbolism on the other. My

approach has been to consider the general conceptual conditions which bear on zoological representations, i.e., the principles of classification and the relationships between classification and contingent zoological knowledge. When these conditions are violated, when these principles are transgressed, when these relationships are reversed, the resulting representations meet obstacles in conceptual processing and are symbolically processed.

In the same way, to any conceptual domain with specific conditions--be it that of numbers, of colours, of artifacts, etc. --correspond specific violations of these conditions and a specific symbolic domain. Just as it is impossible to postulate the structure of a conceptual domain (and in particular the norm it may contain), it is impossible to take for granted, on the basis of some general theory, the structure of a symbolic domain. But in each and every case, conceptual and symbolic domains should be studied together without however being confused, because they are based on mechanisms which are at the same time distinct and interdependent.

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