

Cultural Selection

Agner Fog

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1. INTRODUCTION

This book describes a new interdisciplinary theory for explaining cultural change. In contrast to traditional evolutionist theories, the present theory stresses the fact that a culture can evolve in different directions depending on its life conditions.

Cultural selection theory explains why certain cultures or cultural elements spread, possibly at the expense of other cultures or cultural elements which then disappear. Cultural elements include social structure, traditions, religion, rituals, art, norms, morals, ideologies, ideas, inventions, knowledge, technology, etc. This theory is inspired by Charles Darwin's idea of natural selection, because cultural elements are seen as analogous to genes in the sense that they may be reproduced from generation to generation and they may undergo change. A culture may evolve because certain cultural elements are more likely to spread and be reproduced than others, analogously to a species evolving because individuals possessing certain traits are more fit than others to reproduce and transmit these traits to their offspring.

In a society with a free market economy, competition plays a major role in determining the course of social and economic evolution. Selection theory is indispensable for analyzing this process because the result of each competition event is a selection. The same applies to democratic elections. Each election is a selection event, and an analysis of the selection criteria is necessary for a scientific analysis of the development of a democratic society. In primitive societies without a monetary system and without democracy, the course of development may be determined by other political systems or by the outcomes of conflict and war - still different kinds of selection. Obviously, a systematic application of selection theory in social science is long overdue!

A cultural selection process can be viewed from two opposing angles. Assume, for example, that we ask two different persons why a particular pop song has become a hit. Person *A* says it is because people like that kind of music, while *B* says it is because this song has a catchy tune. In reality they are both saying the same thing, because a catchy tune is indeed defined as a tune people like. But *A* is seeing the selection of this song as due to a characteristic of the persons: they have a taste for this tune, while *B* sees it as a characteristic of the song: it has a tune

that matches people's taste. *A*'s interpretation can be called anthropocentric while *B*'s point of view is the opposite. We can take the non-anthropocentric view even further by comparing pop songs or fashions or other cultural phenomena with parasites competing for access to people's minds. Of course a song or a fashion does not have some kind of magic soul or a will to become popular - this is just a metaphor which turns out to be very useful for explaining certain irrational or unintended social phenomena.

Humans have a peculiar ability to rationalize unconscious motives, i.e. to invent rational reasons justifying their irrational behavior. Most actions therefore seem rational and planned - even if they are not. Not all social changes are planned and decided on in a democratic manner to the benefit of all. Unconscious motives in the social participants, unintended consequences of rational choices, unintended macroscopic consequences of the sum of the actions of many individuals, uncontrollable consequences of conflicts, ecological factors, economic competition, and many other mechanisms influence the evolution of societies in directions that may be unforeseen, and that may not be beneficial to everyone. The powerful paradigm of cultural selection theory challenges traditional sociology by its superior ability to explain such irrational factors in social evolution.

Phenomena like religion, ideology, politics, morals, and norms play a fundamental role in any culture, and the study of cultural change is impossible without a study of changes in these rules of conduct and philosophies of life. You cannot describe a belief or ideology in its own terms without losing the scientific objectivity. It is necessary to achieve a scientific distance - an external viewing-angle - in order to study why a belief system evolves in a certain direction, and in order to compare different belief systems on equal terms. The scientist has to see himself as an atheistic nihilist or as a biologist studying the most peculiar animal on Earth in order to maintain a sufficient degree of objectivity towards different ideologies and philosophies. The non-anthropocentric standpoint may be very helpful here. Unfortunately, we often have a problem accepting this way of thinking because it is incompatible with our anthropocentric worldview. A considerable amount of abstract thinking is needed here.

It is hardly possible to obtain complete objectivity when studying social phenomena. Unfortunately, the acknowledgment of this fact has led

several scholars to totally drop the requirement for objectivity, and consciously mingle science with ideology. Feminism and marxism¹ are well-known examples. In my opinion, this subjective tendency is dangerous for science, and I will therefore strive towards the highest possible degree of objectivity, especially when studying controversial ideological or religious phenomena.

You will notice that I am combining theories from several different scientific disciplines without any regard to the ideological conflicts that prevail between certain of these disciplines, and without any regard to the fact that some disciplines are 'in' and others are 'out' for ideological reasons.

There is a huge gap between the natural sciences where tradition dictates exactness in models and definitions, and on the other hand the social and humanistic sciences where exact models would be rejected for being reductionistic and for ignoring human diversity and uniqueness. My attempt to combine theories from so different sciences has therefore been quite a challenge. The distance between the exact and the soft sciences is so immense that any compromise between these two points of view will be unacceptable to both parties. Whichever camp the reader is in, (s)he will surely have problems with my concepts and models being either too rigorous and reductionistic, or too sloppy and inexact. This is the price you have to pay for this kind of interdisciplinary research!

The ideal of scientific objectivity notwithstanding, it would be naive of the social scientist to sit back in his ivory tower and ignore any political consequences of his research. The theory presented in this book has important political consequences that need to be discussed. It is necessary, however, to keep a clear head and distinguish between the pure theory and the political discussions to which this theory gives rise. These political discussions are therefore confined to chapter 14.

1. The rules for using capital letters in the english language are rather inconsistent, and everybody seems to capitalize whatever they think is important. This approach is incompatible with my striving towards value-neutrality. As a consequence of this, I have decided to capitalize only names of persons, places, and organizations (including mythological names), but not concepts derived from names, such as 'darwinist', 'christianity', or 'british'.

The idea that cultural inheritance can be the basis of a selection process is almost as old as Darwin's theory of natural selection in biological evolution. Several theorists have independently described the analogy between genetic and cultural evolution, but the further elaboration of this theory has been hampered by a never-ending conflict between different worldviews, and practical applications have so far been few and insignificant. The vacillating history of the theory of cultural selection is described in chapter 2. This chapter also gives an overview of the different theoretical schools that relate to cultural selection. Chapter 2 can be skipped or read later if the reader is not interested in the history of science. Chapter 3 and 4 can not be skipped, however. Chapter 3 explains the fundamental concepts of cultural selection theory, and chapter 4 elaborates the theory into a new model explaining why different cultures evolve in very different directions. The succeeding chapters are applications of the theory to different historical as well as contemporary cultural phenomena. A concluding discussion is found in chapter 13.

2. THE HISTORY OF CULTURAL SELECTION THEORY

2.1 Evolutionism

Lamarck and Darwin

The idea of cultural selection first arose in Victorian England - a culture that had more success in the process of cultural selection than any other society. But before we talk about this theory we must take a look at the theory of biological evolution, founded by Lamarck and Darwin.

The French biologist Jean-Baptiste de Lamarck was the first to talk about the evolution of species. He believed that an animal, which has acquired a beneficial trait or ability by learning, is able to transmit this acquired trait to its offspring (Lamarck 1809). The idea that acquired traits can be inherited is called *lamarckism* after him. Half a century later the English biologist Charles Darwin published the famous book "*On the origin of Species*" in which he rejected Lamarck's hypothesis and put forward the theory that the evolution of species happens by a combination of *variation, selection, and reproduction*.

It was a big problem for the evolutionary thinkers of that time that they did not know the laws of inheritance. Indeed the Austrian monk Gregor Mendel at around the same time was carrying out a series of experiments, which led him to those laws of inheritance that today carry his name and constitute the foundation of modern genetics, but the important works of Mendel did not become generally known until the beginning of the twentieth century, and were thus unknown to nineteenth-century British philosophers. They knew nothing about genes or mutations, and consequently Darwin was unable to explain where the random variations came from. As a consequence of the criticism against his theory Darwin had to revise his *Origin of Species* and assume that acquired traits can be inherited, and that this was the basis of the variation that was necessary for natural selection to be possible (Darwin 1869, 1871). In 1875 the German biologist August Weismann published a series of experiments that disproved the theory that acquired traits can be inherited. His book, which was translated into English in 1880-82, caused lamarckism to lose many of its adherents.

Bagehot

Although Darwin had evaded the question of the descent of man in his first book it was fairly obvious that the principle of natural selection could apply to human evolution. At that time no distinction was drawn between race and culture, and hence the evolution from the savage condition to modern civilized society came to be described in darwinian terms. The earliest example of such a description is an essay by the british economist Walter Bagehot in *The Fortnightly* in 1867. Bagehot imagined that the earliest humans were without any kind of organization, and he described how social organization might have originated:

"But when once polities were begun, there is no difficulty in explaining why they lasted. Whatever may be said against the principle of 'natural selection' in other departments, there is no doubt of its predominance in early human history. The strongest killed out the weakest, as they could. And I need not pause to prove that any form of polity is more efficient than none; that an aggregate of families owning even a slippery allegiance to a single head, would be sure to have the better of a set of families acknowledging no obedience to anyone, but scattering loose about the world and fighting where they stood. [...] What is there requisite is a single government - call it Church or State, as you like - regulating the whole of human life. [...] The object of such organizations is to create what may be called a cake of custom."

When we look at this citation with contemporary eyes, it seems like a clear example of cultural selection: The best organized groups vanquished the poorly organized groups. But in Bagehot's frame of reference the concept of cultural selection hardly had any meaning. As a consequence of lamarckism *no distinction was drawn between social and organic inheritance*. Nineteenth century thinkers believed that customs, habits, and beliefs would precipitate in the nervous tissue within a few generations and become part of our innate dispositions. As no distinction was drawn between race and culture, social evolution was regarded as racial evolution. Initially Bagehot regarded his model for human evolution as analogous with, but not identical to, Darwin's theory - not because of the difference between social and organic inheritance, but because of the difference between humans and animals. Bagehot did not appreciate that humans and animals have a common descent. He even discussed whether the different human races have each their own Adam and Eve (Bagehot 1869). He did, of course, revise his opinions in 1871 when Darwin published *The Descent of Man*.

Despite these complications, I do consider Bagehot important for the theory of cultural selection because he focuses on customs, habits, beliefs, political systems and other features which today are regarded as essential parts of culture, rather than physical traits which today we mainly attribute to organic inheritance. It is important for his theory that customs etc. can be transmitted not only from parent to child, but also from one family to another. When one people defeats another people in war and conquers their land, then the victor's art of war will also be transferred to or imitated by the defeated people, so that an ever stronger art of war will spread. Interestingly, unlike later philosophers, Bagehot does not regard this natural evolution as necessarily beneficial: It favors strength in war, but not necessarily other skills (Bagehot 1868).

Tylor

The anthropologist Edward B. Tylor has had a significant influence on evolutionary thought and on the very concept of culture. The idea that modern civilized society has arisen by a gradual evolution from more primitive societies is primarily attributed to Tylor. The predominant view at that time was that savages and barbarian peoples had come into being by a degeneration of civilized societies. Tylor's books contain a comprehensive description of customs, techniques and beliefs in different cultures, and how these have changed. He discusses how similarities between cultures can be due to either diffusion or parallel independent evolution. Darwin's theory about natural selection is not explicitly mentioned, but he is no doubt inspired by Darwin, as is obvious from the following citation:

"History within its proper field, and ethnography over a wider range, combine to show that the institutions which can best hold their own in the world gradually supersede the less fit ones, and that this incessant conflict determines the general resultant course of culture." (Tylor 1871, vol. 1:68-69).

Tylor was close to describing the principle of cultural selection as early as 1865, i.e. before the abovementioned publications by Bagehot:

"On the other hand, though arts which flourish in times of great refinement or luxury, and complex processes which require a combination of skill or labour hard to get together and liable to be easily disarranged, may often degenerate, yet the more homely and useful the art, and the less difficult the conditions for its exercise, the less likely it is to

disappear from the world, unless when superseded by some better device." (Tylor 1865:373).

While Darwin was dealing with *the survival of the fittest*, Tylor was more concerned with *the survival of the unfit*. The existence of outdated institutions and customs, which no longer had any usefulness, were Tylor's best proof that modern society had evolved from a more primitive condition. Tylor's attitude towards darwinism seem to have been rather ambivalent, since his only reference to Darwin is the following enigmatic statement in the preface to the second edition of his principal work *Primitive Culture*:

"It may have struck some readers as an omission, that in a work on civilization insisting so strenuously on a theory of development or evolution, mention should scarcely have been made of Mr. Darwin and Mr. Herbert Spencer, whose influence on the whole course of modern thought on such subjects should not be left without formal recognition. This absence of particular reference is accounted for by the present work, arranged on its own lines, coming scarcely into contact of detail with the previous works of these eminent philosophers." (Tylor 1873).

This ambiguity has led to disagreement among historians of ideas about Tylor's relationship to darwinism. Greta Jones (1980:20), for example, writes that Tylor dissociated himself from darwinism, whereas Opler (1965) goes to great lengths to demonstrate darwinian tendencies in Tylor's *Primitive Culture*, and even categorizes Tylor as *cultural darwinist*. This categorization is a considerable exaggeration since Tylor did not have any coherent theory of causation (Harris 1969, p. 212). A central issue has been whether nineteenth century evolutionary thinkers were racist or not, i.e. whether they attributed the supremacy of civilized peoples to organic inheritance or culture. This controversy is meaningless, however, because no clear distinction was drawn at that time between organic and social inheritance. Tylor used the word race synonymously with culture or tribe, as did most of his contemporaries.

Spencer

As early as 1852, before the publication of Darwin's *Origin of Species*, the prominent english philosopher Herbert Spencer described the principle that the most fit individuals survive while the less fit die in the struggle for existence. This principle initially had only an inferior importance in Spencer's evolutionary philosophy, which was based on the idea that all kinds of evolutions follow the same fundamental

principles. The Universe, the Earth, the species, the individuals, and society all evolve by the same pattern and in the same direction, according to Spencer, namely towards ever more differentiation and equilibrium. It was all part of one and the same process:

"... there are not several kinds of Evolution having certain traits in common, but one Evolution going on everywhere after the same manner." (Spencer, H. 1862).

In 1857, only two years before Darwin's book about the origin of species, Spencer described the cause of this evolution as "*that ultimate mystery which must ever transcend human intelligence*". (Spencer, H. 1857).

The evolution of societies is going through four stages, according to Spencer: Out of the unorganized savage condition came the first barbarian societies of nomads and herders. These have later been united into towns and nation states, called *militant societies*. The last stage in the evolution is called the *industrial society*, which will continue to evolve towards equilibrium, zero growth, peace and harmony.

Social evolution is primarily determined by external factors, such as climate, fertility of the soil, vegetation, fauna, and the basic characteristics of the humans themselves. Secondary factors include modifications imposed by the humans on their environment, themselves, and their society, as well as interaction with other societies. The main driving force in this evolution is population growth. The continued increase in population necessitates ever more effective food production methods, and hence an increasing degree of organization, division of labor, and technological progress.

War plays a significant role in the transition from the barbarian to the militant society. Any war or threat of war necessitates the formation of alliances and establishment of a strong central government. The militant society is therefore characterized by a strong monopoly of power to which the population must submit. The end result of a war is often the fusion of two societies into one bigger society, whereby the two cultures get mixed and the best aspects from each culture is preserved. This creation of bigger and bigger states makes possible the last step in Spencer's evolutionary scheme: industrialization. The rigid and totalitarian central government is still an impediment to industrialization

because it obstructs private economic initiatives and scientific progress. The militant society will therefore in times of peace move towards more individual freedom and democracy, and hence become what Spencer calls the industrial society (Spencer, H. 1873, 1876).

Charles Darwin's book about the origin of species exerted an important influence on Spencer's philosophy, although he never totally rejected lamarckism. The principle of *the survival of the fittest* is only applicable to the evolution of the species and societies, not to the evolution of the Earth or the Universe, and neither to the ontogenetic development of the individual. The principle of natural selection could therefore not acquire the same central position in Spencer's evolutionary thought that it had in Darwin's.

Spencer applied the principle of *the survival of the fittest* to the formation of the first primitive societies in the same way as Bagehot did:

"... this formation of larger societies by the union of smaller ones in war, and this destruction or absorption of the smaller un-united societies by the united larger ones, is an inevitable process through which the varieties of men most adapted for social life, supplant the less adapted varieties." (Spencer, H. 1893)

Just like Bagehot and Tylor, Spencer hardly distinguished between social and organic inheritance. It is therefore difficult to decide whether the above citation refers to genetic or cultural selection. Spencer does, however, apply the principle of natural selection to phenomena which from a contemporary point of view can only be regarded as social heritage. Spencer describes the origin of religion in this way:

"If we consider that habitually the chief or ruler, propitiation of whose ghost originates a local cult, acquired his position through successes of one or other kind, we must infer that obedience to the commands emanating from him, and maintenance of the usages he initiated, is, on the average of cases, conducive to social prosperity so long as conditions remain the same; and that therefore this intense conservatism of ecclesiastical institutions is not without a justification. Even irrespective of the relative fitness of the inherited cult to the inherited social circumstances, there is an advantage in, if not indeed a necessity for, acceptance of traditional beliefs, and consequent conformity to the resulting customs and rules." (Spencer, H. 1896).

The principle of *the survival of the fittest* can obviously lead to a philosophy of the right of the superior forces, i.e. a *laissez faire*-policy. To Spencer this principle applied primarily to the individual. He was against any kind of social policy for the benefit of the poor and weak individuals. Spencer was a leading advocate of "*competitive individualism*" in economic and social matters (Jones, G. 1980). He does not see egoism and altruism as opposites, but as two sides of the same coin. Whoever wants the best for himself also wants the best for society because he *is* part of society, and egoism thereby becomes an important driving force in the evolution of society (Spencer, H. 1876).

Spencer did not, however, support *laissez faire*-policy when it came to international wars (Schallberger 1980). He was very critical of Britain's increasing militarization and imperialism which he saw as an evolutionary retrogression. He also warned about the fact that in modern society it is mostly the strongest men who go to war and die, whereas the weakest remain back and reproduce. Persistent optimist that he was, Spencer still believed that wars were a transitory stage in human evolutionary history:

"But as there arise higher societies, implying individual characters fitted for closer co-operation, the destructive activities exercised by such higher societies have injurious re-active effects on the moral natures of their members - injurious effects which outweigh the benefits resulting from extirpation of inferior races. After this stage has been reached, the purifying process, continuing still an important one, remains to be carried on by industrial war - by a competition of societies during which the best, physically, emotionally, and intellectually, spread most, and leave the least capable to disappear gradually, from failing to leave a sufficiently-numerous posterity." (Spencer, H. 1873).

Spencer's theories have first and foremost been criticized for the paradox that the free rein of the superior forces should lead to harmony. He denied the disadvantages of the capitalist society in order to be able to maintain his *a priori* belief that evolution is the same as progress, said his opponents. It is said, that Spencer in his older days became more disillusioned and began to realize this problem (Schallberger 1980).

Brunetière

The french historian of literature Ferdinand Brunetière was inspired by Darwin's evolutionary theory, and thought that literature and other arts evolved according to a set of rules which were analogous to, but not identical to, the rules that govern biological evolution:

"Et, dès à présent, si l'apparition de certaines espèces, en un point donné de l'espace et du temps, a pour effet de causer la disparition de certaines autres espèces; ou encore, s'il est vrai que la lutte pour la vie ne soit jamais plus âpre qu'entre espèces voisines, les exemples ne s'offrent-ils pas en foule pour nous rappeler qu'il n'en est pas autrement dans l'histoire de la littérature et de l'art?" (Brunetière 1890).

Although the concept of cultural inheritance is not explicitly mentioned by Brunetière, he does undeniably distinguish between race and culture. He says that the evolution of literature and art depend on race as well as on environment, social and historical conditions, and individual factors². Furthermore, he does distinguish between evolution and progress.

Stephen

The first to give a precise formulation of cultural selection theory was Leslie Stephen. In his book *The science of ethics* (1882) he draws a clear distinction between social and organic evolution, and explains the difference between these two processes by examples such as the following:

"Improved artillery, like improved teeth, will enable the group to which it belongs to extirpate or subdue its competitors. But in another respect there is an obvious difference. For the improved teeth belong only to the individuals in whom they appear and to the descendants to whom they are transmitted by inheritance; but the improved artillery may be adopted by a group of individuals who form a continuous society with the original inventor. The invention by one is thus in certain respects an invention by all, though the laws according to which it spreads will of course be highly complex."

². Brunetières book *L'Évolution des Genres dans l'Histoire de la Littérature* (1890) was planned as a work in four volumes, of which volume two should describe the general principles for the evolution of literature. Although the first volume was reprinted in several editions, the planned following volumes were never published.

The distinction between cultural and organic evolution is important to Stephen because the organic evolution is so slow that it has no relevance in social science. Stephen also discusses what the *unit of selection* is. In primitive tribal wars it may be an entire tribe that is extinguished and replaced by another tribe with a more effective art of war; but in modern wars between civilized states it is rather one political system winning over another, while the greater part of the defeated people survive. Ideas, too, can be selected in a process which does not depend on the birth and death of people. Stephen is thus aware that different phenomena spread by different mechanisms, as we can see from the following citation:

"Beliefs which give greater power to their holders have so far a greater chance of spreading as pernicious beliefs would disappear by facilitating the disappearance of their holders. This, however, expresses what we may call a governing or regulative condition, and does not give the immediate law of diffusion. A theory spreads from one brain to another in so far as one man is able to convince another, which is a direct process, whatever its ultimate nature, and has its own laws underlying the general condition which determines the ultimate survival of different systems of opinion." (Stephen 1882).

Leslie Stephen's brilliant theories of cultural evolution have largely been ignored and seem to have had no influence on later philosophers. Benjamin Kidd's work "*Social Evolution*" from 1894, for instance, does not mention cultural selection.

Kidd

Benjamin Kidd was inspired by both Marx and Spencer (mostly Spencer) but criticized both. It may seem as if he tried to strike the golden mean. He granted to the marxists that the members of the ruling class were not superior. He believed that the ruling families were degenerating so that new rulers had to be recruited from below. He was therefore against privileges. He denied the innate intellectual superiority of the white race, which he ascribed to social heritage, by which he meant accumulated knowledge. On the other hand he agreed with the racists that the english race was superior when it came to "*social efficiency*", by which he meant the ability to organize and to suppress egoistic instincts to the benefit of the community and the future. Kidd attributed this altruism to the religious instinct. Curious as it may seem, he explained the evolution of religion by natural selection of the strongest race on the basis of organic inheritance. Although Kidd refers to Leslie Stephen in other

contexts, he never mentions selection based on social heritage. As a consequence of Weismann's rejection of lamarckism, Kidd saw an eternal competition as necessary for the continued evolution of the race. He therefore rejected socialism, which he believed would lead to degeneration.

2.2 Social darwinism

The difficulty in distinguishing between social and organic inheritance continued until well after world war I. The mass psychologist William McDougall, for example, described the selection of populations on the basis of religion, military strength, or economical competence, without talking about social inheritance. These characters were in McDougall's understanding based on inborn dispositions in the different races (McDougall 1908, 1912).

This focus on natural selection and the survival of the fittest as the driving force in the evolution of society paved the way for a multitude of philosophies that glorified war and competition. The aryan race was regarded as superior to all other races, and the proofs were seen everywhere: australians, maoris, red indians, and negroes - everybody succumbed in the competition with the white man.

The term *social darwinism* was introduced in 1885 by Spencer's opponents and has since then been applied to any social philosophy based on darwinism (Bannister 1979). The definition of this term has been lax and varying, depending on what one wanted to include under this invective.

It was Spencer, not Darwin, who coined the expression "*the survival of the fittest*". Implicit in this formulation lies the assumption that *fittest* = *best*, i.e. the one who survives in the competition is the best. Only many years later was it realized that this expression is a tautology, because *fitness* is indeed defined as the ability to survive - hence: *the survival of the survivor* (Peters 1976).

An implicit determinism was also buried in Darwin's expression "*natural selection*". What was natural was also beneficial and desirable. Humans and human society was, in the worldview of the social darwinists, part of nature, and the concept of naturalness had then, as it has today, an almost magical appeal. Regarding man as part of nature must, in its

logical consequence, mean that everything human is natural - nothing is unnatural. The concept of naturalness is therefore meaningless, but nobody seems to have realized that this was no objective category, but an arbitrary value-laden concept. By calling the evolution natural, you preclude yourself from choosing. Everything is left to the free reign of the superior forces. Nobody dared to break the order of nature, or to question the desirability of the natural selection. Evolution and progress were synonyms.

Social darwinism was used to justify all kinds of liberalism, imperialism, racism, nazism, fascism, eugenics, etc. I shall refrain from listing the numerous ideologies that social darwinism has fostered - many books have already been written on that subject - but merely remark that social darwinism was not rejected until the second world war had demonstrated the horrors to which this line of thought may lead.

Keller

The american sociologist Albert G. Keller criticized the previous social darwinists for basing their evolutionary theory on organic inheritance (1916). He rejected that acquired characteristics such as tradition and moral could be inherited by referring to Weismann.

Keller was inspired by Darwin's general formula for biological evolution: that the conjoined effect of variation, selection and reproduction leads to adaptation. By simple analogy he defined social variation, social selection, and social reproduction. Keller regarded this idea as his own. He did of course refer to several british social thinkers, including Spencer and Bagehot, but he interpreted their theories as based on organic inheritance. He had no knowledge of Leslie Stephen.

Keller's book is a systematic examination of the three factors: variation, selection, and reproduction, and hence the first thorough representation of cultural selection theory. Many years should pass before another equally exhaustive discussion of cultural selection was published. Keller described many different selection mechanisms. He used the term *automatic selection* to designate the outcome of conflicts. This could happen with or without bloodshed. The opposite of automatic selection was labeled *rational selection*, i.e. the result of rational decisions based on knowledge. Keller drew a clear distinction between biological and cultural selection and between biological and cultural fitness. He maintained that the two processes were in conflict with each other and

would lead in different directions (Keller 1916). The social reproduction was carried by tradition, education, belief, and worship of ancestors. Religion was described as a very strong preserving and guiding force:

"Discipline was precisely what men needed in the childhood of the race and have continued to require ever since. Men must learn to control themselves. Though the regulative organization exercised considerable discipline, its agents were merely human; the chief had to sleep occasionally, could not be everywhere at once, and might be deceived and evaded. Not so the ghosts and spirits. The all-seeing daimonic eye was sleepless; no time or place was immune from its surveillance. Detection was sure. Further, the penalty inflicted was awesome. Granted that the chief might beat or maim or fine or kill, there were yet limits to what he could do. The spirits, on the other hand, could inflict strange agonies and frightful malformations and transformations. Their powers extended even beyond the grave and their resources for harm outran the liveliest imaginings [...] there is no doubt that its disciplinary value has superseded all other compulsions to which mankind has ever been subject." (Sumner & Keller 1927).

Keller's criticism of social darwinism (1916) was purely scientific, not political, and he was an adherent of eugenics, which until the second world war was widely regarded as a progressive idea.

2.3 Functionalism

Spencer imagined society as an organism, where the different institutions are comparable with those organs in an organism that have similar functions. The government, for example, was regarded as analogous with a brain, and roads were paralleled with veins. This metaphor has been popular among later social scientists and led to a line of thought called functionalism. This theoretical school is concerned with analyzing what *function* different institutions have in society. Functionalism is therefore primarily a static theory, which seldom concerns itself with studying change. Even though evolutionism was strongly criticized in this period, there was no fundamental contradiction between evolutionism and functionalism, and some outstanding functionalists have expressed regret that evolutionism was unpopular:

"Evolutionism is at present rather unfashionable. Nevertheless, its main assumptions are not only valid, but also they are indispensable to the field-worker as well as to the student of theory." (Malinowski 1944).

Functionalists defended their lack of interest in evolutionary theory by claiming that a structural and functional analysis of society must precede any evolutionary analysis (Bock 1963). One of the most famous anthropologists Alfred R. Radcliffe-Brown had the same view on evolutionism as his equally famous colleague Bronislaw Malinowski (Radcliffe-Brown 1952). He drew a distinction between different kinds of changes in a society: firstly, the fundamental changes in society as an adaptation to altered outer conditions; secondly, the adaptation of different social institutions to each other; and thirdly, the adaptation of individuals to these institutions. Radcliffe-Brown described these changes only in general terms as "*adjustment*" and "*adaptation*".

Malinowski, on the other hand, goes into more detail with evolutionary theory. A cultural phenomenon can, according to Malinowski, be introduced into a society either by innovation or by diffusion from another society. The maintenance of the phenomenon then depends on its influence on the fitness of the culture, or its "*survival value*". Malinowski attributes great importance to diffusion in this context. Since cultural phenomena, as opposed to genes, can be transmitted from one individual to another or from one society to another, then wars should not be necessary for the process of cultural evolution, according to Malinowski. A degenerating society can either be incorporated under a more effective society or adopt the institutions of the higher culture. This selection process will result in greater effectivity and improved life conditions (Malinowski 1944).

A synthesis between evolutionism and functionalism should certainly be possible, since the selection theory gives a possible connection between the function of a cultural institution and its origin. A functional institution will win over a less effective institution in the process of cultural selection (Dore 1961). Considering the domination of functionalist thought, it is no surprise that evolutionism got a renaissance from about 1950.

2.4 Neo-evolutionism

The name "*neo-evolutionism*" implies that this is something new, which is somewhat misleading. Some neo-evolutionists rejected this term and called their science "*plain old evolutionism*" - and so it was! (Sahlins & Service 1960, p. 4). The tradition from Spencer and Tylor was continued without much novel thinking. The neo-evolutionists focused on

describing the evolution of societies through a number of stages, finding similarities between parallel evolutionary processes, and finding a common formula for the direction of evolution. One important difference from nineteenth century evolutionism was that the laws of biological inheritance now were known to everyone. No one could carry on with confusing genetic and social inheritance, and a clear distinction was drawn between racial and social evolution. Theories were no longer racist, and the old social darwinism was rejected.

Whereas genetic inheritance can only go from parent to child, the cultural heritage can be transmitted in all directions, even between unrelated peoples. The neo-evolutionists therefore found *diffusion* important. They realized that a culture can die without the people carrying that culture being extinguished. In other words, the cultural evolution does not, unlike the genetic evolution, depend on the birth and death of individuals (Childe 1951).

An important consequence of diffusion is *convergence*. In prehistoric primitive societies social evolution was divergent. Each tribe adapted specifically to its environment. But in modern society communication is so effective that diffusion plays a major role. All cultures move in the same direction because advantageous innovations spread from one society to another, hence convergence (Harding 1960, Mead 1964).

The neo-evolutionists considered it important to find a universal law describing the direction of evolution:

"To be an evolutionist, one must define a *trend* in evolution..." (Parsons 1966, p. 109)³.

And there were many suggestions to what this *trend* was. Childe (1951) maintained that the cultural evolution proceeded in the same direction as the biological evolution, and in fact had replaced the latter. As an example, he mentioned that we put on a fur coat when it is cold instead of developing a fur, as the animals do. Spencer had already characterized the direction of evolution by ever increasing complexity and integration, and this idea still had many adherents among the neo-evolutionists (Campbell 1965, Eder 1976).

³. Italics are in the original. This also applies to the succeeding citations.

To Leslie White (1949) integration meant a strong political control and ever greater political units. This integration was not a goal in itself but a means towards the true goal of evolution: the greatest possible and most effective utilization of energy. White argued in thermodynamic terminology for the view that the exploitation of energy was the universal measure of cultural evolution. He expressed this with the formula:

$$\text{Energy} \times \text{Technology} \rightarrow \text{Culture}$$

Talcott Parsons (1966), among others, characterized the direction of evolution as an ever growing accumulation of knowledge and an improvement of the adaptability of the humans (Sahlins 1960; Kaplan, D. 1960; Parsons 1966). Yehudi Cohen (1974) has listed several criteria which he summarizes as man's attempts to free himself from the limitations of his habitat. Zoologist Alfred Emerson defined the cultural evolution as increasing homeostasis (self-regulation). He was criticized for an all-embracing, imprecise, and value-laden use of this concept (Emerson 1956). The most all-encompassing definition of the direction of evolution is found in the writings of Margaret Mead (1964:161):

"Directionality, at any given period, is provided by the competitive status of cultural inventions of different types and the competitive status of the societies carrying them; the outcome of each such competition, as it involves irreversible change (for example, in the destruction of natural resources or an invention that makes obsolete an older invention), defines the directional path."

Such a tautology is so meaningless that one must wonder how the neo-evolutionists could maintain the claim that evolution follows a certain definable direction.

Characteristically, most neo-evolutionists used more energy on studying the course and direction of evolution than its fundamental mechanisms. Most were content with repeating the three elements in Darwin's general formula: variation, selection, and reproduction, without going into detail. In particular, there was surprisingly little attention to the process of selection. Hardly anyone cared to define the criteria that determined, which features were promoted by the cultural selection, and which were weeded out. They were satisfied with the general criterion: survival value. Still the tautology is haunting! Without the selection criterion they also missed any argument why the evolution should go in the claimed direction.

There was also a certain confusion over what the *unit* of selection was. Was it customs, which were selected, or was it the people bearing them? Or was it entire societies that were the objects of the selection process? Some thinkers failed to define any unit of selection at all. Many used the word *invention* (Childe 1936, 1951). Emerson (1956, 1965) had the idea that symbols in the cultural evolution were equivalent to genes in the biological evolution. Parsons (1966) mentioned several possible units of selection, and Mead presented the most complete list of possible units of selection:

"a single trait, a trait cluster, a functional complex, a total structure; a stage of complexity in energy use; a type of social organization" (Mead 1964).

A few scientists have given a reasonably detailed description of possible selection processes (Murdock 1956, Kaplan, D. 1960, Parsons 1966). The most comprehensive list of selection mechanisms is found in an often cited article by the social psychologist Donald Campbell (1965):

"Selective survival of complete social organizations, selective diffusion or borrowing between social groups, selective propagation of temporal variations, selective imitation of inter-individual variations, selective promotion to leadership and educational roles, rational selection."

Several philosophers found that human scientific knowledge evolves by the selection of hypotheses (Kuhn 1962, Popper 1972, Toulmin 1972, Hull 1988).

The German sociologist Klaus Eder has developed a model where the selection of cognitive structures, rather than mere knowledge, controls cultural evolution. Man's moral structuring of interactive behavior, systems of religious interpretations, and symbolic structuring of the social world, are important elements in the worldview, on which the social structure is based. According to Eder, mutations in this cognitive structure and selective rewarding of those moral innovations that improve society's problem solving capability and hence its ability to maintain itself, is what controls social evolution. Adaptation to the ecological conditions, and other internal conditions, are the most important factors in Eder's theory, whereas he attributes little significance to external factors, such as contact with other societies (Eder 1976).

The main criticism against nineteenth century evolutionism was that it did not distinguish between evolution and progress, and the theories were often called *teleological*. Another word, which was often used when criticizing evolutionism, was *unilinearity*. This referred to the idea that all societies were going through the same linear series of evolutionary stages. In other words: a universal determinism and a conception of parallel evolutionary courses. Twentieth century neo-evolutionists were busy countering this criticism by claiming that their theories were *multilinear*. They emphasized local differences between different societies due to different environments and life conditions. The claim about multilinearity was however somewhat misrepresenting since they still imagined a linear scale for measuring evolutionary level (See Steward 1955 for a discussion of these concepts).

In 1960 a new dichotomy was introduced in evolutionary theory: *specific* versus *general* evolution. Specific evolution denotes the specific adaptation of a species or a society to the local life conditions or to a particular niche. General evolution, on the other hand, meant an improved general ability to adapt. A species or a society with a high *adaptability* may outcompete a specifically adapted species or society, especially in a changing environment. In other cases, a specifically adapted species or society may survive in a certain niche (Sahlins & Service 1960). This dichotomy seemed to solve the confusion: general evolution was unilinear, while specific evolution was multilinear (White 1960).

Neo-evolutionism was mainly used for explaining the differences between industrialized countries and developing countries, and between past and present. The talk was mainly about fundamental principles, and rarely went into detail with the evolutionary history of specific cultures or specific historic occurrences. The explanatory power of the theories was usually limited to the obvious: that certain innovations spread because they are advantageous, whereas the unfavorable innovations are forgotten.

Contemporary social scientists are often eager to distance themselves from social evolutionism. Never the less, evolutionary thought is still prevalent in many areas of the social sciences, and evolutionist theories are still being published (e.g. Graber, R.B. 1995).

2.5 Diffusionism

Another research tradition, which for many years has been seen as an alternative to evolutionism, is diffusionism. This research tradition focuses on diffusion, rather than innovation, as an explanation for social change. Strictly speaking, the diffusionist representation involves the same three elements that evolutionism is based on: innovation, selection, and reproduction - but viewed from another standpoint. The difference between the two paradigms is that diffusionism focuses on the spatial dimension of reproduction, i.e. the geographical spread of a phenomenon, whereas evolutionism focuses on the time dimension of reproduction, i.e. the continued existence and maintenance of a phenomenon. Diffusionists regard innovation as a rare and unique occurrence, whereas evolutionists acknowledge the possibility that the same innovation can occur several times at different places independently. The concept of selection is rarely discussed by that name by the diffusionists, although they often work with concepts such as barriers to diffusion or differences in receptivity to new ideas (Ormrod 1992). Many diffusionists regard themselves as in opposition to evolutionism, without realizing that the difference between the two models is quantitative, rather than qualitative.

The first great scientist within diffusionism was the french sociologist Gabriel Tarde. He did not deny the theory of natural selection, but thought that this theory was a gross generalization which had been ascribed more importance than its explanatory power could justify, and that random occurrences play a more important role than the evolutionists would admit (Tarde 1890, 1902). Although Tarde accepted the importance of progress, he was no determinist. Progress was not inevitable. The keyword in Tarde's theory was *imitation*. Innovations spread from one people to another by imitation. He distinguished between two kinds of innovations: accumulative and alternative. By alternative inventions he meant ideas or customs which could not spread without displacing some other idea or custom. With this concept selection was sneaked into Tarde's theory under the name of *opposition*. Opposition between alternative innovations could take the form of war, competition, or discussion (Tarde 1890, 1898).

Another early proponent of diffusionism was the american anthropologist Franz Boas. It was Boas who started the discussion about whether similarities between distant cultures were due to diffusion or independent innovation. He criticized the evolutionists for attributing too much

importance to parallel evolution, i.e. the assumption that the same phenomenon has arisen independently at different places. Boas is usually considered one of the greatest opponents of evolutionism, but it is worth mentioning that he did not reject the theoretical foundation of evolutionism. Boas was opposed to great generalizations, and he emphasized that similarities between two cultures could be explained either by diffusion or parallel evolution and that it was impossible to distinguish between these two possibilities without closer investigation (Harris 1969:259,291). In his discussions he gave examples of both diffusion and parallel invention. As is evident from the following citation, he did indeed recognize that the two processes are both controlled by the same selection process:

"When the human mind evolves an idea, or when it borrows the same idea, we may assume that it has been evolved or accepted because it conforms with the organization of the human mind; else it would not be evolved or accepted. The wider the distribution of an idea, original or borrowed, the closer must be its conformity with the laws governing the activities of the human mind. Historical analysis will furnish the data referring to the growth of ideas among different people; and comparisons of the processes of their growth will give us knowledge of the laws which govern the evolution and selection of ideas." (Boas 1898, cit. after Stocking 1974).

Later diffusionists have actually described the attributes of an invention that have significance for whether it will spread or not. Everett Rogers lists the following attributes of an invention as important: *advantage relative to alternatives, compatibility with existing structures, complexity, trialability, and observability*. Rogers repeatedly emphasizes, however, that it is the *perceived*, rather than the *objective* attributes of the invention that matters (Rogers, E.M. 1983). By this emphasis he places the locus of control in the potential adopter of a new invention rather than in the inanimate invention itself. And herein lies the hidden agenda of the conflict between diffusionists and evolutionists: The diffusionists want to maintain an anthropocentric worldview, where the world is governed by conscious decisions of persons with a free will, whereas the non-anthropocentric model of evolutionism attributes an important amount of control to haphazard and often unanticipated effects and automatic mechanisms.

The most obvious difference between diffusionism and evolutionism is that diffusionism first and foremost is an *idiographic* tradition. It focuses

on specific studies of delimited phenomena, trying to map the geographical distribution of a certain custom or technology, and finding out where it has first arisen and how it has spread. Diffusionists reject the great generalizations, and believe more in chance occurrences than in universal laws. Evolutionism, on the contrary, is a *nomothetic* science, which seldom has been applied to the study of specific details (Harris 1969).

The difference between the two research traditions can also be illustrated as a difference between a physical-chemical metaphor and a biological metaphor. Diffusion is a process whereby different molecules get mixed because of their random movements. By using the random motion of molecules as a metaphor for customs spreading in society, the diffusionists have stressed the importance of randomness. This metaphor naturally draws the attention of the scientists toward the spatial dimension, the velocity with which customs spread geographically, and the barriers impeding this expansion. The metaphor encompasses only the movement aspect, but neither innovation, selection, or reproduction. The latter three aspects belong to the biological metaphor on which social evolutionism is built. Evolutionism focuses on the time dimension, and it is important to notice that the time dimension is *irreversible*. Due to this irreversibility, the attention of the evolutionists becomes focused on the *direction* of the evolution. Evolutionism has thus become a deterministic philosophy of progress.

The most extreme form of diffusionism is built on the concept of a few culture centers, where innovations miraculously arise, and then spread in concentric circles from that center. This line of thought came primarily from religious circles as a reaction against the atheistic evolutionism, and as an attempt to bring science in harmony with the christian story of creation (Harris 1969).

Early diffusionism can hardly be said to be a theoretical school, since it first and foremost was a reaction against the excessive theorizing of the evolutionists. Diffusionism has even been called a non-principle (Harris 1969).

Many diffusion studies have been made independently within many different areas of research all throughout the twentieth century. These are mainly idiographic studies, too numerous to mention here (See Katz et al. 1963; Rogers, E.M. 1983). Most diffusionists study only inventions

that are assumed to be advantageous so that they can ignore selection criteria (Rogers, E.M. 1983).

Occasionally, diffusion studies have been combined with darwinian thinking, namely in linguistics (Greenberg 1959). It may seem illogical to apply selection theory to linguistics, since it must be difficult for linguists to explain why one synonym or one pronunciation should spread at the expense of another, when, in principle, they are equally applicable. Gerard et. al. (1956) proposes that the selection criteria are that the word must be easy to pronounce and easy to understand.

Geographer Richard Ormrod has argued for incorporating the concepts of adaptation and selection in diffusion studies. A diffusing innovation is selected by potential adopters who decide whether to adopt the innovation or not. Ormrod understands that the fitness of an innovation depends on local conditions. What is fit in one place may not be fit at some other location. Consequently, innovations are often modified in order to adapt them to local conditions (Ormrod 1992).

Newer diffusion theories have departed somewhat from the purely ideographic tradition and developed a detailed mathematical formalism enabling a description of the velocity with which innovations spread in society (Hamblin et. al 1973, Valente 1993). Incidentally, sociobiologists have produced very similar mathematical models for cultural diffusion (Aoki et.al. 1996), but the two schools are still developing in parallel without reference to each other.

2.6 Sociobiology

In the early 1970's a new paradigm emerged within biology, dealing with the explanation of social behavior of animals and humans by referring to evolutionary, genetic, and ecological factors. The principal work within this new paradigm was E.O. Wilson's famous and controversial book: *Sociobiology* (1975), which named and defined this discipline. Wilson's book provoked a fierce criticism from the sociologists (see e.g. Sahlin 1976). The conflict between the biological and the humanistic view of human nature seems impossible to resolve, and the heated debate is still going on today, twenty years later.

Apparently, it has been quite natural for the early ethologists and sociobiologists to reflect over the relationship between genetic and

cultural inheritance. Several thinkers have independently introduced this discussion to the sociobiological and evolutionary paradigm, in most cases without knowledge of the previous literature on this subject.

The possibility of selection based on cultural inheritance is briefly mentioned by one of the founders of ethology, Konrad Lorenz (1963), and likewise in Wilson's book *sociobiology* (1975). In a later book (1978) Wilson mentions the important difference between genetic and cultural evolution, that the latter is *lamarckian*, and therefore much faster.

In 1970, archaeologist Frederick Dunn defined cultural innovation, transmission, and adaptation with explicit reference to the analogy with darwinian evolutionary theory, but avoided any talk about cultural selection - apparently in order to avoid being connected with social darwinism and evolutionism, to which he found it necessary to dissociate himself:

"Although several analogies have been drawn between biological evolutionary concepts and cultural evolution, the reader will appreciate that they are of a different order than those analogies that once gave "cultural evolution" an unsavory reputation [...] In particular, I avoid any suggestion of inevitable and necessary tendencies toward increasing complexity and "improvement" of cultural traits and assemblages with the passage of time." (Dunn 1970).

In 1968 anthropologist and ethologist F.T. Cloak published a rudimentary sketch of a cultural evolutionary theory closely related to the genetic theory, imagining that culture was transmitted in the form of small independent information units, subject to selection. In a later article (1975) he explained the distinction between the cultural instructions and the material culture that these instructions give rise to, analogously with the distinction between genotype and phenotype in biology. He also pointed out the possibility for conflict between cultural instructions and their bearers, as he compared the phenomenon with a parasite or virus.

In 1972 psychologist Raymond Cattell published a book attempting to construct an ethic on a scientific, evolutionary basis. He emphasized cultural group selection as a mechanism by which man evolves cooperation, altruism, and moral behavior. He held the opinion that this mechanism ought to be promoted, and imagined giant sociocultural experiments with this purpose. By this argument he copied eugenic philosophy to cultural evolution.

At a symposium in 1971 about human evolution, biologist C.J. Bajema proposed a simple model for the interaction between genetic and cultural inheritance. He imagined this process as a synergistic interaction, where the cultural part of the process was defined accordingly:

"Cultural adaptation to the environment takes place via the differential transmission of ideas which influence how human beings perceive and interact with the environment which affect survival and reproductive patterns in and between human populations." (Bajema 1972).

A somewhat more detailed description of cultural selection mechanisms was presented by anthropologist Eugene Ruyle at another meeting in 1971. Ruyle emphasized the psychological selection in the individual's *"struggle for satisfaction"*. His description of selection mechanisms seems to be very much inspired by Donald Campbell's article from 1965 (see page 28), although he denies the possibility for cultural group selection (Ruyle 1973).

Among the first biologists taking up the idea of cultural selection was also Luigi Cavalli-Sforza, who on a conference in 1970 published a theory of cultural selection based on the fact that some ideas are more readily accepted than others (Cavalli-Sforza 1971). It is apparent from this publication, that Cavalli-Sforza is totally ignorant of the previous literature on this subject despite some knowledge of anthropology. His only reference to cultural selection is the colleague Kenneth Mather, who mentions group selection based on social inheritance in a book on human genetics. Mather (1964) does not mention from where he has this idea. Since neither Cavalli-Sforza, nor Mather, at this time reveal any knowledge of cultural evolution theory in the social sciences, we must assume that they have invented most of this theory by themselves. Curiously enough, the abovementioned article by Cavalli-Sforza contains a discussion of the difficulty in deciding whether an idea that occurs in multiple different places has spread by diffusion or has been invented independently more than one time.

Together with his colleague Marcus Feldman, Cavalli-Sforza has later published several influential articles on cultural selection. Their literature search has been rather casual. In 1973 they referred to an application of selection theory in linguistics (Gerard et al. 1956) and to a short mentioning of the theory in a discussion of eugenics (Motulsky 1968).

Not until 1981 did they refer to more important publications such as White (1959) and Campbell (1965).

The publications of Cavalli-Sforza and Feldman were strongly influenced by their background in genetics, which is an exact science. Their advancement of selection theory consisted mainly of setting up mathematical models (Cavalli-Sforza & Feldman 1981). The concise description of the models by mathematical formulae has certain advantages, but apparently also serious drawbacks. Many social phenomena are more complex and irregular than mathematical formulae can express, and the representations reveal that the examples given were chosen to fit the mathematical models, rather than vice versa. The majority of their models thus describe vertical transmission, i.e. from parents to children, rather than other kinds of transmission. There was also a certain focus on models in which the selection depends on from whom an idea comes, rather than the quality of the idea itself. Such models may admittedly have some relevance in the description of social stratification and social mobility.

2.7 Interaction between genetic and cultural selection

In 1976 William Durham asserted that the genetic and the cultural evolution are mutually interacting, and hence in principle cannot be analyzed separately as independent processes. The interaction between these two processes was aptly named *genetic/cultural coevolution*. Unlike several other thinkers, Durham did not at this time see any conflict between these two kinds of evolution. In his understanding the two selection processes were both directed towards the same goal: the maximum possible reproduction of the individual and its nearest relatives. This criterion is what biologists call *inclusive fitness*. Despite criticism from both anthropologists and biologists (Ruyle, et al. 1977), Durham stuck to his position for a couple of years (Durham 1979), but has later accepted that genetic and cultural fitness are in principle different, although he maintained that the two kinds of selection in most cases reinforce each other and only rarely are in opposition to each other (Durham 1982, 1991). The most important selection mechanism in Durham's theory is conscious choices based on criteria which in themselves may be subject to cultural selection. He emphasized the distinction between cultural information units, called *memes*, and the behaviors they control. Genes and memes form two parallel information

channels and their reciprocal interaction is symmetrical in Durham's model. Unfortunately, he did not distinguish clearly between selective transmission of memes, and selective use of these (Durham 1991, this problem is discussed on page 72).

While Durham regarded genetic and cultural selection as synergistic, two other scientists, Robert Boyd and Peter Richerson (1976, 1978), asserted that genetic and cultural fitness are two fundamentally different concepts, and if they point in the same direction it is only a coincidence. Boyd and Richerson have developed a theoretical model for the conflict between these two selection processes and the consequences of such a conflict (1978).

In a later article (1982) Boyd and Richerson claimed that humans have a genetic predisposition for cultural conformism and ethnocentrism, and that this trait promotes cultural group selection. This mechanism can then lead to cooperation, altruism, and loyalty to a group. These are characters that usually have been difficult for sociobiologists to explain because Darwin's principle of natural selection presumably would lead to egoism. Several other researchers have since proposed similar theories explaining altruism by cultural selection mechanisms (Feldman, Cavalli-Sforza & Peck 1985; Simon, H. 1990; Campbell 1991; Allison 1992).

In 1985, Boyd and Richerson at last provided a more thorough and well-founded collection of models for cultural selection. Their book also describes how those genes that make cultural transmission and selection possible may have originated, as well as an analysis of the conditions that determine whether cultural selection will increase or decrease genetic fitness (Boyd & Richerson 1985, see also Richerson & Boyd 1989).

While Boyd and Richerson maintain that cultural evolution is able to override genetic evolution, sociobiologist Edward Wilson and physicist Charles Lumsden had the opposite view on the gene/culture coevolution. They believed that the genetic evolution controls the cultural evolution. Their basic argument was that the cultural selection is controlled by people's genetically determined preferences, the so-called *epigenic rules*. They imagined that the genes control the culture like a dog on a leash (Lumsden & Wilson 1981). Let me illustrate this so-called *leash principle* by the following example: Assume that a certain food item can be prepared in two different ways, *A* and *B*. *A* is the most common because it tastes better, but *B* is the healthiest. In this situation

genetic evolution will change people's taste so that they prefer *B*, and consequently cultural selection will quickly make *B* the most widespread recipe.

Lumsden and Wilson's book expressed an extreme biologic reductionism, since they imagined that genes are able to control almost everything by adjusting human preferences. In this model, culture becomes almost superfluous. Their book has been highly disputed. One important point of criticism was that their theory lacked empirical support. Although Lumsden and Wilson have documented that humans do have certain inborn preferences, they have never demonstrated any differences between humans in different cultures with respect to such preferences (Cloninger & Yokoyama 1981; Lewin 1981; Smith & Warren 1982; Lumsden, Wilson, et.al. 1982; Almeida et.al. 1984; Rogers, A.R. 1988). A problem with the leash principle is to explain cultural traits that reduce genetic fitness. This argument has been met by the construction of a model of cultural transmission analogous to sexual selection - a genetic selection mechanism which is famous for its potential for reducing fitness (see p. 87) (Takahasi 1998).

In later publications, Lumsden and Wilson no longer insisted that cultural differences have a genetic explanation, but they did not retract this claim either. They still maintained that even small changes in the genetic blend of a population can lead to considerable changes in the culture (Lumsden & Wilson 1985; Lumsden 1988, 1989).

At a workshop in 1986 entitled "*Evolved Constraints on Cultural Evolution*"⁴ there was general agreement that a human is not born as a *tabula rasa*, but does indeed have genetically determined predispositions to learn certain behavior patterns easier than others. But there was no approval of the claim that genetic evolution can be so fast that it is able to govern cultural evolution. On the contrary, certain models were published showing that cultural evolution in some cases may produce behaviors that are genetically maladaptive, and that the leash principle in fact can be turned upside down, so that it is culture that controls the genes (Richerson & Boyd 1989, Barkow 1989).

⁴ . The contributions in this workshop have been published in *Ethology and Sociobiology*, vol. 10, no. 1-3, 1989, edited by Jerome H. Barkow.

An important contribution to the debate came from the psychologists John Tooby and Leda Cosmides, who proposed a new kind of human ethology which they call *evolutionary psychology*⁵. According to this theory, man's psyche is composed of a considerable number of specialized mechanisms, each of which has been evolved for a specific adaptive function, and do not necessarily work as universal learning mechanisms or fitness maximizing mechanisms. These psychological mechanisms are so complex and the genetic evolution so slow, that we must assume that the human psyche is adapted to the life-style of our ancestors in the pleistocene period:

"The hominid penetration into the "cognitive niche" involved the evolution of some psychological mechanisms that turned out to be relatively general solutions to problems posed by "local" conditions [...] The evolution of the psychological mechanisms that underlie culture turned out to be so powerful that they created a historical process, cultural change, which (beginning at least as early as the Neolithic) changed conditions far faster than organic evolution could track, given its inherent limitations on rates of successive substitution. Thus, there is no *a priori* reason to suppose that any specific modern cultural or behavioral practice is "adaptive" [...] or that modern cultural dynamics will necessarily return cultures to adaptive trajectories if perturbed away. Adaptive tracking must, of course, have characterized the psychological mechanisms governing culture during the Pleistocene, or such mechanisms could never have evolved; however, once human cultures were propelled beyond those Pleistocene conditions to which they were adapted at high enough rates, the formerly necessary connection between adaptive tracking and cultural dynamics was broken." (Tooby & Cosmides 1989).

The theory that genetically determined preferences control the direction of cultural evolution, has been put forward many times, and also without Lumsden and Wilson's exaggeration of the power of the genes. Psychologist Colin Martindale calls this principle *hedonic selection*:

"It is certainly possible that some of the genes freed by the capacity for culture may serve to "fine-tune" human hedonic responses so as to increase the probability that what brings pleasure will direct behavior in a way likely to increase [genetic] fitness. [...] it is generally assumed that hedonic selection will proceed in a certain direction until it is checked by

⁵. An introduction to *evolutionary psychology* can be found in Barkow et.al. 1992.

the production of traits that render their possessors unfit [...]"
(Martindale 1986).

While some scientists stress the importance of psychological mechanisms (e.g. Mundinger 1980), others regard the survival of the individual or group as the ultimate criterion for cultural selection:

"In the short run, various criteria - including efficiency of energy capture, and the satisfaction of perceived needs and wants - may determine the selection and retention of certain behavior. In the longer term, however, only if that behavior contributes to the persistence of the group or population in terms of reproductive continuity will it be truly retained."
(Kirch 1980).

This model does not leave much room for psychological selection of cultural phenomena. According to Kirch (1980), such a selection is not allowed to run further than the higher selection with the individual or the group as unit of selection allows.

In recent years, the theory of gene/culture coevolution has been refined by a group of canadian biologists lead by C.S. Findlay. Findlay has continued the strictly mathematical tradition of Cavalli-Sforza, and constructed a series of mathematical models for cultural evolution and gene/culture coevolution. The mathematical analysis reveals that even relatively simple cultural systems can give rise to a great variety of complex phenomena, which are not possible in genetic systems of similar composition. These peculiar phenomena include the existence of multiple equilibrium states, oscillating systems, and stable polymorphism (Findlay, Lumsden & Hansell 1989a,b; Findlay 1990, 1992). Real world examples for such complex mechanisms were not given, but a few studies applying gene/culture coevolution theory to actual observations have been published (Laland, Kumm & Feldman 1995).

2.8 Memetics

Richard Dawkins' famous and controversial book *The selfish gene* (1976) described genes as selfish beings striving only to make as many copies of themselves as possible. The body of an animal can thus be viewed as nothing more than the genes' tool for making more genes. Many people feel that Dawkins is turning things upside down, but his way of seeing things has nevertheless turned out to be very fruitful. In a short chapter in the same book he has applied a similar point of view to culturally transmitted traits. Dawkins has introduced the new name *meme* (rhymes with beam) for cultural replicators. A meme is a culturally transmitted unit of information analogous to the gene (Dawkins 1976, 1993).

The idea that a meme can be viewed as a selfish replicator that manipulates people to make copies of itself has inspired many scholars in the recent years. An obvious example is a religious cult which spends most of its energy on recruiting new members. The sect supports a set of beliefs that makes its members do exactly that: work hard to recruit new members.

A meme is not a form of life. Strictly speaking, the meme cannot reproduce itself, it can only influence people to replicate it. This is analogous to a virus: a virus does not contain the apparatus necessary for its own reproduction. Instead it parasitizes its host and uses the reproductive apparatus of the host cell to make new viruses. The same applies to a computer virus: it takes over the control of the infected computer for a while and uses it to make copies of itself (Dawkins 1993). Viruses and computer viruses are the favorite metaphors used in meme theory, and the vocabulary is borrowed from virology: host, infection, immune reaction, etc.

The idea of selfish memes has developed into a new theoretical tradition which is usually called meme theory or memetics. While meme theorists agree that most memes are beneficial to their hosts, they often concentrate on adverse or parasitic memes because this is an area where meme theory has greater explanatory power than alternative paradigms. Unlike the more mathematically oriented sociobiologists, the meme theorists have no problem finding convincing real-life examples that support their theories. In fact, in the beginning this tradition relied more on cases and examples than on theoretic principles.

Several meme theorists have studied the evolution of religions or cults. A religion or sect is a set of memes which are transmitted together and reinforce each other. Certain memes in such a meme complex are hooks which make the entire set of beliefs propagate by providing an incentive for the believer to proselytize. Other memes in the complex makes the host resistant to infection by rival beliefs. The belief that blind faith is a virtue has exactly this function. Other very powerful parts of the meme complex may be promises of rewards or punishments in the after-life (Paradise or Hell-fire) which make the host obey the commands of all the memes in the complex (Lynch 1996, Brodie 1996).

Examples of the unintended effects of cultural selection abound in memetic theory texts. One example is charity organizations spending most of their money on promotion:

"It is their effectiveness in attracting funding and volunteers that determines whether they can stay in existence and perform their functions [...] Given limited resources in the world and new organizations being introduced all the time, the surviving organizations must become better and better at surviving. Any use of their money or energy for anything other than surviving - *even using it for the charitable purpose for which they were created!* - provides an opening for a competing group to beat them out for resources." (Brodie 1996:158)

Another example of parasitic memes is chain letters which contain a promise of reward for sending out copies of the letter or punishment for breaking the chain (Goodenough & Dawkins 1994).

One reason why arbitrary memes can spread is people's gullibility. Ball (1984) argues, that gullibility can actually be a (genetic) fitness advantage: Believing the same as others do, has the advantage of improved cooperation and belonging to a group. People's tendency to follow any new fad is what Ball (1984) calls the *bandwagon* effect.

The stability of a meme complex depends on its ability to make its host resistant to rival beliefs. Beliefs in supernatural and invisible phenomena are difficult to refute, and hence quite stable. Secular belief-complexes will be stable only if they have a similar defense against disproof. Such a defense can be the belief that a grand conspiracy has covered up all evidence by infiltrating the most powerful social institutions (Dennett 1995).

While most meme theorists paint a fairly pessimistic picture of memes as parasitic epidemics, Douglas Rushkoff has presented a quite optimistic view of the memes that infest public media. He has studied how memes containing controversial or counter-cultural messages can penetrate mainstream media packaged as trojan horses. This gives grass-roots activists and other people without money or political positions the power to influence public opinion and provoke social change (Rushkoff 1994). Rushkoff does not seem to worry that the public agenda is thus determined by who has the luck to launch the most effective media viruses rather than by who has the most important messages to tell.

The paradigm of meme theory is only gradually crystallizing into a rigorous science. Most of the publications are in the popular science genre with no exact definitions or strict formalism. Dennett does not even consider it a science because it lacks reliable formalizations, quantifiable results, and testable hypotheses, but he appreciates the insight it gives (1995). There is no common agreement about the definition of a meme. While most meme theorists consider the meme to be analogous to biological genotype and the phenotype has its parallel in social behavior or social structure, William Benzon has it exactly opposite (Benzon 1996, Speel & Benzon 1997).

The analogy with biology is often taken very far (e.g. Dennett 1990, 1995) which makes the theory vulnerable to criticism. Critics have argued that humans are intelligent and goal-seeking beings which are more influenced by logical, true, informative, problem-solving, economic, and well-organized ideas than by illogical, false, useless or harmful beliefs (Percival 1994).

Memetics will probably continue to be a soft science. Heyes and Plotkin have used cognitive psychology and brain neurology to argue that information is being transformed while stored in human memory and may be altered under the influence of later events. This leads them to argue that memes cannot be distinct, faithful copies of particulate information-bits, but blending and ever changing clusters of information (Heyes & Plotkin 1989). The products of cultural evolution or conceptual evolution cannot be systematized into distinct classes and it is impossible to make a strict evolutionary taxonomy of cultures (Hull 1982, Benzon 1996).

Richard Brodie, a computer engineer, has divided memes into three fundamental classes: *distinction memes* that define names and categories, *strategy memes* that define strategies of behavior and theories about cause and effect, and *association memes* that make the presence of one thing trigger a thought or feeling about something else (Brodie 1996).

Brodie has paid particular attention to the selection criteria that make some memes spread more than others. Based on evolutionary psychology⁶, his theory says that memes have higher fitness when they appeal to fundamental instincts:

"Memes involving danger, food, and sex spread faster than other memes because we are wired to pay more attention to them - we have *buttons* around those subjects." (Brodie 1996:88)

In other words, the memes that push the right buttons in our psyche are the most likely to spread. The most fundamental buttons have already been mentioned: danger, food, and sex. Other buttons identified by Brodie include: belonging to a group, distinguishing yourself, obeying authority, power, cheap insurance, opportunity, investment with low risk and high reward, protecting children.

For example, the danger button is the reason why horror movies are popular. The cheap insurance button is what makes people knock on wood even when they claim not to be superstitious. And the low risk - high reward button is what makes people invest in lotteries even when the chance of winning is abysmally small (Brodie 1996).

Meme theorists have a peculiar penchant for self-referential theories. Scientific theories are memes, and the theory of memes itself is often called the meme meme or metameme. When meme theorists are discussing scientific memes, they usually pick examples from those sciences with which they are most familiar. This extraordinary scientific self-awareness has led many meme theorists to present their theories in the most popularized way with the deliberate, and often proclaimed, aim of spreading the meme meme most effectively (e.g. Lynch 1996, Brodie 1996).

⁶. See p. 39.

2.9 Sociology and anthropology

The selection theory is quite unpopular among modern sociologists and anthropologists (Berghe 1990) and only few express a positive view (e.g. Blute 1987). Opponents of the theory claim that there is no cultural analogy to genes and that the selection theory attributes too much importance to competition, whereas cooperation and conscious planning is ignored (Hallpike 1985, Adams 1991). The critics attribute a more literal analogy with darwinism to the adherents of the theory than they have ever stated, to make the theory look absurd. Biologists Pulliam and Dunford have characterized the gap between biology and social sciences in this way:

"It seems to us that decades of development in intellectual isolation from each other have allowed biological and social scientists to diverge in interests, ideas and especially language to the point where the two types of scientists now find it painfully difficult to communicate." (Pulliam & Dunford 1980)

This is no exaggeration. Many social scientists have rejected socio-biology, and for good reasons. The following is an excerpt from a radio-transmitted debate in connection with Lumsden and Wilson's book: *Genes, Mind and Culture* (1981):

John Maddox: "Should it be possible, or should it not be possible, on the basis of your theory, to be able to predict which people go to the back door and which to the front door when they go to visit John Turner in Leeds?"

Edward O. Wilson: "If there can be demonstrated substantial genetic variation in some of the epigenetic rules that produce strong bias, yes. But that is difficult to pin down at this very early, very primitive level of our understanding of human behavioral genetics." (Maddox et al., 1984).

When Wilson, who is regarded as the founder of and foremost representative of sociobiology, can come up with such absurd a biological reductionism, it is no wonder that most sociologists and anthropologists take no interest in sociobiology, but instead develop their own theories. Many social scientists depict society as an autonomous system in order to avoid biological and psychological reductionism (Yengoyan 1991).

There are, nevertheless, significant similarities between biological and sociological theories of culture. The french sociologist Pierre Bourdieu has studied the reproduction of social structures in the educational system (Bourdieu & Passeron 1970), and the british cultural sociologist Raymond Williams has elaborated further on this theory, and demonstrated that the cultural reproduction is subject to a conscious selection:

"For tradition ('our cultural heritage') is self-evidently a process of deliberate continuity, yet any tradition can be shown, by analysis, to be a selection and reselection of those significant received and recovered elements of the past which represent not a necessary but a *desired* continuity. In this it resembles education, which is a comparable selection of desired knowledge and modes of learning and authority."
(Williams, R. 1981:187)

Williams has brilliantly explained how different cultural forms are connected with different degrees of autonomy and degrees of freedom, and hence unequal possibilities for selection. Williams analyzes both cultural innovation, reproduction, and selection, but oddly enough, he never combines these three concepts to a coherent evolutionary theory, and he omits any reference to evolutionary scientists (Williams, R. 1981). This omission is probably due to a resistance against overstated generalizations and, quite likely, a fear of being associated with social darwinism.

The philosopher Rom Harré has theorized over social change from a mainly sociological paradigm. He discussed whether innovations are random or not, and hence whether social evolution can be characterized as darwinian or lamarckian. Harré has made a distinction between cultural informations, and the social practice they produce, but he has not gone into details with the selection process and its mechanisms (Harré 1979, 1981).

Sociologist Michael Schmid has proposed a reconstruction of the theory of collective action based on selectionist thought, but with few references to biology. He argues that collective actions regulated by social rules have consequences which tend to stabilize or destabilize these rules. This is an evolutionary mechanism which Schmid calls *internal selection*, because all factors are contained within the social system. The selective impact of external resources on the stability of social regulations is considered *external selection* (Schmid 1981, 1987; Kopp & Schmid 1981). His theory has had some influence on social

systems theory which in turn has influenced sociocybernetics (Luhmann 1984, Zouwen 1997).

2.10 Attempts to make a synthesis of sociobiology and anthropology

It seems obvious to try to fit sociobiologic theory into anthropology, and there have of course been several attempts along this line. Unfortunately, those attempting to do so have seldom been able to escape the limitations of their old paradigms and the results have seldom been very convincing.

In 1980, the biologists Ronald Pulliam and Christopher Dunford published a book in the popular science genre with this purpose. Despite intentions to make their book interdisciplinary, they disclose a rather limited knowledge of the humanistic sciences.

David Rindos, who is a botanist as well as an anthropologist, has written several articles about cultural selection (1985, 1986). His articles contain some errors and misconceptions which, for the sake of brevity, I will not mention here, but instead refer to Robert Carneiro's criticism (1985).

In an article by anthropologist Mark Flinn and Zoologist Richard Alexander (1982) the theory of coevolution is turned down by rejecting the culture/biology dichotomy and the difference between cultural and genetic fitness. Their argumentation has been rebutted by Durham (1991) and others.

Ethologist Robert Hinde has likewise attempted to bridge the gap between biology and sociology, but his discussions largely remain within the ethological paradigm. Cultural selection theory is cursorily mentioned, but cultural fitness is not discussed (Hinde 1987).

Sociologist Jack Douglas has combined a special branch of social science, namely the sociology of deviance, with the theory of cultural selection. By combining sociology, sociobiology, and psychology, Douglas has created a model for social change, where social rules are seen as analogous to genes, and deviations from the rules play the same role in social evolution as mutations do in genetic evolution. Douglas' theory addresses the question of how social deviations arise,

and how people overcome the shame that deviation from the rules entail (Douglas, J. 1977).

Archaeologist Patrick Kirch has presented a fairly detailed theory for cultural selection, and unlike most other researchers in selection theory, he has supported his theory thoroughly with specific examples. As mentioned on page 40, Kirch does not ascribe much importance to conscious or psychological selection, but regards the survival of the individual or the group as the ultimate selection criterion. Such cultural phenomena which has no obvious importance for survival, such as for example art or play, are regarded as random and neutral towards selection (Kirch 1980).

Like Patrick Kirch, anthropologist Michael Rosenberg emphasizes that cultural innovations are not necessarily random, but often the result of purposeful reactions to a stressful situation such as overpopulation. In particular he contends that agriculture initially arose as a reaction to overpopulation:

"... an allocation model proposes that in certain types of habitats, hunter-gatherers will resolve the *symptoms* of population pressure-induced stress through the voluntary or involuntary allocation of standing wild resources. It further proposes that, in a still more limited number of cases (given the institution of territorial systems), the *consequences* of growing population pressure-induced stress will be *perceived* as being *most readily* mitigated by food production, rather than by warfare or some other behavior intended to address these proximate consequences. Finally, it also proposes that it is under precisely such circumstances that sedentism, food storage, and other behaviors thought integral to the process develop to be selected for." (Rosenberg, M. 1990).

The proficiency of the abovementioned scientists notwithstanding, I will maintain that their attempts at forming a synthesis of the different sciences have so far been insufficient. Not until recently has a fairly sound combination of sociology and sociobiology been presented. In 1992, the two sociologists Tom Burns and Thomas Dietz published a theory for cultural evolution based on the theory of the relationship between individual agency and social structure. Culture is defined as a set of rules which is established, transmitted, and used selectively. Burns and Dietz explain how an existing social structure sets limits to what kind of thoughts and actions are possible. An implicit selection lies

in the requirement that actions and ideas must be compatible with the social structure, and that different sub-structures must be mutually compatible. According to Burns and Dietz, cultural selection proceeds in two steps: A greater or lesser part of the available resources is allocated to different actors or groups according to certain rules; these resources can subsequently be utilized to maintain and reinforce the concerned group or institution and its rules. Of course Burns and Dietz also mention the obvious selection that takes place by the exercise of power, as well as the limitations constituted by the material environment and the ecology (Burns & Dietz 1992). Despite the fact that these two sociologists better than most other scientists have been able to integrate different paradigms, their theory has been criticized for being reductionist and for not paying enough attention to certain important parts of social life (Strauss 1993).

Political scientist Ann Florini has recently applied selection theory to the development of international norms. According to her model, three conditions must be met for an international norm to spread: firstly, the norm has to get prominence, usually by being promoted by a *norm entrepreneur*; secondly, it must be compatible with preexisting norms; and thirdly, it must fit the environmental conditions. She argues that new norms mainly are adopted through *emulation* of influential actors, rather than through a rational evaluation of all available alternatives (Florini 1996).

2.11 Social psychology

Studies of cultural selection from the point of view of social psychology and cognitive psychology have been too few to form a separate research tradition. This is clearly a neglected area of research.

The distortion of memes through imperfect communication between humans has been explained by Heyes & Plotkin (1989) and Sperber (1990, 1996). This is seen as an important difference between genetic and cultural evolution: cultural informations are generally transformed or modified each time they are copied, and perfect copying is the exception rather than the rule. This is very unlike the case of genetic evolution where the copying of genes as a rule is perfect, and mutation is the exception. In Sperber's model, cultural representations are generally transformed each time they are copied, and this transformation is mostly in the direction of the representation that is most psychologically

attractive, most compatible with the rest of the culture, or most easy to remember. Such an 'optimal' representation is called an attractor, and the repeated process of distortion through copying is seen as a trajectory with random fluctuations tending towards the nearest attractor (Sperber 1996).

While other scientists present a simple model of memes being either present or not present in a human brain, Dan Sperber emphasizes that there are different ways of holding a belief. He makes a distinction between *intuitive beliefs*, which are the product of spontaneous and unconscious perceptual and inferential processes, and *reflective beliefs*, which are believed by virtue of second order beliefs about them. A claim that is not understood but nevertheless believed because it comes from some authority, is an example of a reflective belief. The commitment to a belief can vary widely, from loosely held opinions to fundamental creeds, from mere hunches to carefully thought out convictions (Sperber 1990).

Psychological and cognitive factors may have important influence on the selection of cultural information. The following factors are mentioned by Sperber: the ease with which a particular representation can be memorized; the existence of background knowledge in relationship to which the representation is relevant; and a motivation to communicate the information (Sperber 1990).

2.12 Economic competition

A well known analogy to darwinian evolution is economic competition between enterprises. This analogy has been explored most notably by the two economists Richard Nelson and Sidney Winter, who have developed a useful model for economic change. Their theory, which they call *evolutionary*, is contrasted with traditional economic theory, called *orthodox*, by its better ability to cope with technological change. Nelson and Winter argue that technological innovation and progress plays an important role in modern economic growth, but is inadequately dealt with in orthodox economic theory. Different firms have different research strategies and different amounts of resources to invest in research and development and hence unequal chances of making technological innovations that improve their competitiveness. Nelson and Winter regard knowledge as accumulative and the process of innovation is therefore described as irreversible.

The so-called orthodox economic theory is criticized for its heavy reliance on the assumption that firms behave in the way that optimizes their profit. Finding the optimal strategy requires perfect knowledge and computing skills. It is argued that knowledge is never perfect and research is costly, and therefore the theoretical optimum may never be found. In contrast to orthodox economic theory, Nelson and Winter argue that economic equilibrium may exist in a market where nothing is optimal, and that many firms may stick to their old routines unless external factors provoke them to search for new strategies:

"A historical process of evolutionary change cannot be expected to "test" all possible behavioral implications of a given set of routines, much less test them all repeatedly [...] There is no reason to expect, therefore, that the surviving patterns of behavior of a historical selection process are well adapted for novel conditions not repeatedly encountered in that process [...] In a context of progressive change, therefore, one should not expect to observe ideal adaptation to current conditions by the products of evolutionary processes." (Nelson & Winter 1982:154)

Nelson and Winter (1982) have developed their evolutionary theory of economics to a high level of mathematical refinement in order to explain important aspects of economic growth as fueled by technological advance better than orthodox economic theory can.

A more general theory of the evolution of business and other organizations has been published by sociologist Howard Aldrich (1979), based on the general formula of variation, selection, and retention. Unlike Nelson and Winter who emphasize goal-directed problem solving as an important source of variation, Aldrich underplays planned innovations and attaches more importance to random variations. Mechanisms of selection include selective survival of whole organizations, selective diffusion of successful innovations between organizations, and selective retention of successful activities within an organization.

The effect of the environment is an important element in Aldrich's theory. He classifies environments according to several dimensions, such as capacity, homogeneity, stability, predictability, concentration versus dispersion of resources, etc. Different combinations of these parameters can provide different niches to which an organization may adapt (Aldrich 1979).

In a long-term perspective, economic growth may not be steady but rather characterized by periods of relative structural stability and inertia, separated by rapid transitions from one structural regime to another. This is explained by Geoffrey Hodgson (1996) as analogous to the punctuated equilibria model of biological evolution (see p. 75). A similar theory has been applied to the development of organizations in economic competition. A firm's ability to adapt to changes in the market situation may be impeded by memetic constraints within the organization just like the adaptability of a biological species may be impeded by genetic constraints (see p. 75). Overcoming such constraints produces a leap in the development of the firm resembling the process of punctuated equilibria in biological evolution (Price 1995).

2.13 Universal selection theory

Selection theory has been found useful for explaining many different phenomena in the world. Several philosophers have therefore been interested in studying similarities between different classes of phenomena which all depend on the same neo-darwinian formula: blind variation and selective retention (Cziko 1995).

Biological and cultural evolution are obvious examples, but also ontogenetic growth and individual learning have been shown to involve such processes. A particularly convincing example is immunology: an organism's development of antibodies involves a process which is remarkably similar to biological evolution (Cziko 1995). Examples from the inorganic world are more subtle: In the growth of a crystal, each new molecule is wandering randomly about until by chance it hits a fitting place in the crystal lattice. A molecule in a fit position is more likely to be retained than a molecule at an unfit position. This explains how the highly ordered structure of a crystal or a snowflake is generated.

You may notice, that the neo-darwinian formula for biological evolution has been modified here: the word *blind* has been replaced for *random*, and *reproduction* has been changed to *retention*. These modifications have been made for a reason. In cultural evolution, for example, the variation is seldom completely random. Cultural innovations are often goal-directed although still tentative. The philosophers meet the criticism that variation may be non-random by saying that a new innovation is not guaranteed to be successful, and hence it can be said to be *blind* to the

outcome of the experimental variation (Campbell 1974). This modification has not stopped the criticism, since innovations may be both goal-directed and intelligent to such a degree that the outcome can be predicted with a reasonably high degree of reliability (Hull 1982).

The use of the word *retention*, rather than *reproduction*, implies that the selected character is preserved, but not necessarily multiplied. In the crystal-growth example, each new molecule has to go through the same process of blind-variation-and-selective-retention rather than copying the 'knowledge' from its predecessors. This mechanism is far less effective than biological evolution, where each new generation inherits the accumulated effect of all prior selections. The new generations do not have to wait for the successful mutations to be repeated. This is a fundamental difference, which many philosophers fail to recognize.

Campbell has introduced a new branch of universal selection theory called *evolutionary epistemology*. He argues that any adaptation of an organism to its environment represents a form of *knowledge* of the environment. For example, the shapes of fish and whales represent a functional knowledge of hydrodynamics. The process of blind-variation-and-selective-retention produces such knowledge in a process resembling logical induction. Campbell claims that any increase in fitness of a system to its environment can only be achieved by this process. His theory entails three doctrines of which this is the first one.

Campbell's argument is symmetric: not only does he say that adaptation is knowledge, he also says that knowledge is adaptation. This means that all human knowledge ultimately stems from processes of blind-variation-and-selective-retention. Hence the term *evolutionary epistemology*.

There are many processes which bypass the fundamental selection processes. This includes selection at higher levels, feed back, vicarious selection, etc. Intelligent problem solving is an obvious example of such a vicarious selection mechanism: it is much more effective and less costly than the primitive processes based on random mutation and selective survival.

But all such mechanisms, which bypass the lower-level selection processes, are themselves representations of knowledge, ultimately

achieved by blind-variation-and-selective-retention. This is Campbell's second doctrine.

The third doctrine is that all such bypass mechanisms also contain a process of blind-variation-and-selective-retention at some level of their own operation. Even non-tentative ways of acquiring knowledge, such as visual observation, or receiving verbal instruction from somebody who knows, are thus processes involving blind-variation-and-selective-retention according to Campbell's third doctrine (Campbell 1974, 1990).

Allow me to discuss this controversial claim in some detail. The most deterministic and error-free knowledge-gaining process we can think of is using a computer to get the result of a mathematical equation. Where does a modern computer get its error-free quality from? From digitalization. A fundamental digital circuit has only two possible stable states, designated 0 and 1. Any slight noise or deviation from one of these states will immediately be corrected with a return to the nearest stable state. This automatic error-correction is indeed a process of selective retention.

Going down to an even more fundamental level, we find that the computer circuits are made of transistors, and that the electronic processes in a transistor involve blind-variation-and-selective-retention of electrons in a semiconductor crystal.

This argument is seemingly a defense of Campbell's third doctrine. But only seemingly so! My project here has not been to defend this doctrine but to reduce it *ad absurdum*. Campbell tells us that the translation of DNA into proteins involves blind-variation-and-selective-retention. What he does not tell us is that this applies to *all* chemical reactions. In fact, everything that molecules, atoms, and sub-atomic particles do, can be interpreted as blind-variation-and-selective-retention. And since everything in the Universe is made of such particles, everything can be said to rely on blind-variation-and-selective-retention.

The problem with the claim that advanced methods of acquiring knowledge involve blind-variation-and-selective-retention is that it is extremely reductionistic. The third doctrine involves the common reductionist fallacy of ignoring that a complex system can have qualities which the constituent elements do not have. At the most fundamental

level, everything involves blind-variation-and-selective-retention, but this may be irrelevant for an analysis of the higher-level functioning.

I recognize that Campbell's first and second doctrines provide a promising solution to the fundamental philosophical problem of where knowledge comes from and what knowledge is, but I find the third doctrine so reductionistic that it is irrelevant.

Undeniably, however, the general darwinian formula represents an excellent mechanism for acquiring new knowledge. This mechanism is utilized in computerized methods for solving difficult optimization problems with many parameters. The principle, which is called evolutionary computation, involves computer simulation of a population of possible solutions to a given problem. New solutions are generated by mutation and sexual recombination of previous solutions, and each new generation of solutions is subjected to selection based on their fitness (Bäck et. al. 1997).

2.14 Conclusion

This chapter has not been an account of the history of evolutionary ideas, but a study of how the principle of selection has been used for explaining cultural change. Although the principle of selection is often found in evolutionary thinking, it has sometimes played only a minor role, since traditional evolutionism has been more concerned with the direction of evolution than with its mechanism (Rambo 1991). This is one of the reasons why evolutionism often has been criticized for being teleological. The vast criticism against evolutionism has only been briefly reported here.

Nineteenth century evolutionists lacked a clear distinction between organic and social inheritance because they did not know Mendel's laws of inheritance. 'Race' and 'culture' were synonymous to them. The principle of *the survival of the fittest* meant that evolution was dependent on the strongest individuals winning over the weaker ones. Since this process was regarded as natural and no distinction was made between evolution and progress, the logical consequence of this philosophy was a *laissez faire*-policy where the right of superior forces was the rule. In an extreme ethnocentrism, the so called social darwinists believed that

their own race and culture was superior to everybody else and that it therefore was their right and duty to conquer the entire world.

There was a strong opposition between social darwinism and socialism, because the former philosophy assumes that weakness is inborn and must naturally lead to an unkind fate, whereas the socialists believe that poverty and weakness are caused by social factors and ought to be remedied.

In Herbert Spencer's philosophy, all kinds of evolution were analogous: The Universe, the Earth, the species, the individuals, and the society - all were evolving due to one and the same process. This theory has later been rejected and it is unfortunate that such diverse kinds of change are still designated by the same word: 'evolution'. Spencer compared society with an organism and the different institutions in society were paralleled with organs. While this metaphor, which has been quite popular in social science, may be appropriate in connection with a static model of society such as functionalism, it may lead to serious fallacies when social change is being studied. A consequence of the organism analogy is namely that a theory of social change is modeled after individual development rather than after the evolution of species. In the embryonic development of a body, everything is predetermined and the cause of change is inherent in the body which is changing. When transferred to the evolution of society, this line of thought leads to a deterministic, unilinear, and teleological philosophy⁷. The idea of analogy between different kinds of evolution has recently been revived in the universal selection theory.

The words *social darwinism*, *determinism*, *unilinearity*, and *teleology* were invectives used mainly by the opponents of evolutionism. These concepts were so vaguely defined that the critics could include any theory under these headings while the proponents of evolutionism with the same ease were able to demonstrate that their theories were indeed not deterministic, teleological, etc.

The debate was - and still is - highly dominated by conflicts between incompatible worldviews and views of human nature. The controversies over nature versus nurture, biology versus culture, determinism versus

⁷. Spencer's somewhat inconsistent attitude to this question has often been debated. See Haines (1988).

free will, etc. has made it impossible to reach an agreement and the conflict between different paradigms has so far lasted more than a century. Both sides have exaggerated their positions into extreme reductionism which has made them vulnerable to criticism. Adherents of the philosophy of free will wanted an idiographic description whereas the biologically oriented scientists demanded a nomothetic representation.

Most social evolutionists were more interested in describing the direction or goal of evolution than its causes. Many failed to specify the unit of selection, mechanism of selection, or mode of reproduction, and only few distinguished between genetic and cultural fitness. Their theory therefore had only little explanatory power, and in particular lacked any explanation why the evolution should go in the claimed direction.

The polarization of opinions did not decrease when sociobiologists took the lead in the 1970's. With an excessive use of mathematical formulae, the theoreticians distanced themselves more and more from the real world phenomena they were to describe, and many simplifications and dubious assumptions became necessary in order to make the models mathematically tractable. The mathematical models include so many parameters that it has become impossible to determine the numerical value of them all and it is therefore only possible to draw qualitative and conditional conclusions despite the intense focus on quantitative models. Of course the mathematical language has also widened the communication gap between sociobiologists and anthropologists.

Cultural selection theory has so far never been a separate discipline, but has been investigated by scientists from several different branches of science, such as philosophy, economy, sociology, anthropology, social psychology, linguistics, sociobiology, etc. The consequence of severe communication gaps between the different sciences and neglectful literature search has been that the same ideas have been forgotten and reinvented several times without much progress. This is the reason why primitive and antiquated theories still pop up. Many scientists fail to acknowledge the fundamental differences between genetic and cultural selection (e.g. Ruse 1974; Hill 1978; Harpending 1980; van Parijs 1981; Mealey 1985; Russell & Russell 1982-1992, 1990), and some of these theories are even more insufficient than Leslie Stephen's neglected theory from 1882.

The latest development is the school of memetics which is a much less exact discipline than sociobiology. The lack of rigor and sophistication in memetics has often been deplored, but the softness of this paradigm may help bridge the gap between the biological and humanistic sciences in the future.

In connection with the theory of cultural selection, it has often been stated that knowledge is accumulated. It is an incredible paradox that this very theory itself has deviated so much from this principle when viewed as a case in the history of ideas. The theories of social change have followed a dramatic zigzag course, where every new theoretical fad has rejected the previous one totally rather than modifying and improving it; and where the same ideas and principles have been forgotten and reinvented again and again through more than a century.

3. FUNDAMENTAL MODEL FOR CULTURAL SELECTION

3.1 The genetic basis of culture

Cultural evolution is much faster than genetic evolution, for reasons that will be explained later. This has given humans an enormous advantage over other animals in terms of adaptability. The human *capacity for culture* is based on our genes. You may call it a *metaadaptation* because this trait is an ability to adapt rather than an adaptation in itself. In this way, you may say that genetic evolution has created its own replacement. (This is called vicarious selection, see p. 74.)

Biological learning theory talks about programmed learning, by which we mean a pre-programmed faculty of learning a certain ability. The genes determine the ability to learn and set the limits for what may be learned and what may not. These limits may be wide or narrow (Gould, J. & Marler 1987; Mayr 1974; see also p. 224). The human capacity for culture is a learning program with very wide limits. The culture is not directly determined by the genes, and hence cannot be studied with the same methods as instinctive behavior.

An important aspect of the capacity for culture is the ability to learn from conspecifics. Learned behaviors may be acquired by observation and by listening to spoken instructions. But the spoken language is not the only channel of information. Humans have a peculiar propensity for religion, supernatural beliefs, rituals, music, dance, etc. These seemingly irrational phenomena are important media for the transmission of arbitrary behavior patterns, rules and norms. They are so to say the genes of culture, as we will see later.

Another important aspect of the capacity for culture is our group behavior. Humans have a remarkable ability to collaborate and propensity to identify with a group; to classify other humans according to their group affiliation; to favor and overestimate members of one's own group and depreciate and discriminate against members of foreign groups (ethnocentrism); and to display ones group affiliation by means of body adornment, language, rituals, etc. (Hogg & Abrams 1988). This pronounced group behavior means that the social group plays an important role in the cultural selection process, as we will see in chapter 4.

3.2 Cultural selection

Cultural selection theory is a theory about phenomena which can spread in a society, such as a religious ritual, a genre of art, or a certain fishing method. The theory entails three basic processes. First the phenomenon has to arise. This is called *innovation*. Next, the phenomenon may spread from one human to another or from one group of humans to another. This is called *reproduction* or *transmission* or *imitation* or *diffusion*. The third fundamental process in the theory is *selection*. By selection we mean any mechanism or factor that have an influence on how much or how little the phenomenon will spread. The most obvious kind of selection is the conscious choice exerted by humans.

Take agriculture as an example. For agriculture to start, some bright person must have invented a method of growing grains or other crops (*innovation*). This practice can then spread if the inventor gives on his idea to others who imitate his method (*reproduction*). Several conditions must be satisfied for this practice to spread effectively. Firstly, agriculturalists must be willing to give forth their knowledge to others. Secondly, non-agriculturalists must have contact with agriculturalists. Thirdly, non-agriculturalists must be willing to change their way of living. And finally, agriculturalists must be able to feed and raise a sufficient number of children. These four factors constitute the *selection* process, which is crucial for agriculture to spread in a population.

In this example, it is likely that the innovation has been made countless times without spreading, simply because it has been too labor-intensive. It took less time simply to collect the fruits that nature produced of itself, rather than growing them. In other words, the selection factors were not favorable for agriculture to spread until the natural resources became insufficient due to overpopulation (Rosenberg, M. 1990).

This model of cultural selection very much resembles Charles Darwin's theory of natural selection. The three fundamental processes are the same: variation (innovation), reproduction, and selection. The difference is that Darwin's theory is about genetic inheritance, while the cultural selection theory deals with cultural inheritance. Despite the formal similarity between the two theories, there are important differences which mean that you cannot draw any conclusions from one kind of selection to the other (Daly 1982). An important difference is that the cultural reproduction is not necessarily connected with human

reproduction. A habit can not only be transmitted from parents to their children, but also to other humans unrelated to the inventor. The custom of living in convents and monasteries, for example, has spread despite the fact that monks and nuns do not have children. Another important difference between the two processes is that acquired traits can be transmitted by cultural inheritance, but not by genetic inheritance.

It may be instructive to imagine a cultural phenomenon as an independent living being, which like a parasite or virus can spread from human to human and reproduce independently of human reproduction. In fact, the cultural selection theory is a very good model for describing the spread of infectious diseases. It is important to realize that a cultural phenomenon may have its own 'interests' which are not always identical to the interests of its human bearer. In the agriculture example, this custom only spreads when it serves the interests of the humans. Agriculture's interests are identical to the humans' interests - or it would not spread. But in the disease example there is a conflict between the interests of the virus and its bearer. Another interesting example is drug addiction. Heroin can make a human do things that he or she normally would not do, including recruiting others to the drug in order to finance one's own consumption. The drug has its own 'will' which to some extent can override the addict's will. Heroin addiction can spread despite the fact that probably nobody wants to be a junkie.

We can discuss *ad nauseam* whether cultural selection should be seen as selfish 'culture-genes' which like parasites cynically manipulate humans in order to reproduce themselves, or it is intelligent humans with a free will who consciously choose those cultural forms that best serve our needs. This debate seems fruitless to me since the end result always will be the same: Certain cultural phenomena are copied and transmitted more than others, and the characteristics of each cultural phenomenon are just as decisive for the outcome of this selection process as are the characteristics of the humans. The two extreme standpoints mentioned above are nothing but opposite ways of viewing the same events. When you pin it down to mathematics, the end result will be the same no matter which side you are seeing the process from.

In the following paragraphs, I will define the unit of selection and the three fundamental elements in cultural selection theory: innovation, reproduction, and selection.

3.3 Unit of selection

If you want to set up a detailed model for a cultural selection process then you must define what is selected. It would be incorrect to regard human individuals or groups as units of selection since a person can change his/her cultural traits several times in the course of his lifetime. Generally, you have to define a cultural phenomenon, an idea, a conception, a way of thinking, a behavior pattern, an artifact, or the information that creates or controls such a phenomenon, as the unit of selection for the model in question. Certain cultural phenomena, such as clothing fashion, are carried by individuals, whereas other phenomena, such as the form of political organization, can only be carried by a group of people in union.

In genetic selection models, the genes are often treated as indivisible units, but cultural units of information are seldom indivisible. If, for example, a certain piece of music tops the hit lists, then it is the piece of music as a whole which is selected, but if another composer gets inspired by this music and incorporates a certain sound or chord from it into a new piece of music, then it is only a little part of the original piece of music that is selected. The selection takes place at many levels, and you should not be misled by the term 'unit of selection' to think that it is something indivisible.

The difficulty in defining a cultural unit of selection has often led to confusion. You have to find a chunk of information which sticks together long enough for its spreading and selection to be measured. How big this chunk should be depends on the phenomenon you want to analyze. In principle, a complete analysis would have to comprise all levels of selection (e.g. the musical genre, the melody, a motif, a particular chord, and a particular sound), but for practical purposes it will often suffice to concentrate on one particular level which fits the purpose of the analysis. When studying a higher level in the hierarchy of information, such as an entire religion, a school of thought, or an art genre, then it is most appropriate to call it a meme complex rather than a single meme.

The problem with selection at multiple levels also exists in genetic evolution, where genes are seldom perfectly indivisible, and where not only genes and individuals may be selected, but also families of related individuals, groups of individuals, and even entire species and clades. But the problem is possibly bigger in cultural selection theory because

the units are more amorphous and the levels not sharply distinguishable. Even in a fuzzy system where all cultural units can be divided into subunits, valid units of selection can still be found by statistical techniques (Pocklington & Best 1997).

There have been many attempts to define a universal unit of selection, and these definitions have led to endless controversies in biological as well as in cultural evolution theory. One of the most general definitions is a *replicator*. Anything that is replicated relatively unchanged can count as a unit of selection (Hull 1988). This definition is not perfect, however. Consider the situation where innovations are judged by the inventors as good or bad. Good innovations are shared with others and replicated, whereas bad innovations are rejected by the inventor without telling anybody. This is obviously a selection process, and indeed a very important and powerful one. But if you define a unit of selection as a replicator then you have a problem because the de-selected innovations are never replicated and hence do not count as units of selection. You become unable to define the selection process unless you include *potential replicators* in the definition. But since almost everything in the world are potential replicators, this definition becomes over-inclusive and therefore useless. In my opinion, there is no universally useful definition of a unit of selection. You will have to choose from time to time the definition that best suits the phenomenon you want to study. In most specific cases of cultural selection you will find that the choice of unit of selection is quite obvious and uncomplicated, and that you can easily make a useful analysis of a specific phenomenon without having a definition that also applies to all other phenomena.

Biological theory makes a distinction between genotype and phenotype. Certain scientists make a similar distinction in the theory of cultural reproduction. Sociobiologists have defined a cultural disposition or a cultural unit of information, and several names have been proposed for such a unit of cultural information: *artifact type*, *mnemotype*, *idea*, *idene*, *sociogene*, *instruction*, *culture type*, *culturgen*, *meme*, *menteme*, *concept*, *rule*, *mental representation* (Lumsden & Wilson 1981; Stuart-Fox 1986; Hill 1989, Burns & Dietz 1992). The word *meme* is the name that has caught on, and the analysis of memes is called *memetics*.

The external manifestation of a meme can adequately be designated by the same word as in genetic theory: *phenotype*, in particular when connected to individuals. The reason for using the same word in both

cases is that the appearance or behavior of an individual is usually determined by both genes and culture, and it is usually difficult to separate these two factors. In more general terms you may distinguish between *replicators* and *interactors*. An interactor is the functional expression of a replicator that causes the selection (Hull 1982, Speel 1997).

Few sociologists have made a similar distinction between cultural dispositions and their external manifestation. In his sociology of education, Pierre Bourdieu makes a distinction between the inner cultural dispositions of people, which he calls *habitus*, and the external manifestation, called *social structure* (Bourdieu & Passeron 1970, Bourdieu 1979).

This distinction between a cultural unit of information and its manifestation is sometimes necessary. For example, it would be incorrect to say that a stone axe can reproduce itself. What is reproduced is the recipe for how to make a stone axe. The recipe is the reproducible unit of information, and the axe its external manifestation. The human who makes the stone axe is the bearer or host of the meme and the vehicle for its transmission. In other cases the distinction is unimportant, for example in the case of story telling (Ball 1984).

The unit of selection may be regarded as qualitative (e.g. whether people go to church or not), or quantitative (how often people go to church). Quantitative traits cannot be described adequately in terms of atomic units such as memes - we need a different kind of model. The following example will illustrate this:

In a free market economy, big companies tend to grow even bigger. This is because big companies enjoy the benefits of rationalization, mass production, mass distribution, mass advertising, synergism effects, and less competition (see page 134). The mechanisms that favor big companies over small ones obviously constitute a selection process, but not one that can be described completely in terms of memes. You have to define the sizes of the companies in quantitative parameters and analyze the dynamics of feedback in the system. Such models are well known in mathematics and adequate methods exist for their analyses (e.g. differential equations or laplace transforms).

3.4 Innovation

The cultural analogue to *mutation* is called *innovation*. A cultural innovation can be a new idea, a new way of obtaining food, a new ritual, a new song, a new rule, a change in the social structure, etc. When the word *variation* is used in this context it is a relic from Darwin's time when it was not known how new variants arose. Since *variation* usually designates a state of differentness in a population, it is reasonable to regard innovation (and mutation) as a more fundamental concept than variation, and the two concepts should not be regarded as synonymous.

The word *innovation* should not mislead anybody to think that this necessarily means rational and ingenious inventions. The word is used regardless of whether the new form deviates much or little from the previously known forms and whether the new phenomenon has arisen accidentally or as a result of intelligent thinking.

In biological evolutionary theory, all mutations are generally believed to be blind and random. But in the cultural process innovations are seldom completely random. Innovations may very well be planned, and they are often advantageous to the inventor.

Some inventions occur accidentally and randomly, for example by play or blind experimentation (Vandenberg 1981). If such an experiment turns out to have (subjectively) advantageous consequences, then it will be repeated, and a discovery has been made. But not all innovations are spontaneous and random discoveries. Most innovations are provoked by a certain problem that people attempt to solve. They may be ingeniously thought out or random experiments, but very often with the conscious aim of solving a certain perceived problem.

Innovations are not necessarily advantageous to the inventor. An innovation which has been made with the best intentions may have unintended consequences which makes it less advantageous than expected. Innovations can also occur by imitation errors. If a person has forgotten the exact procedure for doing something, and hence does it imperfectly, he may pass on an inferior version to his successors. This is a disadvantageous innovation.

Religion is an area where blind or irrational inventions readily occur. Even a seriously mentally ill person can be a prophet if his social group accept his hallucinations as revelations. But mental illness is not a

satisfactory explanation for deeply irrational decisions. Many societies have religious rituals which purposely induce hallucinations. This can be done in several ways: by hallucinogenic drugs, meditation, self-suggestion, ecstasy, sensory deprivation, etc. These hallucinations are interpreted by the religious actors as visions, revelations, prophecies, or omens, and they act in accordance with this interpretation. In lack of hallucinations, other means like interpretation of dreams, the weather, or other random occurrences, may of course be used in a similar way. But neither dreams nor hallucinations are truly random. They are products of the unconscious mind, which in turn is influenced by a lot of cultural phenomena such as religion, art, rituals, myths, emotional interactions, etc. The interpretation of these hallucinations, dreams, etc., is also to a high degree a matter of choice. The actors often consciously or unconsciously choose among the possible interpretations the one that gives the most advantageous conclusion. In this way a seemingly irrational hallucination may be a catalyst for a more or less intelligent decision.

Even in the most secular societies, some people make prophecies and omens based on random occurrences such as the position of stars and planets, the movements of birds and animals, the lines in the hand, coffee grounds, playing cards, or dice. It must be said that in the lack of positive knowledge people have a marked tendency for generating fictive knowledge and to act accordingly.

An innovation may be done in vain if the selection conditions are unfavorable at the time. Such an innovation may be forgotten or it may be saved in society's 'knowledge bank' to be later activated should the selection conditions change. A pluralistic society may in this way store an immense reserve of cultural possibilities, lying latently as unrealized ideas or as outmoded customs and rituals which are only upheld by a few deviants, but which may later come out and be activated or reactivated if altered selection conditions should favor them.

An innovation may even lag behind the development which it seemingly gives rise to. I am here particularly referring to moral and religious systems which may be *ex post facto* rationalizations which justify or stabilize a structure that already exists or is under construction.

We may conclude that there are rich possibilities for both rational and irrational, advantageous and disadvantageous, innovations to occur in

any society. In a pluralistic society you may find proponents of practically any point of view. Such a society will have an almost inexhaustible reservoir of ideas and cultural variations to choose between. Selection decides which of these innumerable ideas are promoted at which time.

Social innovations are often regarded by society as deviations, and the persons representing them are sometimes persecuted as deviants. The oppression of deviants has the function of preserving the social system. If a deviation spreads and wins acceptance in significant parts of the society despite all attempts at suppression, then we may say that a social change has occurred. A well-documented example of a religious deviation which has had a significant influence on the development of a society, has been described by Lewellen (1979). The significance of deviations will be further explained in chapter 8.

3.5 Reproduction

Reproduction of cultural traits is the second of the three elements in cultural selection theory, and the element that has been most thoroughly studied. Transmission of cultural traits can follow different patterns: vertical transmission is from parent to child; horizontal transmission is between unrelated persons; group socialization is the concerted influence of many (older) group members on a child or new group member; and the one-to-many transmission pattern is the influence of a teacher or leader on a group (Guglielmino, et.al. 1995).

Theories about how a human acquires knowledge, skills, norms, beliefs, and attitudes from others are known from the psychology of learning, biological theory of learning and imprinting, sociology of education, socialization theory, etc. This area has been so thoroughly covered by several disciplines that it is superfluous to go into details here.

I will only mention a single kind of cultural reproduction which has been insufficiently studied, namely unconscious communication. All societies are filled with irrational phenomena such as art, music, dance, religious rituals, myths, stories, and so on. The possibility of an unconscious communication or transmission from generation to generation through such media is included in the psychoanalytic theory of Freud:

"For psycho-analysis has shown us that everyone possesses in his unconscious mental activity an apparatus which enables him to interpret

other people's reactions, that is, to undo the distortions which other people have imposed on the expression of their feelings. An unconscious understanding such as this of all customs, ceremonies and dogmas left behind by the original relation to the [primal] father may have made it possible for later generations to take over their heritage of emotion." (Freud 1913:159)⁸.

If we refuse to accept that a rain dance really can make rain, then we must assume that the dance has some other function such as creating group solidarity or communicating some other values and emotions. The participants may not consciously realize this function, so there is reason to assume that the unconscious plays an important role here. My postulate is that many irrational human activities are media for a communication from the unconscious of one person to the unconscious of another. The persons involved may not realize that this communication takes place. I will support this theory later, especially in chapter 11. These irrational phenomena may be regarded as functional in the sense that they influence human behavior in such a way that they promote their own reproduction.

A tale about good and wicked people, where the wicked people die and the good people become happy in the end after many troubles and torments, may have the function that it conveys the norms of good and bad, and tells people not to give up when times are hard. Perhaps neither the storyteller nor the listeners are aware that this norm-communication takes place. Their conscious motive for telling or listening is a very different one: that the story is *exciting*. The criterion for what is experienced as exciting is probably a result of genetic as well as cultural selection.

A ritual dance performed by a shaman may tell his tribe: *I have magic powers and I am your spiritual leader*. A chain dance where everybody participates communicates values of solidarity and unity, while ballroom dancing where men and women dance in pairs sends the message that society is built upon the nuclear family as the basic unit.

The consequence of such a widespread unconscious communication is that every society has a collective mass of unconscious messages that

⁸. The word 'primal' is missing in the standard english translation, but the german original says 'Urvater'.

influence and homogenize their behavior. Such unconscious communication is very difficult to study because of the tremendous methodological problems in the science of psychoanalysis. There is nevertheless general agreement that the unconscious has an important influence on behavior. How such unconscious communication takes place is therefore certainly worth studying. I will return to this question in chapter 11.

3.6 Selection

The most fundamental principles for cultural selection were implied in the agriculture example on page 60. Three basic requirements must be satisfied for a cultural phenomenon to be transmitted from one person to another: Firstly, the two persons must have contact with each other; secondly, the sender must be willing to share his knowledge or unable to hide it; and thirdly, the receiver must be willing to accept this knowledge and to incorporate it into his behavioral repertoire. If one or more of these conditions are not fulfilled, then the phenomenon will be eliminated. The requirement for contact between sender and receiver means that such customs which imply social isolation do not easily spread. Selection by the emitter of information causes the spreading of such religions which command their believers to proselytize. Selection at the receiving end is seen in the trivial fact that if the advantage of a technological innovation is obvious to everybody, then it will spread fast.

A more primitive selection mechanism is the selective survival and reproduction of individuals based on their culturally determined behavior. An extreme example is certain religious sects which totally ban sexual intercourse, such as the Shakers. These sects have of course become extinct for lack of descendants. But celibacy memes are not always unfit. An individual who does not have to care for spouse and children will have more time and energy for preaching and spreading his memes (Ball 1984).

Religious prohibitions against contraception and abortion, on the other hand, is a mechanism which increases the number of genetic offspring - and hence also cultural offspring.

Selective survival may also operate at the group level. When one people defeats another in war, then the losing group is seldom completely exterminated, but their religion and their political organization may very well be eradicated when the victors force their religious and political

principles on the losers. Whether a tribe is destroyed or its religion is annihilated is admittedly two very different occurrences, but the effect in terms of cultural selection is the same: that those religions and those forms of political organization which generate military superiority will advance at the expense of weaker strategies.

An interesting kind of selection takes place when the receiver chooses between alternative senders. This is selective imitation. It is well known that successful businesspeople, athletes, or artists are imitated more often than those who are fiascoes. Other examples of selective imitation are teenagers' hero worshipping, or the imitation in developing countries of everything that belongs to the western industrialized world.

Boyd and Richerson have set up a model for this kind of selection under the name of *indirect bias*. The characteristic that makes certain people the preferred models for imitation are called *indicator trait*. And the criteria for choice of imitation model in the persons who imitate, is called *preference trait*. If both indicator trait and preference trait are subject to cultural selection and these two selection processes are coupled, then the process may run away and lead to exaggerated displays of prestige, according to Boyd and Richerson (1985).

Another interesting selection mechanism is the selective promotion of certain persons to influential positions such as leaders or educators (Campbell 1965).

More well-known mechanisms are economic competition and democratic elections.

Psychology often plays an important role in the selection of memes. The fittest memes often have a strong psychological appeal. They push our buttons. A psychological button is a metaphor for the stimulus/response mechanisms that make us pay special attention to certain topics, such as danger, food, and sex. These are topics that have been of vital importance throughout our evolutionary history, and a strong selection pressure has always existed for paying attention to any information about these subjects. Some of the most effective buttons are described on page 44.

Take jokes as an example. A joke about danger or sex pushes our buttons. This makes us pay attention to the joke, remember it, and pass it on to others. Jokes that do not push any buttons are soon forgotten, whereas the button-pushing jokes are remembered and passed on. They have higher fitness.

Button pushing plays an important role in the competition between commercial TV channels because it attracts viewers. News stories about horror or sex pushes more buttons than other, possibly more relevant, topics. Whether the stories are true and accurate has little importance: truth is irrelevant to the fitness of a story as long as no proof or disproof is presented.

Button pushing is widely used in commercial advertising and political campaigning to make us pay attention. A product that is supported by button-pushing commercials can easily outcompete one that isn't (Brodie 1996).

A meme has to make sense and be easy to understand. A meme that is difficult to understand or incompatible with existing memes does not easily catch on. But something that does not make sense is good at attracting attention to a meme. A paradox or something that contradicts previous knowledge creates *cognitive dissonance*. Our minds will always struggle to make things make sense and thereby pay attention to whatever creates the cognitive dissonance as well as to the meme that seems to solve it. People are more receptive towards new memes when they are placed in a paradoxical or mentally uncomfortable situation such as a painful initiation ceremony (Brodie 1996).

A consequence of this is that a meme may catch on simply because it is remarkable. If, for example, a minority of the population spells a particular word in an awkward and complicated way while the majority spells it in a straightforward way, then readers are likely to notice the awkward spelling when they see it, but fail to take notice when they see the simple form. Hence, the awkward form may gain wider usage simply because people remember only the form they took notice of. This is called the bandwagon effect.

The fastest and most obvious form of selection is conscious choice and rational planning. In this context it is necessary to distinguish between the cultural information (*meme*) and the utilization of this meme in a

specific action. Note that in the genetic selection theory the genes are tied to distinct loci, and one allele cannot enter a locus without displacing another allele, which is lost in the process. This is not so in cultural selection. One meme can enter the mind of a person without displacing any other meme. The person simply acquires new information without forgetting the old one. A human can thus have the knowledge of several different behavior patterns at the time he makes a choice. All the alternative memes are present in his brain, but only one of them is activated.

Many scientists have mistakenly described the choice of humans as a selective transmission of information, where it would be more correct to talk about selective use of the transmitted information. When, for example, the ladies' fashion recurrently changes between long and short dresses, then it would be absurd to claim that the information about short dresses displaces the information about long dresses, or vice versa. The women have always known everything about both long and short dresses. What is selected is not knowledge, but preferences. The fact that school children today learn about ancient religions without practicing those religions, can be taken as a proof that cultural information can be transmitted and preserved indefinitely, and still remain inactive. The too often ignored distinctions between knowing a meme, discussing it, endorsing it, and translating it into action, has been called *levels of retention* (Speel 1997). There are widely different ways of believing something and different degrees of commitment to a belief (Sperber 1990).

As already explained, both the innovation process and the reproduction process may be selective. In some cases it may therefore be difficult to separate innovation, reproduction, and selection as three distinct processes. Some theorists hold that cultural information is transformed or modified each time it is copied, and the accumulated effect of multiple such transformations makes the process tend towards the most psychologically attractive representation (Sperber 1996). Things get even more complicated when we consider that variations in the frequency of innovations may have a selecting effect: Innovations are relatively rare in a well functioning and stable society, whereas cultural crisis stimulates innovations. A dysfunctional culture, full of stress and conflicts, will have more innovations for selection to work on than a well functioning culture that makes everybody happy. The dysfunctional culture is therefore likely to have a shorter lifespan.

Those readers who want more exact mathematical formulations of certain distinct cultural selection mechanisms are referred to the literature reviewed in chapter 2, in particular Boyd and Richerson (1985), who also discuss the influence of genes on cultural selection criteria and mechanisms.

3.7 Selection of meme complexes

Some cultural selection processes are more aptly viewed as the selection of entire *meme complexes* rather than single memes. This applies for example to the spread of religious cults. New cult members buy the whole package of beliefs and lifestyle rather than just a single meme. Typical parts of a meme complex include:

- Bait.** This is a promised benefit that make the meme complex look attractive to potential new hosts. For example the promise of a better life. Often the bait involves button pushing to get the attention of the potential host. The bait may be a trojan horse.
- Hook.** This is the part of a meme complex that urges replication. In the case of religion this is typically a command to evangelize. In the case of a pyramid scheme business or chain letter the hook is an economical incentive to recruit new members.
- Indoctrination.** Making sure that the host acquires all the memes in the meme complex. This may involve frequent repetition or brain washing. Rituals, songs, prayers, and oaths are typical examples.
- Protection against rival meme complexes.** This could be the meme that blind faith is a virtue and that heresy is a sin.
- Reward and punishment.** Obviously, rewards or punishments are often needed to make the host obey the instructions of the meme complex and its organization. A typical immediate reward is the belonging to a supportive social group. Sometimes the meme complex serves all the basic needs of the host. But the most powerful promised rewards and punishments are often due in a distant future or in the afterlife so that it is too late for the host to

change his mind if the promises are not effectuated. Obvious examples are Hell and Paradise.

Taxation. The demand that the host contribute time, energy, or money to the meme complex and its organization. These resources are needed by the organization for the purpose of competition against rival meme complexes.

3.8 Vicarious selection

Cultural selection processes can often be described as *vicarious selection* (Campbell 1965. Also called *preselection*). The principle behind vicarious selection is that a slow and ineffective selection process is supplanted by a faster and more effective selection process leading in approximately the same direction, whereby the adaptability is increased. The vicarious mechanism is in some way created by the old selection process, and may possibly be checked by the latter - albeit ineffectively - if it runs away. Campbell mentions our choice of food as an example. If we eat something inappropriate we may die from malnutrition or poisoning, so the choice of food is ultimately determined by natural selection. Our immediate choice, however, is based on taste. The genetic evolution has designed our sense of taste in such a way that healthy food tastes good. The taste criterion is approximately equal to the criterion of nourishment, and in this way the selection based on taste has become a replacement for the much slower selection based on survival.

Another example of vicarious selection is *sexual selection*. Many women prefer men that look strong and healthy. Physical strength is, at least in primitive societies, an important survival factor. The individual selection based on survival will promote physical strength, but the sexual selection based on partner choice preempts this process and weeds out weak individuals faster than the individual selection process can. In other words: sexual selection is vicarious for individual selection.

The best example of vicarious selection is rational choice. Our rules of hygiene, for example, have been introduced with the conscious aim of avoiding epidemic diseases. The same rules could in principle have arisen by the evolution of an instinctive urge to wash oneself. Or they could have arisen by cultural selection if religious cleanliness-taboos, innovated by chance, had been spread as a consequence of the fact

that those who obeyed these taboos had lower risk of dying from infectious diseases than others. The intelligent choice of hygiene rules is vicarious for the much slower selection mechanisms based on survival or death. The advantage of vicarious selection is obvious: It means a faster and more effective adaptation to changing life conditions, and lower costs in terms of deaths. The vicarious selection mechanism will therefore in itself be adaptive, and therefore be promoted by the process for which it is vicarious (Boehm 1978).

There is, however, a serious complication in vicarious selection mechanisms, namely that they never lead in exactly the same direction as the processes they supplant. Let us return to the taste example. In our society the choice of food based on taste has led to an over-consumption of sugar and to the addition of artificial flavorings to unhealthy foods. These possibilities have arisen so fast that the genetic selection has not had the time to check our taste. The most famous example of a vicarious selection process running away is the peacock's tail, which has evolved by sexual selection despite the fact that it reduces the viability of the peacock (see p. 87).

The concept of vicarious selection is important because the cultural selection process as a whole acts vicariously for the genetic selection, and indeed very effectively so. Many different selection mechanisms, including conscious choice, can be described as examples of vicarious selection.

3.9 Barriers in evolution

Biological evolution is not necessarily characterized by gradual change, as previously believed. Rather, evolutionary history may display saltatory periods of rapid change alternating with periods of relative quiescence, called *punctuated equilibria* (Somit & Peterson 1992). When a certain threshold has been passed, then the evolution goes relatively fast until a new equilibrium is established. The crossing of such thresholds has low probability and consequently happens very infrequently.

One possible explanation of such barriers in evolution is that the fitness effect of two different genes need not be additive. This phenomenon is called *epistasis* (Moore & Tonsor 1994). Assume, for example, that a hypothetical trait *AB* is coded by two dominant genes *A* and *B* on two independent loci. An individual that carries both these genes will have

the phenotype *AB* which gives high fitness. An individual that has either *A* or *B*, but not both, will on the contrary have a lower fitness than an individual which has neither. It is totally unlikely that the genes *A* and *B* will arise by mutation simultaneously in the same individual. The evolution of *AB* must therefore necessarily pass through an intermediary stage involving hybrid individuals who have *A* or *B*, but not both. These hybrids will always be rare because they have lower fitness. It therefore requires a great deal of luck for a mating between an *A* individual and a *B* individual to take place and produce an *AB* offspring. Once this has happened, there is a reasonably high probability that the new trait will spread (under certain conditions), and that other genetic changes will follow to fine-tune the new adaptation, leading to a new punctuated equilibrium. If a hypothetical trait requires more than two genes to be combined before a fitness gain is seen, then the probability is virtually nil.

This type of probability barriers in genetic evolution is the reason why new organs rarely arise in evolutionary history. It is more probable that an existing organ will be modified to a new function than that a totally new organ be created from scratch, because the former process requires fewer simultaneous gene changes than the latter. This is, for example, the reason why a bird's wings are homologous with our arms.

Similar barriers are often seen in cultural evolution⁹. A new idea can not easily gain a footing in a society if it does not make sense or if it is not compatible with the existing rules and structure of that society (Burns & Dietz 1992). The impediment occurs when the utilization of a new idea only is possible when several memes in society are changed simultaneously and these changes have considerable costs. As an example of this, Rambo (1991:87) mentions the well-known problems of exporting high technology to developing countries. The most well studied kind of cultural barrier crossings is in the history of the sciences, where such a barrier crossing is called a paradigm shift (Kuhn 1962).

In genetic evolution, the probability of a barrier crossing is extremely small if it requires more than two genes to change simultaneously. In cultural evolution, however, such a probability problem can be overcome by intelligent planning. Just think of all the complicated technological inventions that cultural evolution has created. A modern technical

⁹ . See Hodgson (1996) for the example of economic growth.

appliance can contain thousands of components, and if just one single component is missing then the whole device will not work. A similar degree of complexity cannot possibly arise by natural evolution unless every intermediate step in the evolution has a slightly higher fitness than the previous one.

Let me give an example of such a compatibility barrier in our society. If we introduced a decimal system for measuring time, rather than *hours*, *minutes*, and *seconds*, then all calculations of time differences would be easier. Such a change of time units would however have considerable costs because all social institutions and technical devices are adapted to the old impractical units. Things get even worse when we consider that we have a coherent system of measuring units. The *second* is a basic unit from which other units like *joule* and *volt* are derived. Decimalization of our time units would therefore require that all derived units also had to be changed. The short-term costs of such a change of measuring units would be so immense, that we renounce the long-term advantage, however obvious it may be.

This type of barriers may be impossible to cross in genetic evolution, but in the cultural process they can be overcome by intelligent planning and investment if the long-term advantage is sufficiently attractive.

Cultural compatibility barriers are sometimes constructed more or less deliberately in order to manipulate the selecting action of others. Social actors possessing intellectual power can define a certain situation or a certain social problem by means of a certain frame of reference, and thereby determine which kind of actions are possible in relation to this problem. Burns & Dietz (1992) characterize this strategy as "*redefining a situation to increase the likelihood of a desired outcome*." More about this in chapter 8.

3.10 Differences between genetic and cultural selection

The formal similarities between genetic and cultural evolution models should not mislead anybody to draw conclusions by analogy from one model to the other. The differences between the two processes are so important and fundamental that the cultural selection model should be regarded as an independent theory. The cultural process is extra-

ordinarily much faster and more effective than the genetic process, for several reasons which I will list here for clarity¹⁰:

- Acquired traits can be inherited (Lamarckian inheritance).
- Cultural innovations are often goal-directed and anticipatory unlike genetic mutations which are blind and random.
- Innovations occur more frequently when they are most needed, while mutations generally occur independently of selective conditions¹¹.
- Cultural selection is not necessarily connected to the birth or death of individuals. A human can re-choose or convert several times during a lifetime.
- Cultural selection may be intelligent and provident.
- Cultural selection encompasses more different mechanisms than does the genetic process. These mechanisms may work in parallel.
- Cultural reproduction or transmission does not only go from parents to children. It may go from any human being to anybody else. Unlike the evolution of species, the evolution of societies is often convergent due to diffusion.
- The cultural process does not have one universal and indivisible carrier of information analogous to the gene, but several qualitatively different entities which may be subjected to selection. Cultural information may be stored not only in the brain, but also outside the body in books etc.
- In genetic selection, alternative alleles have to compete for the same locus. Such a competition is absent in cultural selection because the informations are not tied to specific loci. Cultural

¹⁰. See also Daly (1982) and Ball (1984).

¹¹. Some bacteria show an increased mutation rate under starvation. The mechanism behind this is still unresolved (Hall 1990, Sniegowski & Lenski 1995).

heritage is often cumulative, and considerable amounts of unused information can be stored and later activated if changed selection conditions should favor it.

- In genetic evolution, there is a very low probability for the evolution of traits that require more than one gene to be changed simultaneously. Similar probability-barriers in cultural evolution can be overcome by intelligent planning. The evolution of complex functions is therefore much more probable in cultural evolution than in genetic evolution.
- According to certain mathematical models, cultural systems may exhibit more complicated behaviors than similar genetic systems, including multiple equilibria, oscillating systems, and stable polymorphism (Findlay, Lumsden & Hansell 1989a,b).
- According to some models, cultural group selection may be more effective than genetic group selection (Boyd & Richerson 1985, Findlay 1992).

3.11 Cultural selection in animals

Social scientists have traditionally viewed culture as something uniquely human. But if we define culture as a behavior pattern common to a group of individuals and which is transmitted from individual to individual by imitation or learning rather than by genetic inheritance, then there is no doubt that culture can be found in animals, and there are numerous documented examples of behavior patterns in animals which are transmitted by learning (Bonner 1980, Gardner et.al. 1994, Heyes & Galef 1996).

A touching example, which is always cited when the talk is about cultural transmission in animals, shall not be withheld here: In 1953, a one and a half year old Japanese macaque named Imo found out that she could wash off the sand from sweet potatoes by rinsing them in water before eating them. After four and a half years, 18% of the adult monkeys and 79% of the juveniles in the troop had learnt the potato washing technique by imitating Imo. In 1961, all monkeys born later than 1950 had acquired the technique except one. Masao Kawai has studied the spreading pattern for the potato-washing behavior and documented a connection with the social structure. In 1956, Imo made another

invention. She found out that she could separate wheat grains from sand by dropping them into the water so that the wheat grains would float and the sand grains would sink. This invention has spread in a similar way (Kawai 1965; Watanabe 1994).

The ability to learn from conspecifics is not limited to our closest relatives in the animal kingdom. Another famous example is about birds: Great tits have learnt to open the top of milk bottles and get access to the cream. This skill has arisen accidentally in a few places in Northern Europe, and from these centers of innovation the behavior has spread by imitation. The transmission by imitation is not limited to conspecifics. Related species like blue tits have been observed to imitate the bottle-opening behavior of the great tits (Fisher & Hinde 1949, 1951).

The song patterns of birds, the croaking of frogs, etc., are behaviors that young animals learn from their older conspecifics. This way of transmission leads to local dialects which may help the animals identify relatives from their home district (Mundinger 1980, Slater & Williams 1994).

Occasionally, it has been possible to document that the entire social organization of a group of animals has been modified as an adaptation to changed ecological conditions. Connie Anderson (1989) has observed a group of baboons which during a few years changed their social organization and mating pattern as a consequence of the presence of a predator. I will return to this example on page 139.

3.12 The applicability of cultural selection theory

As mentioned in chapter 2, cultural selection theory has been known since 1867. From my study of more than a hundred years' literature on this subject, it appears that the most striking problem with cultural selection theory has been that this theory rarely has been applied to the study of real world phenomena until recently. Those examples, which have been used to support the theory, have mainly been about rational selection, e.g. that new crops which give better yields are increasingly replacing older less effective crops. Such a conclusion is so trivial that an elaborate theory to explain it seems superfluous. In other words: Cultural selection theory has mostly been used to explain what was already obvious.

In my opinion, cultural selection theory has its greatest force in the area of irrational behavior. All societies are full of seemingly irrational and unproductive activities, such as religion, rituals, myths, tales, dance, music, festivity, art, fashion, play, sport, hobby, sex, and romance. All these activities have changed immensely during history, and we are seldom able to tell why. This is really a challenge for cultural selection theory.

But also rational decisions may have interesting selection effects. Egoistic decisions taken by influential persons or groups may have unwanted consequences for other groups or for the society as a whole. This leads us to conflict research, where selection theory also may be useful. If we can uncover the factors that determine the outcome of a conflict, then we may in principle be able to predict the macro level combined effect of a thousand micro level conflicts.

Functionalistic explanations in social theory have often been unconvincing for lack of a detailed etiological theory. In traditional analyses of the class struggle, for example, it has often been claimed that this or that institution exists *"because it serves the interests of the ruling class"*. The traditional analysis often fails, however, when it tries to find the architect behind the strategy of the ruling class. A close scrutiny may often reveal that such a strategy may be more refined and artful than the members of the ruling class can possibly have been able to think out and agree upon. In particular, this may be the case when we are talking about religious, ideological, or other cultural means. Such strategies of power cannot possibly be explained by rational planning alone, but only by taking into account the accumulated effect of repeated selecting events.

In the following chapter, I will further develop the cultural selection theory in order to improve its explanatory power. In the rest of the book I will apply the theory to historical and contemporary cultural phenomena. I will focus mainly on the long term cumulative effect of many small selecting events, on conflicts of power and on irrational phenomena such as religion and art.

As already explained, it is impossible to formulate a universal mathematical model that will describe any cultural selection process. Both innovation mechanism, reproduction mechanism, selection mechanism, and unit of selection depend on the specific phenomenon under study. Most cultural phenomena are subjected to several different selection

mechanisms which all interact with each other. An exact mathematical model for a real life cultural phenomenon like art or religion would be immensely complicated and have so many unknown parameters that it would be useless. I have therefore chosen to concentrate on qualitative rather than quantitative models in my study of cultural selection.

4. FURTHER DEVELOPMENT OF THE MODEL

4.1 The concept of fitness

Fitness is defined as the ability of an occurrence to survive and be reproduced in time and space. It is the imaginary mathematical function that a selection process strives to maximize.

Some evolutionary biologists prefer to use the word *adaptive* instead of *fit* in order to avoid the value connotation in the latter term.

Unfortunately, the word *adaptive* may cause confusion between the concepts of *adaptedness* (adapted state) and *adaptivity* (ability to adapt to changes in the environment). I will therefore still use the word *fitness*, but emphasize that no value connotation is intended. A trait that is fit under certain conditions may not necessarily be desirable according to ideological criteria.

The fitness of a replicator (gene or meme) often depends on several different factors. Some of these factors are important because they are responsible for a large part of the variation in fitness, while other factors are less interesting because they have only little influence on the fitness, or because they do not vary significantly within the boundaries of the system being studied. In systems which are too complex to analyze in detail, it may be useful to concentrate on those factors which have the highest effect on fitness. The most important factors define what I call the main selection criteria.

The concept of fitness only makes sense relative to a specified process of reproduction and selection, be it genetic or cultural, and a specific environment. It is important to recognize that fitness is a relative concept, depending on the selection mechanism and external conditions. Different selection conditions can lead the process in different directions, and an examination of the selection criteria is necessary for predicting the direction of evolutionary change. The failure to acknowledge this dependency has led to the often criticized unilinear theories of cultural evolution.

In order to illustrate the relativity of the fitness concept, I am going to give an almost classical example: The habit of tobacco smoking has spread to most of the world because it gives a subjective feeling of pleasure and because it is difficult for the smoker to quit when the unfortunate consequences turn up. But smoking undermines the reproductive health in many ways which reduce the probability of producing healthy children. We must therefore conclude that smoking is promoted by cultural selection but counteracted by genetic selection. Tobacco smoking has a positive fitness in cultural selection but a negative fitness in genetic selection. If we pin down the process of cultural selection into partial processes, such as hedonic selection, rational selection, economic selection, etc., then we will see that the broad label of cultural selection comprises many different mechanisms each pushing in its own direction.

The study of conflicts between different genetic selection mechanisms pushing in different directions has lead to important results in sociobiological theory. A similar study is highly needed in the area of cultural processes, and such a study is exactly the main purpose of this book.

A selection criterion is not the same as a selection mechanism, but it is determined by the selection mechanism and in particular by the external conditions and selective forces working on the system. I will explain what I mean by selection criteria by referring to the example of economic competition. Industrial enterprises may compete to produce the cheapest products of a particular quality. One possible mechanism in this process is that those factories, which use the cheapest sources of energy, manpower, and other resources, outcompete less efficient producers which then go bankrupt and disappear. A more efficient mechanism is that intelligent managers consciously seek the cheapest resources and production methods, thus avoiding bankruptcy. The latter mechanism is faster than the former, but they both lead the evolution in the same direction because they have the same selection criteria: cheap production. *Knowing the selection criteria without knowing the mechanism we may predict the direction of evolution, but not its speed.*

Before elaborating further on cultural mechanisms, I will make a necessary digression to genetic selection theory to explain the various selection mechanisms and fitness criteria known in that discipline.

4.2 Genetic selection models

Table 1 shows a schematic outline of genetic selection models and the corresponding fitness criteria.

Process	Mechanism	Fitness criterion	Result
1. Individual selection	The individual is working for its own survival and reproduction	Reproduction and survival of the individual	Effective reproduction, egoism
2. Kin selection	The individual is helping relatives	The survival and reproduction of the individual and its closest kin	Family sentiment, nepotism
3. Group selection	The individual is working for its group	Survival, growth, and fission of the group	Loyalty to group, altruism
4. Reciprocal selection	Friends contribute mutually to each other's benefit	The survival of both partners	co-operation when profitable to both parts; gratitude
5. Sexual selection	The individual chooses the most attractive mating partner	Ability to select the best mate or to be selected	Display of attractive traits

Table 1. Genetic selection models.

Explanation of the different mechanisms:

1. Individual selection. This is the simplest selection model and the basic idea of darwinism. It may be explained as everybody's struggle for his own life and reproduction, regardless of which effect his strategy may have on everybody else.
2. Kin selection. A gene which makes its bearer help his nearest relatives survive will, according to this model, gain in prevalence

because there is a considerable probability that the relatives carry the same gene. From the point of view of the selfish gene, it makes no difference whether its own bearer survives or somebody else carrying an identical gene survives. The more distant the relationship is with a relative, the lower the probability that the relative carries the same gene. Consequently, it pays more to help close relatives than distant relatives in terms of promoting one's own genes. The kin selection model has been important for explaining the social behavior of ants and bees, but it is also applicable to other animals, including humans. This model has been used to explain family sentiments and nepotism. The tendency of a gene to spread by the reproduction of the bearer *and its relatives*, is called *inclusive fitness* (E.O. Wilson 1975).

3. Group selection. The kin selection argument may be extended to bigger endogamous groups, where there is a high likelihood that all members of the group carry the same gene. Imagine an animal species living in groups where there is a very low migration of animals between groups. If the survival of the group as a whole and its ability to spawn new groups is dependent on the willingness of the group members to cooperate and help each other, then these behavior traits will be promoted by group selection. If group selection is strong enough, it may lead to behaviors that reduce the individual fitness of its bearer but increases the group fitness. This phenomenon is called *altruism*. An extreme example of altruism is the willingness of an individual to sacrifice his life in order to defend his group. (E.O. Wilson 1975, Wynne-Edwards 1986).

Group selection theory includes several sub-models, depending on how groups are extinguished and how new groups are formed (Boorman & Levitt 1980, Mayo & Gilinsky 1987). There is a long standing controversy among sociobiologists over how strong or weak group selection is compared to individual selection and kin selection (D.S. Wilson 1983, B.J. Williams 1981, G.C. Williams 1966, 1985).

4. Reciprocal selection. If two (or more) individuals mutually help each other in such a way that the cooperation is to the benefit of both parties, then any gene that result in such cooperation may under certain circumstances spread (E.O. Wilson 1975,

Boorman and Levitt 1980). Wild dogs, for example, profit more from cooperative hunting than from hunting alone, provided that they can agree to share the prey afterwards. The cooperating individuals mutually increase the survival probability of each other, and one may speak of reciprocal fitness. There is, however, a serious complication to this mechanism, namely *cheaters* who are capitalizing on the benefits of receiving help, but failing to reciprocate the favors. This may lead to the evolution of complicated mechanisms for cheating, detection of cheating, calculating when cheating pays and when it pays better to cooperate, attempts to predict the strategy of others, etc. A theoretical analysis of these complications has led to new perspectives in the understanding of the human psyche (Trivers 1971, Nesse & Lloyd 1992).

5. Sexual selection. This mechanism has already been mentioned on page 74. It is about the choice of the best mating partner. The choosing part may evolve a preference for partners that look like they have good genes, and the part being chosen may evolve traits that improve their attractiveness in the eyes of the other part. These traits are not always relevant to the survival and reproduction of the couple. For example, male birds of many species have evolved brilliantly colored feathers and impressive songs because these traits attract the females. And the females, on the other hand, have evolved preferences for the same displays of beauty, not because it contributes to their reproduction, but because this preference increases the chances that their male offspring will inherit the beauty and thus be able to attract females (E.O. Wilson 1975).

I have now explained the most important models for genetic selection in order to illustrate that different selection mechanisms and different fitness criteria can lead the evolution in different directions.

4.3 Genetic r- and K-selection

We will now look at a different classification of evolutionary processes: the distinction between the so called *r-selection* and *K-selection* (E.O. Wilson 1975).

If a species lives under conditions where resources are ample so that there are good opportunities for expansion, but where there is also considerable dangers such as predators, then it will pay for this species to use most of its resources on breeding as fast as possible. This is called *r-selection*. The *r* is the mathematical symbol for the rate of reproduction. *r*-selection causes the evolution of small organisms growing fast and breeding fast. Examples are mice and insects.

The opposite of *r*-selection is *K-selection*. This is what happens when a species lives in an overcrowded environment where the population is limited by the available resources rather than by predation. The capital *K* is a mathematical symbol for *carrying capacity*, i.e. the maximum number of individuals that the resources in a given habitat can continually sustain. *K*-selection leads to the evolution of big animals which breed slowly and utilize the given resources optimally, and which invest a considerable proportion of their resources in the care of their sparse offspring. *K*-selection is found in those animals that come last in a food-chain, such as whales, elephants, and humans.

The *r/K*-scale has also been widely used for classifying reproductive strategies. An *r*-strategy is the strategy of an animal which breeds fast and produces numerous small offspring, but does not care for its offspring. A *K*-strategy involves late breeding, the production of few big young, and a diligent care for the sparse offspring. The *r*-strategy is advantageous when predation or other disturbances limit the population below the carrying capacity of the environment, so that there is always plenty of food. The *K*-strategy is the optimal strategy when the environment is crowded and the population size is limited by the scarcity of food or other resources.

The *r/K*-theory has been criticized because its theoretical foundation is over-simplistic, and because most of the variation in the parameters which are assumed to be connected with the *r/K*-scale is found to be a variation between lineages rather than between species in the same lineage or variation within the same species (Stearns 1992). A satisfactory theoretical explanation of the connection between various traits is sometimes lacking, especially in the case of *K*-selection (Boyce 1984).

However, even critics of the theory have to admit that the theory has merits:

“Enough people have found it a useful framework in which to interpret their observations that it must contain an element of truth. The problem is to identify that element.” (Stearns 1992).

The theoretical difficulties notwithstanding, there remains a significant correlation between the important traits, even when factors which might be seen as confounding are corrected for (Stearns 1992), and there have been several attempts to improve the model in order to bring theory in accordance with observations (Boyce 1984, Taylor et al. 1990, Kozlowski & Janczur 1994).

I will argue that the explanatory power of the r/K -theory is easier to account for when the theory is re-interpreted in terms of selection criteria. When the population size is small due to predation or other adversities, but food and other resources are plentiful, then the main selection criterion will obviously be the quantity of offspring. The optimal reproductive strategy will be to breed as fast as possible and produce as many young as possible, rather than spending resources on growing. In the opposite situation, where the population size is limited only by the carrying capacity of the environment, there will be a fierce competition for food, and the animals should be expected to develop competitive abilities. Body size will often be a decisive factor in the competition with conspecifics, and the optimal strategy will therefore be to spend more resources on growing big and fewer resources on breeding. The young are necessarily smaller than the adults and therefore have a disadvantage in the competition for food unless they are helped by their parents. Hence the evolution of parental care, and hence the production of few big young rather than many small. The process may be seen as self-amplifying because big animals are less vulnerable to predation and therefore more likely to be limited by the availability of food and other resources than by predation.

By re-interpreting the r/K -theory in terms of selection criteria here, I have made it more intuitively acceptable. Since the direction of evolution is determined by selection criteria regardless of mechanisms, the sometimes incomplete understanding of the mechanisms behind r - and K -selection becomes less problematic.

The fact that most of the variation in these traits is observed to be a variation between lineages rather than within species, as Stearns (1992)

objects, can easily be explained as a consequence of genetic barriers, as defined on page 75. The genetic variation within a species or lineage may be insufficient for adapting to a radical change in r/K -conditions because of genetic barriers. In this case the niche is more likely to be colonized by a different lineage whose traits lie closer to the optimum for that particular niche.

4.4 Cultural selection models

In cultural selection theory, the number of possible models is far greater than for the genetic processes, because both innovation, reproduction, and selection of cultural phenomena may involve many different mechanisms. All these mechanisms may interact with each other in so many complicated ways that a stringent account and classification of possible cultural processes is hardly possible, and it is even more questionable whether this would be a useful approach in applied social research.

Rather than building a taxonomy of cultural processes on selection mechanisms, I have chosen to base my classification on the social forces that give rise to selection, and the corresponding selection criteria. This principle is analogous to the abovementioned distinction between r - and K -selection in genetic evolution. I am using this shortcut not only to avoid intractable mathematical problems, but also because I consider the direction of evolution more interesting than its speed - and the direction of evolution is indeed determined by the selection criteria.

Cultural selection theory is still in its infancy, and what we need at this stage is general models which can provide a broad outlook. The reductionist approach of analyzing the details of one particular cultural selection mechanism among many would not lead to the general understanding of a complex society. Biological evolutionary theory has previously benefitted a lot from the r/K -theory but has now come to a stage where the r/K -theory seems too simplistic. The theory of cultural selection has not yet come to such a stage, and therefore a simplistic model is justified.

As will be evident from the following chapters, this approach has turned out to have an explanatory power far superior to that of previous selection models. Of course, I do not deny that other classification principles may have valuable applications.

4.5 Cultural r- and k-selection

I want to emphasize that the analogy between genetic and cultural selection cannot be used to prove anything about either mechanism - the differences between the two mechanisms are simply too big, as already explained. But the analogy may be useful as a source of inspiration, and should not be regarded as anything else in the following chapters when I am introducing what I will call *cultural r- and k-selection* (Fog 1997).

Cultural r-selection takes place when a group has substantial opportunities for political and cultural expansion, i.e. to defeat other groups and impose its ideology or culture on them, but at the same time has a great risk of falling victim to the expansion of other groups. In other words, the group is dominated by external conflicts and wars. By group I mean a cluster of people bound together by the feeling of a common collective identity, such as a tribe, a nation state, or a religious sect. Group membership is usually defined by religious, political, or ethnic belonging and is often symbolized by certain distinctive marks (Hogg & Abrams 1988).

Cultural r-selection results in the allocation of a high proportion of the group's resources to the fighting of external wars or conflicts or other collective dangers. The group with the strongest military force and the most effective strategy will win in the process of cultural group selection. In other words, r-selection leads to armament. This armament is not only of a technical kind, but also very much of an ideological and political nature. A strong community spirit is fostered in connection with an ideology saying that the individual exists for the benefit of the community, that the individual should sacrifice himself for the community, that discipline and uniformity are regarded as virtues, that martyrdom is the highest honor, and a strong central government is regarded as a sign of wealth. This kind of ideology and a corresponding political organization will make the strongest forces in political as well as ideological conflicts with neighbor groups, and will therefore have the highest cultural fitness in a situation where cultural r-selection is dominating.

The opposite of cultural r-selection is cultural *k-selection*, which takes place when a group has no opportunities for cultural expansion and is not threatened by aggression from other groups. This will typically be the case when a group is geographically isolated, for example on a

solitary island, or when the cultural differences between a group and its neighbors are small compared to the internal differences within the group. The external conflicts are small or non-existent, and the only conflicts that are significant in selection processes are group-internal conflicts between leaders and subjects, between subcultures, or between individuals.

A strong military force would be a waste of resources in the absence of external conflicts. The population will not accept a despotic government that unifies and disciplines. They will rebel against powerful leaders, and the fights for freedom for everybody will be the dominating conflicts. This will lead to an ideology where society exists for the benefit of the individual, and not vice versa. There will be more freedom of choice for the individual and higher tolerance towards individual differences. The leaders will regard the life and welfare of any individual as important.

The selection criterion for cultural r-selection may be characterized as imperialistic. It is the ability of a culture to spread to new peoples and to withstand the influence from other cultures. The selection criterion for cultural k-selection, on the other hand, is the contentment of all individuals and thereby a minimization of conflicts between leaders and subjects. Only by satisfying the needs and wishes of all individuals as good as possible can the culture avoid upheavals. The r-selection is determined by the reproduction of culture in space, the k-selection is determined by reproduction in time.

In order to avoid the impractical r- and k- terminology and to establish a distance to the flimsy analogy with genetics, I will here introduce the words *regal* and *kalyptic* to replace the symbols r and k in connection with cultural selection. The result of cultural r-selection will be termed a *regal culture*, and the result of cultural k-selection is called a *kalyptic culture*. The word *regal* comes from *rex*, which means king, and I have chosen this word because a dictatorship can be regarded as the prototype of a regal culture. I have formed the word *kalyptic* from *Kalypso*, the name of a nymph in greek mythology, who held Odysseus captured on a desert island. This word is chosen because the most typical cultural k-selection is found on isolated islands. You may notice that the *K* in *genetic* K-selection is capital because the mathematical symbol it implies is so, whereas *cultural* k-selection is written with a small k because it stands for *kalyptic*.

The concept of regal may be delineated by the following definitions:

1. a regal selection is a cultural selection process dominated by inter-group conflicts or other collective dangers.
2. a regal culture is the result of such a selection, *or*
3. a culture which spends a high proportion of its resources on expansion or defense, *or*
4. a culture that limits the freedom of the individual member and makes considerable demands on the resources of the individual for the purpose of strengthening the group.
5. a regal cultural product is a cultural phenomenon which is part of the strategy of a regal culture or otherwise a typical product of a regal culture.

The term *kalyptic* is of course defined as the opposite, i.e. a culture which is not dominated by external conflicts, which spends more resources on satisfying the individual than on strengthening the group, and which attaches importance to individual freedom. The words should preferably be applied as relative graduations, rather than as absolute ideal types. It makes more sense to say that culture *X* is more regal than culture *Y*, than to just say that culture *X* is regal.

The congruity between the above five definitions holds of course only as long as my theory stands. For simplicity I have chosen to apply the same term to an evolutionary process as to its result, and to whole cultures as well as part cultures and cultural products. This deliberate lack of precision is due to the fact that the present theory is at an early stage of its development. I am hereby acknowledging that a too stringent definition may limit research to a single paradigm and thereby impede further development of the concepts. The meaning will be apparent from the context and the examples given¹².

¹². To those readers who feel offended by this deliberate lack of stringent definitions, I will remind that conceptual precision is characteristic of the end of scientific research, not the beginning. The most appropriate way of defining an incompletely researched phenomenon will in many cases be by examples. For example, it was impossible to define the concept of *color* precisely until the wave nature of light was known. Nevertheless,

4.6 Mechanisms in cultural r/k-selection

As explained above, cultural r- and k-selection may be defined by the driving forces pushing the evolution in one or the other direction. The most important driving force behind regalization is conflicts between groups, while the driving force behind kalyptization is conflicts within a group, or to be more specific: between leaders and subordinates. However, a driving force is not the same as a mechanism. I will therefore explain some possible mechanisms behind cultural r- and k-selection.

The fundamental factor in regalization is war. A society with strict discipline and an effective controlling of the population will have higher chances of winning a war than a more soft society. The victors are likely to force those political, ideological, and religious principles on the defeated people, that made the strong government possible, and consequently those traits will spread. This may be proven statistically as a correlation between political centralism and military efficiency (Otterbein 1970).

It is important to understand, however, that regalization also is possible without war. The *threat* of war is sufficient. The people will soon realize that armament, physically as well as morally, is necessary to meet the threat of war, and the public will have no problems understanding that sacrifices are necessary to defend national security. The cold war and arms race between USA and the Soviet Union was a clear example of such a reaction. We may here speak of *vicarious selection*. The rational reaction to the war threat reduces the risk of being attacked as well as the risk of losing a war if it should come. The cultural result is the same as if they had passively waited for the war: regalization. The vicarious

nobody was in doubt what color meant because it was easy to define by means of examples.

The often stated demand for precise definitions have some unfortunate consequences which too often are ignored (Koertge 1984). A precise definition of a phenomenon will often resemble the etiological theory of the same phenomenon to such a degree that the causal explanation is reduced to a tautology, which prevents the research for alternative explanations. All too often, a precise definition only makes sense within a certain paradigm and consequently restricts research to this particular paradigm. Such a restriction would be particularly unfortunate here where interdisciplinary research is the aim.

selection works in the same direction as the direct selection, but faster, more effectively, and with fewer costs. Vicarious selection is therefore a very important factor in cultural selection.

The opposite process, kalyptization, is found among people living in peaceful surroundings. In the absence of external conflicts, the internal conflicts will be the dominating factors determining the direction of cultural evolution. In a competition between alternative political systems, people will prefer the most comfortable, i.e. the one that lays the fewest demands on people and gives the highest freedom and autonomy to the individual. You may call this hedonic selection (Martindale 1986). The population cannot accept a tyrannical dictatorship, and will rebel against excessive concentrations of power. In the absence of other possibilities, the population can vote with their feet: They can simply flee from the regal society to a more kalyptic one. Such an exodus is of course most effective against a small tribe, but also bigger nation states may be influenced in the kalyptic direction by the threat of mass emigration. On the other hand, the emigrants may cause a regalization of the society they invade.

Another selection mechanism which may lead in the kalyptic direction is economic and technological competition. A kalyptic society is usually more tolerant towards individual economic initiatives than a regal one. This kind of liberalism provides a better breeding ground for economic growth and increasing material wealth. A k-strategy also involves higher investment in education. This investment pays off in scientific and technological progress. The result of investments in enterprises and education may be that a kalyptic society in the long term will win over a more regal society in the economic competition. During the cold war, the Soviet Union was more regal than the USA, but the latter won because economic growth and technological progress made possible a superior military technology. President Michail Gorbachov no doubt realized the economic ineffectivity of the rigid soviet society when he introduced his policy of openness and reform. The result of this selection process is that american and european culture now floods the former Soviet Union, whereas very little culture is diffusing the other way.

These considerations do not, however, mean that economic competition always leads to kalyptization. Economic power and political power are strongly connected, and where economic competition favors large-scale operations, the concentration of economic power will also mean a

concentration of political power. Much of the *de facto* power will lie in the hands of businessmen rather than democratically elected leaders.

The difference between regal and kalyptic cultures may also be defined as a difference in the *reproductive strategy* of cultures. A regal culture is a culture which utilizes the energy and resources of the individual members in the interest of reproducing the same culture. An obvious example is a religion which commands its adherents to proselytize. The missionary work is in the interest of the reproduction of the religion, not the missionary. The strategy of a kalyptic culture is quite different. It gambles on offering its bearers as many advantages and as few burdens as possible. Such a culture spreads by means of the egoistic choice of individuals, in contrast to the regal culture which limits freedom of choice.

The word *strategy* here does not necessarily imply conscious planning. I am using the word in the same way as when biologists talk about the reproductive strategy of a primitive animal or plant having no consciousness. The reproductive strategy of a culture is not the same as the strategy of the humans. A cultural pattern which is able to effectively reproduce itself may have arisen by automatic selection of random innovations, or it may be the result of the intelligent planning activity of humans. The selection mechanism works whether humans understand this mechanism or not, and whether this cultural pattern is favorable to its bearers or not.

4.7 Vicarious psychological mechanisms

It is a well-known psychological phenomenon that external dangers to a group strengthen the solidarity within the group and create ethnocentrism and militarism. This phenomenon has been explained as well by evolutionary biologists as by social psychologists.

The biological theories emphasize the importance of group defense, building on kin selection or group selection theory (Lorenz 1963; Reynolds, Falger & Vine 1987).

Within social psychology, the concept of *authoritarian personality* has traditionally been used to explain ethnocentrism and fascism. The characteristics of a person with an authoritarian personality is that he desires a strongly hierarchical power structure and is willing to submit

himself to strong authorities, political, ideological and religious. He fears and hates foreigners as well as deviants within his own group, and his morals in religious and sexual matters are strict (Adorno et.al. 1950).

Several investigations have demonstrated that those attitudes and behaviors which are characteristic of an authoritarian personality, are promoted by factors which endanger the social order, such as war or economic crisis (Doty et.al. 1991; McCann 1991; McCann & Stewin 1984, 1987, 1990; Padgett & Jorgenson 1982; Jorgenson 1975; Sales 1972, 1973; Rosenblatt 1964). On the other hand, it is doubtful whether factors that threaten *the individual* lead to authoritarianism (Duckitt 1992). When some of the abovementioned studies show a correlation between mass unemployment and authoritarianism, it may be because unemployment means a crisis to society as a whole, and not only a crisis to the individual.

Some psychologists have expressed the opinion that authoritarianism and xenophobia are due to the projection of intrapsychic or group-internal conflicts on an external enemy (see Dennen 1987). This point of view has been criticized because it is impossible to draw any conclusions about intrapsychic mechanisms on the basis of the present experimental data (McKinney 1973). An alternative explanation is the so-called *realistic group conflict*-theory, saying that conflicts between groups of humans stem from real problems, most notably competition over limited resources. An increased competition between groups will strengthen group solidarity, the group will become more sharply demarcated, the group identity of the members will be strengthened, and traitors and deviants will be persecuted and ostracized (LeVine & Campbell 1972, see also Hogg & Abrams 1988).

Ethologists have explained the mechanism as an infantile reaction: Just like animal young seek protection by their mother when they are afraid, so do adult humans seek protection under a strong leader in case of fear, whereby they become easily indoctrinable (Eibl-Eibesfeldt 1989:183f). This theory has not explained, however, why collective dangers result in reactions different from dangers to the individual.

No matter which intrapsychic mechanisms may be working here, we can conclude that dangers to a society lead to a psychological tendency to solidarity and strengthening of the political organization. This mechanism is highly functional because it makes the society better prepared to

meet the crisis or external threats. We may see this as a kind of vicarious selection: Crises and external dangers cause a psychological armament, enabling the society to meet the dangers and possibly winning an intergroup conflict. The psychological armament by the threat of war causes the same cultural result as the war itself would: regalization - but faster and with fewer costs. This vicarious mechanism may have been created by either genetic or cultural selection, or most likely by a combination of several selection mechanisms.

Imagine a society in surroundings where there is peace most of the time. A regal culture would be disadvantageous in times of peace because it would spend an unnecessary amount of resources on disciplining the population and maintaining an unnecessary warrior force, and also because cultural r-selection, just like genetic r-selection, entails an uncontrolled growth in population and hence exhaustion of natural resources. In a malthusian way this would lead to famine and mass extinction (Malthus 1798). On the other hand, cultural k-selection, like genetic K-selection, would stabilize the population and ensure maintenance of the means of subsistence.

A regal culture in a peaceful environment may be inexpedient, but a kalyptic culture in bellicose surroundings would be fatal. A kalyptic group will always be easy prey to the desire of a regal neighbor for expanding its territory. A group can only survive in hostile surroundings if it is regal. There is no need to limit the population - the frequent wars take care of that. On the contrary, a fast breeding population is necessary for maintaining maximal military power.

The optimal solution for a group subjected to changing external influences must be *flexibility*. A fast regalization when an external danger is threatening, and fast return to a kalyptic strategy when the danger is over. The ability for fast adaptation can only be achieved by vicarious selection. You may regard this as feed-forward control. Any mechanism that leads to such an improvement in adaptability would have such a big fitness advantage, that it would be promoted by genetic as well as cultural selection. The gene/culture coevolution is estimated to have taken place through at least two million years (Durham 1982), which is more than sufficient for a mechanism like this to become fixated in our genetic and cultural heritage. The abovementioned mechanisms may be interpreted in this way, although this is admittedly not the only possible explanation for the observed psychological reactions.

Theoretically, it is quite possible that several other vicarious selection mechanism of a psychological nature exist and remain to be discovered. (On page 174 I will return to vicarious selection mechanisms in connection with human procreation).

4.8 The paradox of revolution

When the regal selective pressure on a society is relaxed then the culture will drift in the kalyptic direction, driven by the desire for freedom and happiness in the individual. You may call this a revolution because it is the rebellion of ordinary people against the rulers. The revolution may be peaceful or violent. There is an inherent paradox in the process of violent revolution: The revolution can only succeed if it has enough supporters, and in order to recruit many supporters it must use strong means. In other words: regal strategies are needed to fight against regality. The goals of the revolution are easy to argue for: freedom, justice, and happiness. This is the 'carrot' that makes people rally to the revolutionary movement. But the rebels must take big risks and make immense sacrifices in order to have a chance of winning, and to make people do that the revolutionary movement must use psychological techniques characteristic of regal cultures. It must incite fighting spirit and loyalty. Desperate diseases must have desperate remedies. It may seem, therefore, that a kalyptic revolution is impossible, and that it will only lead to more regality. But history shows that it is indeed possible to make a society more kalyptic this way, and this is the paradox. The process by which the revolutionary movement recruits members is of course a selection external to the movement, but it is internal to the state to which it is rebelling. This intermediate position between internal and external selection means that the revolutionary organization is indeed regal, but less regal than that which it is fighting against, or you may say regal at a lower level. People do not forget what they are fighting for, and they will not sacrifice a lot for the cause unless they have prospects of a significant profit. The conclusion of this is that a revolution may be a step in the kalyptic direction albeit only a small step. The transition from a regal to a kalyptic society is a long and tedious process, taking small steps at a time, especially when violent means are needed.

An obvious example is the communist movement. It started as a revolt against the tyranny of capitalists and a demand for equality. This was

the kalyptic carrot that gave communism its many adherents and made possible a violent revolution. But from equality to conformity is only a little step, and the communist states somehow evolved in the regal direction. A massive ideological armament was needed to suppress religion and to meet the threat of war from the capitalist countries. The russians had replaced the tsar regime with the one-party system. True, from monarchy to oligarchy is a step in the kalyptic direction, but only a little step. The regal characteristics of state communism were easy to spot: centralist government, bureaucratic control, and systematic oppression of all other political and religious ideologies.

A more peaceful kind of revolt is seen in the many grass-roots movements that have cropped up in the western world during the twentieth century. People are fighting for democracy, human rights, disarmament, peace, abolition of slavery, racial equality, decentralization, religious liberty, protection of nature against exhaustion and pollution, women's liberation, sexual liberation, etc. The emergence of these movements is an indication of a kalyptization process in the western world now, when the colonial time is over. The success of these movements, and the fact that their organization in most cases is non-centralist, are unmistakable indicators that a peaceful kalyptic revolt may indeed be effective.

The concept of equality is still a schism in the cultural r/k process. A regal society is hierarchical and based on inequality and privileges. A kalyptic insurrection against the hierarchy is a demand for equality, meaning absence of privileges. But another sense of the word equality is conformity and uniformity, which is a regal strategy. The ideal of equality has been used by both kalyptic and regal advocates. Kalyptic when used against discrimination and privileges, as for example during the french revolution; and regal when used to justify imposed uniformity, as e.g. under stalinism.

Rebellions, civil wars, and other internal conflicts in a society do not always mean kalyptization. The rebellious groups may have regal motives or use methods that have regalizing effects. If a minority group in a society uses terrorism or other strategies which are dangerous to the society, then the conflict may have a significant regalizing effect, since the minority group is perceived as a threat to society as a whole.

Since the regalizing effect of such a conflict is of a psychological nature, it is the subjectively perceived social danger, rather than the real threat,

that determines whether the conflict has a regaling effect. Cases where the dangerousness of a minority group is highly overestimated or totally fictive are called witch-hunts or moral panics. I will return to this phenomenon on page 149.

4.9 Typical characteristics of regal and kalyptic cultures

You may imagine different cultures, subcultures, and cultural products ordered on a continuous r/k-scale spanning from the extremely regal to the extremely kalyptic. Of course, such a scale has only intuitive value. It is hardly possible to assign absolute numbers since the r/k-value is not defined by one exact criterion, but evaluated by many different criteria, most of which are more or less subjective. The purpose of introducing such a fictive scale is not to set culture on a mathematical formula, but to give meaning to comparative statements, such as: *"Rock music is more kalyptic than hymn singing"*. Of course, not all phenomena are comparable, but a necessary condition for a comparison to make sense is that you have a yardstick, and this is what I call the cultural r/k-scale.

Table 2 (page 102) is a list of characteristics which I consider typical for regal and kalyptic cultures. The list is only intended as an aid to interpreting the r/k-scale. A more thorough discussion of the different areas of culture will ensue in the following chapters.

	Regal	Kalyptic
Religion	Monotheism. Ascetic, puritan.	Animism, polytheism, fertility cult, ancestor worship.
Philosophy	Individuals exist for the benefit of society. Ethnocentrism, racism, material growth, expansion.	Society exists for the benefit of the individual. Individualism, tolerance, human rights, protection of natural resources.
Politics	Powerful central government, imperialism, uniformity, intolerance, censorship, severe punishments.	Decentralized government, democracy, tolerance, peace.
Art	Finical, perfectionist, embellished. Repetition of small details with strict geometry. Portrays symbols of power such as gods, rulers, war heroes, or predators.	Unrestrained, improvised. Depicts pleasure, fantasy, colors, nature, animals, fertility, individualism, rebelliousness.
Music and singing	Monotonous, embellished, or by offensive regality pompous. Strict rules for rhymes and foot. Choir singing, litany. Praises gods, rulers, military superiority, true love.	Bass accompaniment dominates over melodic voice. Rhythmic, varied, imaginative, often improvised. Broad repertoire of text themes.
Dance	Organized, restrained.	Unorganized, hilarious.
Dress	Decent, tidy, uniform. Sex-differentiated. Reflects social status.	Creative, individual, colorful, sexy. Reflects personal taste.
Architecture	Churches and government buildings are grandiose, ostentatious, rich in details, with oversized gates and towers.	Functionalistic, creative, individualistic, irregular. No stylistic demonstration of social differences.
Sexual behavior	Strict sexual morals. Stereotypical sex roles. Sex is only for procreation. Procreation is a duty. Children are regarded as asexual and ignorant. Contraception and abortion illegal. Early marriage. High population growth.	Liberal sexual morals. Sex has several purposes. Flexible, individual, pleasurable behavior. Sexual education of children. Education comes before marriage. Contraception and abortion accepted. No population growth.
Occurrence	Mainland with many wars and cultural contrasts. Empires. New colonies.	Small isolated societies. Peaceful regions with low population density and no cultural contrasts.

Table 2. Typical characteristics of regal and kalyptic cultural products.

4.10 Limitations to the theory

Every simple nomothetic theory has an inherent risk of reductionism and determinism. Focusing on one particular causal model may make you blind to other possible explanations. In social sciences there is never just one cause and one effect. No model is exhaustive and no theory is perfect. A general objection against causal models is that they are difficult to prove. Sociological data may show correlations, but you must never forget that correlations cannot distinguish between cause and effect. In the exact sciences, controlled experiments are considered necessary to prove causal relationships, but such experiments are impossible in social studies for ethical as well as practical reasons. Some sociologists may be tempted to reject nomothetic theories all together for these reasons, but that would not improve our understanding of social systems. The justification of a social theory lies first and foremost in its explanatory power and its ability to predict the effects of new influences. And in my opinion, the cultural r/k-theory has exactly these qualities, despite its simplicity.

The biggest risk of applying this theory is that you may be tempted to paint everything in black and white, when the truth is that everything is more or less gray. An absolutely regal or absolutely kalyptic society does not exist, and never has. Many organizations seem paradoxical or confusing because they mix regal and kalyptic characteristics and strategies in unexpected combinations. I have already mentioned revolutionary movements as such a paradox. Another example is certain authoritarian organizations where membership is difficult to obtain. Unlike typical regal organizations which are working hard to recruit new members, certain organizations have such strict demands for admission, that potential members have to work hard for proving their commitment and loyalty through various ordeals and initiation rites. Such organizations are far from fully utilizing their expansion potential, which by definition is a kalyptic characteristic. On the other hand, the demand for absolute commitment and loyalty is an important sign of regality. The background for this discrepancy is that the organization needs the full commitment of the members in order to defend its aim, rather than its membership, and that the quality of the members is more important than their quantity in this respect. Examples of such organizations are certain rocker and motorcycle gangs, secret fraternities, extremist political action groups, and criminal organizations.

4.11 Previously published related theories

The cultural r/k-theory is based on the distinction between external and internal selection, and this distinction is of course not new. Anthropologist Radcliffe-Brown, for example, has made a distinction between the internal and external adaptation of a society (1948:87), and Lenski (1970:89) has mentioned the possible conflict between internal and external selection without going into detail with the consequences of such a conflict.

David Hull, who regards scientific progress as a selection process, has compared scientists' ways of spreading their ideas with r- and K-reproductive strategies, but he does not draw any consequences of this distinction (Hull 1988:521).

Specific versus general evolution

Another classification of evolutionary processes which, just like the r/k-theory, is based on selection criteria rather than selection mechanisms, is the distinction between *specific and general evolution* (Sahlins & Service 1960). Specific evolution means adaptation to a specific environment and fixed conditions. General evolution means the evolution of improved *adaptability*, i.e. the ability to adapt fast to changing living conditions. This distinction between specific and general evolution is independent of mechanism and may therefore be applied to biological as well as cultural evolution. David Kaplan (1960) illustrates this difference with historical examples. He says that generally adapted cultures (this is what is commonly called highly developed cultures) often will be able to dominate over specifically adapted cultures, but not always. The latter cultures may be better off under special conditions, and may survive in their niche despite influences from more generally developed cultures.

Stress culture

The sociologists C. and W. Russell have developed a theory of cultural selection where the concept of stress-culture plays a central role. Overpopulation, famine, and other kinds of crises will cause a stress-culture characterized by a strict hierarchy, conformism, and cruelty towards children, according to the Russells' theory. The stress-culture is inflexible and the number of cultural innovations is small, which reduces the adaptability of the culture. The poor adaptation combined with starvation, etc., leads to a decrease in the population, whereby the stress factors disappear. This paves the way for a new cultural flourishing with

growth, inventiveness, development, and high artistic productivity. This so-called renaissance continues until the country again is overpopulated (Russell & Russell 1982-1992).

Despotism among animals

Biologist Sandra Vehrencamp has developed a model for hierarchic differences among social animals. According to this model, the leader of a group cannot subjugate the other animals so much that they would be better off leaving the group. The power of the leader is therefore determined by the advantages of living in a group compared to the possibilities of living outside the group. Applied to humans, this theory means that the power of a despot is determined by the possibilities for his subjects to leave the group (Vehrencamp 1983).

Genetic r/K-theory

The biological r/K-theory has given rise to a discussion of whether there is difference between different human races regarding their *genetic* r- or K-strategy, and whether such differences can explain racial differences in behavior or intelligence (Silverman 1990). This discussion has remained within a biological and genetic paradigm, and the significance of cultural heritage has largely been ignored in this discussion.

Some scientists draw very far-reaching conclusions from the genetic r/K-theory, maintaining that not only differences between human races, but also between different social classes, and even between individuals within the same class may be described with reference to the biological r/K-theory (Rushton 1987, Ellis 1987). These scientists are studying correlations between demographic variables relevant to genetic r/K-selection and certain behavior patterns which are believed to be characteristic of biological r- and K-strategies. (As explained on page 87, an r-strategy means that the individual spends most of its resources on producing as many children as possible, whereas a K-strategy implies that the individual has only a few children but invests a lot of resources on caring for these children). The reproductive strategy of women is a K-strategy, because for women there are high costs to raising children. The strategy of men, on the other hand, is more in the r-direction because in theory men can have an unlimited number of children at very little cost, and because men cannot identify their own children with the same certainty as women can. The same principle can explain age differences in behavior: older individuals are more inclined to invest their

resources in caring for the children and grandchildren they already have, than in having more children.

Behavior patterns connected with a relatively r strategy are, according to these scientists: early marriage, many children, opportunistic exploitation of the environment, colonialism, criminal behavior, and abuse and neglect of children. A more characteristic K behavior includes: diligent child care, effective utilization of energy resources, high intelligence, stable population, altruism, high degree of social organization, and marital fidelity. According to the theories of Rushton (1987) and Ellis (1987), the r-strategy is primarily found in humans of african descent and in people of low socioeconomic status, whereas the K-strategy is typically found in people of high socioeconomic status and in humans of oriental descent, followed by europeans.

Associations to the social darwinism (see p. 22) immediately come to the mind here. The main difference between the above theory and social darwinism being that the scientists themselves do not belong to the most noble race, but have to be content with a second place.

The weakness of this theory is of course that it overestimates the significance of genetic inheritance relative to cultural inheritance. Cultural selection is several orders of magnitude faster than genetic selection, and cultural selection theory is therefore much more likely to explain differences between groups of people than genetic selection theory is. (For further criticism see Cunningham & Barbee 1991, Allen et.al. 1992).

However, the interesting thing about the abovementioned theory is that those behavior patterns that Rushton, Ellis, and Silverman find to be connected with an r- respective K-strategy (from the point of view of a *biological* r/K-theory) are almost the same as I have found characteristic of regal and kalyptic cultures (from the point of view of the *cultural* r/k-theory)¹³.

¹³ . I had no knowledge of the above theory at the time I developed the cultural r/k-theory. The most important discrepancy between the conclusions of the two theories is the evaluation of the social organization, which according to the cultural theory is strongest in regal societies. According to the cultural theory, morals of marital fidelity are stricter in regal societies. When Ellis (1987) associates marital fidelity with K-selection, it is probably because of the consequences for child rearing. I regard altruism as kalyptic when it means care for the individual, but regal when it means that the individual sacrifices himself for the sake of the common good. As regards intelligence, I believe that this quality is highly

The r/k-theories are based on selection criteria rather than mechanisms. Consequently, many of the conclusions that may be drawn on the basis of these theories are the same whether the reproduction mechanism is genetic or cultural inheritance, or a combination. The differences between the conclusions from the two theories are determined more by differences in units of selection than differences in reproduction and selection mechanisms. This explains the similarities between the conclusions of the two theories. The main objection against using genetic r/k-theory to explain differences between groups of humans is about speed. Therefore such a theory will gain in credibility when cultural inheritance is replaced for genetic inheritance. Another theoretical possibility is to assume the existence of psychological or endocrinological mechanisms functioning as vicarious selection for genetic and/or cultural r/k-selection.

Spencer

Among previously published social theories, the one that comes closest to the cultural r/k-theory is, surprisingly, a theory that Herbert Spencer published in the late nineteenth century (see p. 17). Spencer defined several different types of societies, of which the most important are the *militant* and the *industrial* society. According to Spencer, the militant society is characterized by a strong central government. The government is strengthened by external conflicts, and weakened by internal conflicts. A society has two regulating systems: *sustaining* and *defending*. In the militant society, the defending structure dominates over the sustaining structure. The industrial society is opposite. It is marked by peace, weak government, and democracy. In the militant society, the individual exists for the benefit of society. In the industrial society, society is believed to exist for the benefit of the individual. In a militant society people live to work, in an industrial society people work to live. Collaboration is compulsory in a militant society, voluntary in an industrial society (Spencer, H. 1876, 1893).

If we replace the word *militant* with *regal*, and *industrial* with *kalyptic*, it is evident that, more than a hundred years ago, Herbert Spencer provided a quite precise characterization of these two types of societies. Although

dependent on social factors, most notably a stimulating upbringing and education, which are kalyptic phenomena. In this respect, therefore, there is correspondence between the conclusions of the genetic and the cultural theories.

at that time Spencer had already formulated the principle of selection (see p. 16) he had difficulties explaining the mechanisms behind the transition from one type of society to another. Often he resorted to almost teleological explanations, as for example that a strong government arises when the threats from external enemies necessitates it; or that the militant society is replaced by the industrial because the latter is more effective. Such explanations make more sense in connection with vicarious selection - a concept that had not yet been formulated.

4.12 Conservatism versus innovativism

The continuous reproduction of a culture may be more or less accurate. In a conservative society, customs and norms are followed in every particular, and any deviation from the norms will be sanctioned against. The opposite is a dynamic and progress-oriented society, where novel thinking is encouraged and where new ideas are entertained for the very sake of novelty. Tolerance towards innovations has the advantage that it speeds up social evolution and adaptation to changing conditions. On the other hand, innovativism threatens social stability because norms are more easily broken and because more resources are spent on trying out new ideas. How ardently old customs should be upheld or how much society should encourage novel and deviant ways, must be a compromise between social stability and adaptability. Conservatism would be the most suitable strategy for an isolated society under constant environmental conditions, whereas a society in a turbulent environment where new problems and challenges often arise would be better off showing tolerance towards new ideas in order to adapt as fast as possible to the ever changing conditions¹⁴.

Cultural r/k-theory says that an isolated society will evolve in the kalyptic direction and you would therefore expect a high tolerance towards deviant ideas in such a society. But the isolated society needs stability more than adaptability if the external conditions are constant. In old, isolated societies we may therefore often see a high degree of obedience towards ancient rules and norms and drastic sanctions against anyone

¹⁴. An analogous opposition is seen in genetic selection. A high mutation rate has the advantage of accelerating evolution and thus increase adaptability. But the tradeoff is considerable. Deleterious mutations are much more frequent than adaptive mutations, and a high mutation rate will therefore lead to considerable losses in the form of crippled or unfit individuals.

who breaks them, even though, in other respects, the same society shows a high tolerance and respect for individual peculiarities.

On this background we may define another dimension in the cultural selection theory: *conservativism* versus *innovativism*. A conservative society is a society which sticks to old traditions and life forms and does not tolerate change. The opposite is an innovative society, which encourages novel thinking and has a predilection for everything new. An isolated society will, according to this theory, evolve in the conservative direction thereby improving its stability, whereas a society that constantly must adapt to new conditions will evolve in the direction of innovativism. The conservative/innovative dimension is, just like the r/k dimension, defined by selection criteria rather than by mechanism.

This dimension - conservatism versus innovativism - is often in opposition to the r/k -dimension. As mentioned above, the kalyptic tendencies in an isolated society will tend to increase the tolerance towards deviance, but the conservative tendencies in the same society will involve intolerance towards any changes in the ways of life.

A similar dilemma may be seen at the opposite end of the scale. A society which is not isolated but in constant conflict with its neighbors may find a regal and conservative strategy most effective if the enemy always uses the same tactics, but if the enemy frequently invents new tactics or new weapons, then the society has to be innovative in order to adapt to the ever changing situations and new challenges. Otherwise it would lose the battle and be deselected. But innovativism and regality do not go well together because the regal society suppresses deviance, novel thinking, and individual initiative. Two societies can therefore compete either on regality or on innovativism, but not easily on both.

The middle ages was an era where european countries competed mostly on regality. But modern times have seen a change in parameters of action in the competition between industrialized countries. The arms race during the cold war was, to a high degree, a competition on military technology, where the winner was the most innovative, but not necessarily the most regal.

5. CULTURAL SELECTION THROUGH-OUT THE TIMES

5.1 The evolution of ever bigger political units

When humans began to cultivate the soil and raise cattle, they started a new evolution which has since influenced every aspect of human life. Previously, humans had lived as hunters and gatherers, but now different ways of living were invented. As explained on page 60, this invention was probably not selected for until an increased population density made it necessary to produce food in a more intensive manner than just gathering the fruits of nature. Another possibility is that agriculture was first introduced on the demand of a powerful chief who wanted to create a basis for increasing the population of his chiefdom for strategic reasons.

The theory of regal selection plays an important role here. A war between two tribes may lead to the result that the strongest group conquers the weaker tribe and incorporates the latter under its command, so that the two tribes become united into one bigger society under a common leadership. The biggest groups - and those which are ruled by the most despotic chiefs - will be the strongest and thus have the potential for growing even bigger. Through this self-perpetuating process, tribes and independent villages have been united into chiefdoms, chiefdoms have become states, states have become kingdoms, and finally, through an endless series of war and cruelty, enormous empires (Carneiro 1991, Spencer, C.S. 1998). Agriculture has played an important role in this regal development because it has made possible an increased population density and hence a significant military superiority.

It is difficult to tell what initially set off this self-amplifying process of political integration. Is it agriculture which has given rise to a steep population growth, or is it overpopulation and famine that has necessitated the introduction of agriculture? Is it whimsical hostilities between chiefs of different tribes that has started a series of ever bigger wars and retaliations, or is it failing hunting luck that has forced a hungry population into war? Anthropologist Robert Carneiro thinks that the evolution towards ever bigger political units has started in places where small, very fertile, areas were surrounded by less attractive areas. The population has been concentrated on the most favorable areas, which made contests over the attractive territories very likely (Carneiro 1970).

The population density in infertile areas must necessarily be low, and the big distances makes war difficult or impossible. A kalyptic equilibrium may therefore be sustained in such sparsely populated regions for millennia, whereas there are ample possibilities for regal development in densely populated fertile areas. The border areas of a fertile territory particularly invite to conflict. Outside the fertile area live hunters or nomads who are attracted by the allure of the conspicuous prosperity of the agriculturalists. The peasants, in turn, are tempted by the immense, almost unused areas outside. The two groups may attempt to conquer each other's land, only to find that the captured land is unsuited for their way of life.

The concentration of the population in towns has made possible an increased specialization and division of labor, and hence the development of trade, crafts, technology, and finally industry. This development has introduced new parameters of competition in the cultural selection: food production technology, arms technology, and communication technology. Improved food production methods have enabled a more intensive utilization of natural resources and consequently a still higher population density. Improved weapons have led to military superiority. And improved means of transport and communication have made it possible to unite bigger areas under a common government.

This continued integration and regalization has taken place in Europe, Asia, and Northern Africa with few intermissions since the end of the stone age. But there is a limit to everything. In antiquity and the middle ages there was a limit to how big empires could be, and the limits were, first and foremost, set by the means of communication. It was difficult to control a war that took place many days' journey from the palace of the emperor, and it was difficult to motivate people to sacrifice big resources on a war that took place so far away that it seemed totally irrelevant.

When an empire has reached the limits to its growth, then regalization stops and kalyptization commences. Only a despotic government is able to keep together such a huge empire and maintain the necessary discipline and military strength. The population can hardly see the necessity of a highly tyrannical rule, so they start to rebel. When the emperor reluctantly begins to loosen his iron hand, then the internal conflicts start to flare up. The population suddenly appears to be far less homogeneous than previously believed. All those sub-groups which, one

by one, had been incorporated into the empire, have preserved some of their religious or ethnic identity, and this identity is reinforced by their urge for independence and their rebellion against the despotism of the ruler. The population becomes divided and different sub-groups fight for independence. The empire starts to disintegrate and the monarch has a hard time trying to suppress the rebellious groups and keep his empire together. In the meantime, perhaps, a new kingdom nearby has started to grow. The old empire, which has now begun to disintegrate and kalypticize, is an easy victim to the expansive efforts of the new growing kingdom. The citizens do not wholeheartedly defend their country when attacked by the army of this new empire. They cannot imagine that the new ruler could possibly be more despotic and cruel than the old one, and many capitulate to the new emperor whom they regard as their liberator. In this way a new empire grows. Part of the old empire is incorporated into the new one, and the rest is split up into smaller states.

History shows many examples of the rise and fall of mighty empires. For example, many historians have pondered over the fall of Rome, but seen in the light of the cultural r/k-theory, it is easy to explain. When an empire has reached the limits of its growth then kalyptization sets in and the empire is weakened. After a period of beginning kalyptization the realm is either conquered by a new empire or simply splits up into smaller states¹⁵. The recent breakdown of the Soviet empire is a proof that this history still repeats itself.

Cultural selection has been dominated by regalization since the stone age, reaching its zenith around the end of the nineteenth century. By then all the continents had been colonized and further expansion possibilities were virtually exhausted. Now, lacking other possibilities, the great powers have begun to compete in conquering the outer space, but, since outer space is not habitable, this battle has only symbolic significance.

¹⁵ . E. R. Service has presented a similar theory of the rise and fall of great civilizations based on the distinction between specific and general evolution (Sahlins & Service 1960: 107).

5.2 The evolution of religions

Cultural evolution is clearly much faster than genetic evolution. This has given humans an enormous lead over other animals in the ability to adapt to changing living conditions. The unsurpassed capacity for culture in the human race has resulted in an enormous increase in adaptability. This capacity should be regarded as a *metaadaptation* because it enables new adaptations.

The first condition for cultural evolution to arise in early times has been the existence of an effective reproduction mechanism. What was needed was an information carrier that could transmit an arbitrary instruction from generation to generation and thus be an effective substitute for the gene. This is where religion comes in. Religion is indeed such a mechanism that makes possible the continuation of arbitrary rules, instructions, and prohibitions. I will therefore claim that religion - or rather the propensity to have a religion - has arisen by gene/culture coevolution as part of our capacity for culture because of its high value as metaadaptation. Having explained the emergence of a cultural reproduction mechanism, we have no problems explaining the two other factors necessary for cultural evolution to be possible: innovation and selection. The conclusion of this argument is that early man has evolved the ability and propensity for having a religion because this is the basis of a metaadaptation that has since had an enormous influence on the evolution of the human race.

When foreign religions seem strange and foolish, seen with contemporary scientific eyes, it is worth remembering that they have an important function:

"This cultural inheritance can, on evolutionary grounds, be regarded as adaptive, and treated with respect. Note that when an evolutionary biologist encounters some ludicrous and puzzling form of animal life he approaches it with a kind of awe, certain that behind the bizarre form lies a functional wisdom that he has yet to understand. I believe the case for sociocultural evolution is strong enough so that psychologists and other social scientists, when considering an apparently bizarre, incomprehensible feature of their own social tradition, or that of another culture, should approach it with a similar awe, expecting that when eventually understood, when our theories have caught up with it, that seemingly bizarre superstition will turn out to make an adaptive sense. I find such an attitude totally missing in psychology and psychiatry today." (Campbell 1975).

For the same reason I find it unwise to characterize the religion or ideology of a people as *false consciousness*. The consciousness of a population is an important part of the social structure, and if you change the consciousness you also change the social structure. Thus regarding social consciousness as functional, it makes no sense to discuss whether one set of cognitions is more true than another (Foucault 1980:118).

"The most barbarous and the most fantastic rites and the strangest myths translate some human need, some aspect of life, either individual or social. The reasons with which the faithful justify them may be, and generally are, erroneous; but the true reasons do not cease to exist, and it is the duty of science to discover them. In reality, then, there are no religions which are false. All are true in their own fashion; all answer, though in different ways, to the given conditions of human existence." (Durkheim 1915:2).

A good example of a consciousness which can be neither true nor false is *identity*. Identity claims are tautological. "*If men define situations as real, they are real in their consequences.*" (Thomas & Thomas 1938; Merton 1995). In the nineteenth century Europe people were divided into christians and pagans. Faith was an important part of people's identity. Then came Karl Marx who rejected religion and made working men conscious about their economic oppression. This so-called consciousness-raising meant that the religious identity criterion was supplanted by an economic identity criterion with the result that new alliances were formed and new conflicts arose, leading in the long run to a substantial change in the social structure. Any identity criterion is arbitrary and can therefore not be assessed on its truth value, only on its function. Any talk about true or false consciousness in this connection is pure rhetoric.

Religion is a primitive form of regulation of a society, the first step above the hierarchical system of social animals. Religious rituals showing submission to the gods have been compared with the rituals that social animals use to show submission to a superior conspecific (Morris 1967).

Religion has been an all-encompassing mechanism for regulation and control in primitive societies. All aspects of human life were integrated into religion to such an extent that it does not make sense to distinguish between religion and culture in such societies. With the cultural evolution and humans' growing knowledge, rational selection has

gradually gained more and more importance over other less effective selection mechanisms, whereby society gradually has become more and more secularized. More and more of those functions which previously were integrated as part of religion have now been segregated as autonomous sectors: politics, economy, administration, judicial system, education, technology, medicine, science, social care, psychological care, etc. The religion loses more and more of its functions and is finally reduced to a curious appendix.

Like an exponential function, cultural evolution has been running faster and faster and the slow genetic evolution has had no possibility for keeping up. Our instinctive urges are still almost the same as they were in primitive man many millennia ago and this gives rise to some anachronistic phenomena in our psyche (Barkow, et.al. 1992). Certain characteristics from ancient natural religions still pop up from time to time in the modern society: in the initiation rites of certain organizations, in protest- and back-to-nature movements, in users of hallucinogenic drugs, in science-fiction movies, music videos, alternative medicine, healing, astrology, etc. Even the most convinced atheist who relies on science for explaining everything cannot help reading the horoscopes in colored magazines even though he claims not to believe in astrology. The deeply rooted tendency in man for believing in the supernatural is not easily discarded.

5.3 Animism

Our knowledge of prehistoric religions is very limited. Archaeologists may find bones, tools and pottery, but not music, dance, rituals, or myths. Most religious artifacts have been made of perishable materials (especially in kalyptic cultures) for technical and economic reasons, and possibly also because the process of production has been more important than the result (Gill 1982). Whatever religious works of art early cultures may have left over have probably been systematically destroyed by later regal cultures in their zeal to wipe out all other religions than their own. Our knowledge about the religions of primitive hunter-gatherers is therefore mainly based on small cultures which have survived in the more remote and inaccessible areas of the Earth until the beginning of the twentieth century. Today there is hardly any pristine hunter-gatherer cultures left that are not in some way influenced by western colonizers, missionaries, and businessmen. The very presence of modern people has a high influence on primitive cultures. Their

religion develops into a crisis cult as a reaction to the threat from the modern westerners and their power and wealth (Gill 1982).

Primitive peoples believed in spirits rather than gods. Everything in nature and the sky had spirits. The worshipping of ancestor spirits ensured continuity and stability in the culture. Even the most everyday things like huts, tools and food were holy or loaded with religious significance. Words had magic power. The most important function of religion was to organize daily life. All actions were integrated into the belief system to such a degree that religion and culture were indistinguishable in these societies.

Religion did not only provide the worldview and the perception of time and space. It also controlled the relationship between the hunter and his prey. Animals were regarded as more intelligent than humans, and some peoples believed that the animals deliberately let themselves kill in order to feed the humans. Myths, taboos, and complicated rituals ensured that the hunters never killed more animals than they needed. Of course, this limitation had an important survival function because it prevented exploitation and exhaustion of the natural resources.

Various rites of passage marked the transitions from child to adult, marriage, death, etc., and were therefore important for the organization of social life and the allocation of roles. Both transition rites, hunting ceremonies, ceremonies for exorcising evil spirits from the sick, and other ceremonies were joined by the whole community so as to strengthen community and solidarity and take care of the life and health of all individuals.

5.4 Polytheism

The introduction of agriculture and animal husbandry meant a radical change in the way of life and consequently also in the religion. Whereas the relationship of a primitive hunter to his prey was as the receiver of a gift, the peasant was able to produce his own food. Humans no longer regarded themselves as inferior to the animals, but as their equals, and later as superior to the animals, and finally as their masters.

The religious significance of animals was reduced in favor of the significance of the vegetation, the soil, and the sun. Religion became interested in fertility, and hence also in femininity and sexuality. The

perception of time also changed. A more precise measuring of the seasons was needed for the sake of the cultivation and the crops. The cyclic conception of time was reinforced: birth, death, reincarnation, the seasons, and the renewal of the crops.

Gradually, as humans got more and more power over their own living conditions, spirits and animal gods were replaced by, or transformed into, anthropomorphous gods. These gods became more powerful as power became an important concept in the daily life of humans. The gods had partially replaced legendary figures and mythological characters as objects for human projections. The increasing division of labor in society was also reflected in the realm of the gods: Priests, warriors, peasants, and tradesmen each got their own gods. The division of labor and increasing political integration lead to a complicated hierarchy and increasing distance between top and bottom. This hierarchy was reflected in a similar hierarchy among the gods and in particular an increased distance between gods and humans. As explained on page 76, there must be compatibility between the different spheres of a culture. In the evolution of religion there must therefore be compatibility between the realm of the gods and the realm of human life and this compatibility is indeed seen in the many similarities between the life of the gods and the life of the humans.

The polytheistic realm of gods has a number of psychological functions that resemble the functions of tales, theater, and children's role-play. The world of the gods resembles the world of the mortals of good and evil. The gods are used as objects for projection of the various roles in society and conflicts between them. By letting imaginary conflicts take place between the gods, humans have provided for themselves a projection screen that allows them to interpret, justify, and work through conflicts in society. The gods are role models for human behavior, and their behaviors have been elevated to norms by the idolizing and worshipping of these gods. The gods thereby become not only projection objects but also objects of introjection and identification. The role models represented by the gods become internalized whereby social roles become standardized. The loyalty to the gods is confirmed by frequent sacrifices.

Anthropomorphous gods are more suited than spirits and animal gods as identification models, and polytheism is therefore a more effective tool for controlling a complex society. The polytheistic societies have

gradually developed a realm of authoritarian and bellicose gods as a tool in the regalization described in the beginning of this chapter.

Polytheism is, however, far from the most regal form of religion. Compared to monotheism and pantheism, polytheism is fairly kalyptic. The polytheistic world of gods can certainly be used to justify a hierarchical and militant society, but it does not motivate ethnocentrism. Every town or every tribe may have its own local god. There is no theoretical limit to the number of gods. When polytheists meet a foreign people, they will regard the gods of the foreigners as either identical to their own or as local gods - but not as false. Polytheism can therefore no more than animism justify the suppression of other religions.

Another trait that limits the regality of polytheistic societies is the conflict between the gods. The gods may fight with one another, and there is no natural law deciding who is to win. Similarly, internal conflicts in a human society may be solved by fights. Nothing prevents slaves or other oppressed people from attempting to revolt. Even though a king can justify his power by claiming to stand nearer the gods than anybody else, he is not immune to attack. It is always possible to overthrow a king and install somebody else. In other words: polytheism cannot prevent the internal selection in a society, and therefore cannot prevent kalyptization.

We know far more about the polytheist religions than about primitive animism. Polytheistic empires have left many marks in our cultural heritage. Polytheism had its prosperity in antiquity when political units became bigger and bigger. This concentration of power in connection with a strong hierarchy made it possible for religious and political men of power to create cultural artifacts of a greatness never seen before. The big hierarchical differences were reflected in the architecture: barrows, megaliths, pyramids, temples and palaces. The increased wealth and division of labor has also given priests, philosophers, poets and sculptors the time and resources necessary to produce works of art of impressive proportions.

5.5 Monotheism

Monotheism is the most regal of all known forms of religion. The single god has created the earth and the humans. He is almighty and demands unconditional obedience from all humans. If we acknowledge the realm

of the supernatural as a model for human life, as explained in the above discussion of polytheism, then there can be no doubt that the almighty God is the archetype of an absolute monarch. The relationship between God and the mortals is a model for the relationship between the king and his subjects. The king has been chosen and blessed by God, and the demand for obedience to God will, in practice, mean obedience to God's representatives on Earth, i.e. the king, the clergy, and the religious commandments. Monotheism is therefore the best suited form of religion for justifying and stabilizing an absolute monarchy or a strong concentration of power. Monotheism is also a patriarchal religion because God is male and there are no goddesses.

Another important trait that makes monotheism regal is the unique intolerance towards other religions. Polytheists regard the gods of other peoples as no less real than their own, and pantheists accept that divinity may appear or be portrayed in any shape, including any figure that other religions may attribute to their gods. Monotheists, on the other hand, deny the existence of all other gods than their own and regard it as a mortal sin to worship these non-existing gods. As a consequence of this, monotheists seem quite disinclined to listen to the religious messages of foreign people. It is obvious that this unsurpassed fanaticism has a regal function in that it reduces the probability that a monotheist will convert to another religion, and increases his motivation to attempt to convert others to his own faith.

The separation between God and mortals is total in monotheism. Time is conceived as linear, beginning at the creation and ending at the day of judgment. Monotheists seldom believe in reincarnation because this would be inconsistent with the linear conception of time.

The three big monotheistic religions, judaism, christianity, and islam, all have their origin in Asia around year 600 B. C. when there was incessant conflict between nomads and agriculturalists.

The god Yahweh was a local god for the tribe of Abraham. Abraham made an agreement of exclusivity with Yahweh according to which Yahweh would protect Abraham and his descendants on the condition that they never worshipped any other gods than him. The existence of other gods was not denied, they were only not to be worshipped. When the yahvists entered the land of Canaan they met the cult of the god El, and Yahweh became identical to El. This combined god got a cosmic

dimension, which he could not possibly have had when he was only the god of a family or clan. Gradually, the existence of other gods was denied, and the first monotheistic religion, judaism, was born (Eliade 1976).

At this time there was an iranian religion, founded by Zarathustra, which was not strictly monotheistic, but which had a high god, Mazda, who was almighty. Judaism has copied the conception of Paradise, Hell, and judgment day from mazdaism. This conception has turned out to be a very effective tool for controlling the population (Richerson & Boyd 1989, Dawkins 1976, Lynch 1996). The belief that God is a strict judge who sees and hears everything and who punishes all humans after death means that no action escapes God's attention and no sin remains unpunished. The perfect regal means of force. No king or emperor can possibly control what everybody does day and night, but the fear of God's punishment can make people control themselves, and self-control is the most effective form of control:

"The peculiar stability of the apparatus of mental self-restraint which emerges as a decisive trait built into the habits of every "civilized" human being, stands in the closest relationship to the monopolization of physical force and the growing stability of the central organs of society." (Elias, N. 1982: 235, see also cit. of Sumner & Keller p. 24)

After the crucifixion of Jesus, christianity broke away from judaism. The jews did not believe in Jesus and the christians scorned the jews for having crucified Jesus. The christians went out to the entire World and proselytized, as Jesus had commanded them to do, and gradually they won many believers.

Approximately six hundred years later, the prophet Mohammed realized that a religion which could unite the Arabs was needed. As a travelling trader he was acquainted with the religions of other peoples, and in particular he was fascinated by judaism and christianity. On the basis of these religions he founded islam, incorporating and reinterpreting several elements from other religions. Among other things, he identified the arabian high god Allah with the jewish and christian God, and the sanctuary in Mecca was made sacred to the muslims. The political proficiency of Mohammed was impressive, and over a few years he gathered a considerable host of adherents.

In the year 624 A.D. his army won a battle over a numerically much superior force, and from that time on the holy war, *jihad*, had become an effective means for the propagation of islam. After the death of Mohammed a dispute arose over who should be his successor, and in the year 680 a caliph killed Hussein, the grandson of the prophet. This led to a division of the muslims into two groups: the shiites who believed in the killed Hussein, and the sunnis who supported the ruling caliph. These two groups have fought against each other ever since, and this conflict has contributed to the maintenance of the regality of the muslims.

Even though the three monotheistic religions have the same origin, their strategies in the process of cultural selection are rather different. Since the jews regard themselves as God's chosen people it makes no sense for a jew to proselytize. A jew is defined as somebody who is born of a jewish mother. Few people convert to judaism, except when marrying a jew. On the other hand, many jews have converted to other religions. Consequently, the only way judaism can propagate is by the procreation of the jews. Judaism has strict sexual morals that put the jews under the obligation to raise many children. Judaism is a law-religion including precise precepts for the correct way of living.

The jewish people have lived most of their time as persecuted and exiled. They have got by with the help of a strong solidarity and an effective educational system. As a group, the jews have been too scattered to be a real political power. Not until the foundation of the state of Israel in 1948 have the jews been gathered in a number sufficient to be a potential political and military power. Centuries of persecution have led to a regality which lately has been evident in the conflict between Israel and the Arabs. History shows numerous examples where the regality that a group develops in a defensive situation can be easily applied offensively when the possibility arises. When an oppressed people comes to power they often become oppressors themselves, even though, from a moral point of view, you would expect them to show solidarity with other oppressed groups.

The cultural selection strategy of christianity is more regal than that of judaism. An important element in this strategy is that christianity commands its adherents to do missionary work (holy bible: Matthew 28:19). The missionary command has been a decisive factor enabling christianity, more than any other religion, to spread by means of

missionary work, crusades, religious wars, conquests, colonizations, and a systematic persecution of everybody who believes differently, culminating during the inquisition. Few people have converted to christianity on their own initiative, but millions have been coaxed, enticed, or forced into conversion.

Such an immense regal expansion could of course only be possible with a strong and effective control of the community. The threat of Purgatory and Hell was truly a strong means, but it can be made even stronger by the introduction of a means of power unique to christianity, namely that of original sin. Christianity is the only religion to claim that all humans are sinners. Other religions may have rules that are hard to follow, but no other religion attaches importance to rules which are impossible to obey. The commandments tell the christians not to covet, but desire is so deeply rooted in human nature that it cannot be repressed. By making all humans sinners, christianity puts everybody into an eternal debt of gratitude to their god and to Jesus, who let himself be sacrificed to atone for the sins of the mortals. Christians can only hope for the mercy of God and must continually pray for forgiveness for their sins.

"But law came in, with the result that the trespass multiplied; but where sin increased, grace abounded all the more," (holy bible:Romans 5:20).

"For I delight in the law of God in my inmost self, but I see in my members another law at war with the law of my mind, making me captive to the law of sin that dwells in my members. Wretched man that I am! Who will rescue me from this body of death?" (holy bible: Romans 7:22-24).

In order to control the inevitable sin, devout christians have isolated themselves in an ascetic monastic or convent life, far from all the temptations of the world. Asceticism is an effective means of self-control making the believer ready to obey the commands of the religion, no matter how much pain it may cost. Puritanism may reign, not only in convents and monasteries, but also outside where it has exactly the same function.

The ability of humans to submit to a leader is, according to ethological and psychological research, derived from the relationship between child and parent. Fear makes adult people seek protection under a strong leader just like fear makes a child seek protection by its parents. This mechanism is utilized by the christian religion: original sin and the threat

of Hell create fear in the believer, and this fear creates an emotional attachment to God, who takes the role of a father (Eibl-Eibesfeldt 1971, Freud 1948).

The strategy of islam is quite different from that of christianity. Original sin and asceticism is not found in islam. It is a law-religion built on simple rules that anybody can observe. Mohammed worked with impressive strategic skill on expanding his religious kingdom by wars as well as by negotiation. In this work he was repeatedly guided by revelations. It is impossible to know for sure how revelations manifest themselves to a prophet. To an outsider it may often look like religious leaders are deliberately defrauding their adherents by inventing arbitrary rules and principles and claim that they are guided by revelations, but in almost all cases they are probably rationalizing and honestly believing in their own principles. People can rationalize anything with religious arguments - even genocides. It is impossible to know whether these revelations were seen in the form of hallucinations like they have been in several other prophets in history. Neither can we know whether conscious or unconscious planning have been involved in these revelations or the interpretation thereof. But it is beyond doubt that Mohammed was an excellent strategist and that the strategy of islam was highly adapted to a military purpose.

Politics and religion are not separated in islam. The religious and political leaderships are one and the same. This makes government much more effective than in the christian countries where conflicts over authority between church and state may prevail.

A religious leader may gain the full commitment of the population to a war by declaring the war holy. Fundamentalist muslims have been seen flagellating themselves to the point of bleeding in religious processions in Iran under Ayatollah Khomeiny. Senseless as it may seem, this self-torture does have an important function. It serves to accustom the young men to pain so that they can become brave soldiers in the holy war against the infidels. Altogether, religious ceremonies are one of the most important agents of islam. The strenuous praying ritual, which is repeated several times a day, functions as a kind of brain washing, keeping out any non-religious conception of the world. Fearless soldiers that can endure any pain and suffering are created by promises of Paradise and the glorification of martyrs.

The most important factor that prevents this quite regal religion from spreading more than it already has done is its conservatism. Islam is the youngest of the world religions, and hence it has not had sufficient time to adapt to the modern society. Islam is as regal and inflexible today as christianity was in the middle ages. The poor education of the muslims is certainly a protection against the atheist thoughts that modern science may stimulate, but it is also an impediment to technological development. The ban on lending money at interests (a rule that christianity has ignored since long ago) is another serious obstacle to economic development. It is almost hopeless for the islamic countries to compete on the conditions of a free market economy as long as they maintain the prohibitions against interests, unless they happen to have oil or other valuable natural resources in abundance.

5.6 Oriental religions

The two oriental religions, buddhism and hinduism are, unlike the other world religions, pantheistic rather than monotheistic.

The fate of a person is, according to these religions, determined by his *karma*. The karma is a product of all the actions of a human and it follows the individual through numerous reincarnations. This world order ensures that everybody gets the fate he deserves without the need for intervention by a judging god.

The material world is regarded as an illusion. It is possible to lift away this illusion by means of yoga and spiritual exercises and get in contact with the divine, of which all are a part. Only thereby is it possible to free oneself from the eternal cycle of reincarnations and achieve moksa or nirvana, i.e. to unify with the divinity and cease to exist as an independent being.

The most important religion in India is hinduism. This religion has no founder, but has developed through the times. The hindus are divided in castes each having their role in society. People are born into a certain caste and it is forbidden to marry outside one's caste. This system preserves an ancient division of labor between priests, warriors, and producers. Even though the caste system was abolished by law in 1950 it is still effective.

Buddhism resembles hinduism in its conception of karma and reincarnation. The Universe is regarded as one huge being with buddha-nature. In the earthly world everything is suffering. This suffering can only be relieved by vanquishing the conception of being an independent individual, i.e. by total emptiness.

All the world religions are regal - otherwise they would not have become world religions. But the oriental religions are not quite as regal as the monotheistic religions, and their reproductive strategies in the cultural selection process are quite different. Most importantly, the oriental religions are tolerant towards people with differing beliefs. Even though a multiplicity of schools of thought exists within hinduism, there is seldom conflict between them. The divine is part of every human being and may assume any shape including the shapes that other religions attribute to their deities. There are therefore no idols or false prophets. There is nothing wrong with a hindu worshipping Jesus if he feels that he can best submit to the deity in this shape.

One controlling device that the oriental religions have in common with monotheism is that humans are punished for their misdeeds after death. After death monotheists end up in Purgatory, Hell, or Paradise, depending on how much they have sinned. Hindus are reincarnated into another caste, depending on their karma. Buddhists are also reincarnated, not in different castes, but in different worlds. In monotheism it is God who judges and punishes - in hinduism and buddhism it is the karma which, like a law of nature, decides the fate of every person. In monotheism no sin escapes detection by God's eye - in oriental religions no misdeed avoids setting traces in the person's karma. The end result is the same in both cases: self-control. When humans believe that every sin has consequences for themselves and that no misdeed can be hidden, then they are completely controlled by religion.

Even though all the world religions thus depend on the self-control of the individual, there are big differences between how the different religions utilize this power over humans in the service of the cultural reproduction. Unlike the monotheist worldview which functions as an archetype of centralist monarchy, the pantheist worldview implies an impetus to decentralization. The oriental religions are less bellicose. They do not initiate religious wars or crusades, and their missionary work is far less aggressive than that of christianity. Where the strategy of monotheism is

to deny and fight all other religions, the strategy of pantheism is to mingle with other religions and influence them from inside like a virus. This is a more peaceful and less regal strategy because it functions by intra-societal selection.

Christianity sets up a number of commandments and rules that are difficult or even impossible to obey, but, unlike the oriental religions, it gives no effective direction for how to suppress one's sinful desires in order to obey the commandments of the religion. Hindus and buddhists, on the other hand, are taught yoga, meditation, and other psychotherapeutic techniques enabling them to renounce all pleasures and endure all the sufferings and misery of life. Where monotheism forces its adherents to resist their own desires and instincts, the oriental religions focus on a psychotherapy that directly influences and blurs the inner impulses whereby an intrapsychic conflict is avoided. The claim put forward by psychoanalyst C.G. Jung that religion is psychotherapy, is certainly confirmed by this subtle mechanism (Jung 1935, see also Freud 1948).

These religions have their highest potential for expansion in infertile areas where hard work is necessary for survival because they offer a life-long escape from reality by their repudiation of the material world. The famous words by Karl Marx that religion is the opium of the masses gets new relevance in the light of this interpretation. This reminds me of drug addiction which, even though it is not a religion, offers escape from reality to unhappy people, and which gains control by influencing people from inside.

The history of Mahatma Gandhi is a good example of the effectiveness of the non-violent strategy. In Johannesburg in South Africa he organized an insurrection against the suppression of indian guest workers by the white government. In order to prevent the introduction of identity cards he made his adherents make a holy pledge to refuse to register even if it should cost them prison or death. But they should never use violent means. The violence was left to their opponent. This policy proved so efficient that Gandhi later used it in India which, thanks to his efforts, gained independence in 1947. Gandhi's policy has served as model for many other non-violent liberation movements in the West.

5.7 Religions are created by cultural evolution

None of the big religions known today were created in a single move. All the world religions contain traits from earlier religions, and syncretism is found everywhere (Eliade 1976). No founder of a religion has started from scratch. The prophet Mohammed, for example, was familiar with many different religions, and even though he founded islam on the basis of revelations, he included elements from several existing religions. Mahatma Gandhi and Sri Aurobindo, both of whom have had considerable influence on hinduism, were both educated in England where they read the bible and were influenced by christian thought, which has left considerable marks in their teachings.

Even christianity, which consistently has fought against any other belief and any idolatry, is not pure monotheism though it claims to be so. The Holy Spirit is, in its essence, very much like a pantheistic deity. The trinity between God, Jesus, and the Holy Ghost is a polytheistic trait. Also the worshipping of prophets and archangels reminds us of polytheism, and the worshipping of saints reminds us of ancestor cults. But the best proof of polytheistic traits is the existence of the Devil. In all respects the Devil fits the polytheistic definition of a god: He is a non-earthly, immortal being who has influence on the profane world. He is even influenced by sacrifices, although, of course, it is a deadly sin to sacrifice to the Devil. An almighty God would never allow the existence of the Devil. Even the most archaic form of religion, animism, has survived in christianity. In the time of Jesus it was still believed that diseases were caused by evil spirits which should be exorcised, and the bible has many examples that Jesus and his disciples cure sick people by exorcising evil spirits.

But christianity still evolves, as do all religions, and exorcism is no longer a part of mainstream christianity. During periods of kalyptization in the christian world, many concepts have gradually faded away. For example, many christians no longer believe in Purgatory, Hell and the Devil.

Founders of religions, reformers, and prophets exist in all societies. The vast majority of them are forgotten, while only very few of them are believed and recognized and gain influence. This is an important selection process. Numerous new religions, sects, and religious movements have arisen, even in modern times, which proves that the selection process is still active. Many new religions arise in times of

crisis or as reactions to radical changes in the society. In several cases, primitive peoples threatened by western civilization have developed a so-called crisis cult, the main function of which is to maintain the self-respect of the population confronted with the immensely rich and powerful westerners. Examples are the so-called cargo cults in Oceania and the ghost dance religion of the red indians (Gill 1982). The emergence of these crisis-cults is a clear example of parallel evolution in different cultures, which indicates that the law of cause and effect also applies to the evolution of religions.

New sects, which are often relatively regal, still arise in the modern society. In any society there will be some people who are easily influenced by regal devices, and these people constitute the resources that make the existence of a regal sect possible. Any sect that has found an effective means for recruiting new members, i.e. a niche, will be able to spread whatever its ideological purpose. In fact a sect need not have any other purpose than spreading. One such example is the Jehovah's witnesses. This sect makes considerable demands on its members and taxes a substantial amount of their time and money. These resources are mainly used for two purposes: recruiting new members by diligent missionary work, and holding on to the members they already have by attending to their faith with frequent biblical studies, services, etc.

As an instance of ecclesiastical self-criticism, Dean Kelley has examined which religious communities in the USA are progressing, and which have a declining membership. His conclusion was that strict churches which concentrate on nurturing the faith of their members by providing worship ceremonies have progressed at the expense of those denominations which use more resources on social and humanitarian work (Kelley 1978). This confirms the effectiveness of the regal strategy. Kelley has difficulties finding a connection between the growth of strict churches and other social and historical conditions, but psychologist Stephen Sales has found just such a connection. Sales has shown that authoritarian sects progress in times of economic crisis, whereas non-authoritarian churches succeed in prosperous times (Sales 1972, see also p. 96).

This shows that there are niches for regal as well as kalyptic religious movements. The orientally inspired "therapeutic" sects which were flourishing in the 1960's and 1970's were hardly as regal as the christian

sects. They were a result of a reaction against the materialist society and a symptom of a kalyptization of society in those prosperous years. As long as supernatural beliefs can resist the convincing logic of science, we will see that, in kalyptic times, traditional religions, whose principal function is to control the population, are increasingly being replaced by a multitude of new therapeutic movements which have, as their main function, making people happy, i.e. astrology, alternative medicine, healing, meditation, etc. In accordance with their relatively kalyptic nature, these movements are so decentralized and unorganized that you cannot speak of sects, even though they may be based on supernatural beliefs.

5.8 Secularization

Political leaders have always used political as well as religious devices for controlling the population, but in modern times the importance of religion has been weakened as science has taken over more and more of its functions. Religious arguments have been replaced by political, ideological, or scientific arguments. With industrialization and urbanization the bourgeoisie got more power at the expense of the aristocracy. The ideology of the bourgeoisie were couched in a scientific discourse about normality and human nature, so that what previously had been bolstered with moral and religious arguments now was presented as indisputable scientific facts. This definition of reality was regarded as natural. It was an anonymous ideology which enabled the bourgeoisie to take over the cultural and moral leadership (Ehn & Löfgren 1982). The cultural class struggle between the aristocracy and the bourgeoisie was primarily fought at the symbolic level as a fight over titles, honor, and ideologies (Bourdieu 1979). The two classes competed on self-discipline and stilted manners. In victorian times, the social facade was very important, with the emphasis put on correctness and moderation in everything from economics to emotions. Everything bestial, vulgar, or uncontrolled was shunned (Ehn & Löfgren 1982:72).

5.9 Imperialism

Looking back at the late middle ages we may notice that the distance between the aristocracy and the bourgeoisie was bigger in Central Europe than for instance in England. For many centuries the Continent has been marked by many wars, and the military forces therefore had great importance. The middle and lower classes had come to terms with

the king's strong monopoly of power and tax collection, because this was necessary to maintain a strong army. Because loyalty to the government was an important selection factor, the population developed the character of obedience to authorities for which the Germans in particular are famous. The situation was different in the British Isles which, thanks to their geography, were less exposed to wars than the Continent. The military power apparatus was less popular and the middle class had more autonomy and power. The success of the bourgeoisie was based on self-control, which became an important part of the British national character (Elias, N. 1982:316ff).

In perfect agreement with the theory, this resulted in a quite regal culture in continental Europe, whilst the British Isles developed a relatively more kalyptic society. But this picture was turned totally upside down with the ascending importance of naval warfare. The German authoritarianism turned out to be a boomerang because the authority could be replaced at any time so that obedience was paid to someone else. The English self-control, on the other hand, turned out to be a very effective regal instrument when the central government had been strengthened and regalized by the naval successes. Control by self-control is, as previously mentioned, the most effective kind of government possible. The economic liberty of the middle class had provided a breeding ground for flourishing industry and trade which formed the economic and technological basis for a superior military technology. Another important factor was that the British population was much more homogenous than that of Central Europe, and this homogeneity enabled a strong nationalism. Due to all these circumstances, Great Britain has been able to change fairly rapidly from being a relatively kalyptic country compared with the Continent, into the greatest colonial power of the world. In a surprisingly short time, the British culture has spread to the major part of North America, Australia, and New Zealand, and has furthermore left big traces in Africa and Asia. The British national character based on individualism and self-control has had an immense success in the process of cultural selection.

In contrast to this, German imperialism became, as the reader will know, a fiasco. Germany has never had the same possibilities for shipping and trade, and hence colonialism, as for example Great Britain, France, and Spain. Furthermore, the many local wars and the strong aristocracy have delayed the economic and technological development on the Continent, and the authoritarianism was not sufficient to unify and keep

together the inhomogeneous population. All in all, Germany was too late in the race for its imperialistic attempts to be successful.

At first sight, you may find it difficult to see any similarities between the character of the Japanese and the British, but there is a certain parallel in the histories of the two countries, namely a very late regularization. Thanks to its island geography, Japan has preserved a relatively kalyptic religion and culture up to the present days. Thrift, hard work, and obedience are traditional oriental virtues, but it is worth noticing that the obedience is assigned to decentralized authorities. There is no despotic central government. The freedom and flexibility that lies in the decentralized government has given the optimal conditions for a market economy. This unusual combination of decentralism and tolerance towards new ideas with a strong self-control is the major cause of the so-called economic miracle of Japan. But the late development and the relatively kalyptic culture has prevented the country from asserting itself as a political empire.

5.10 Modern society

In the twentieth century the main tendency has, for the first time in thousands of years, gone in the kalyptic direction. The ideals of freedom and human rights that arose in connection with the French Revolution are now, at last, being carried out. Colonies have become independent, slavery has been abolished, democracy has spread, and human rights have become the foundation of a new ideology. The most important cause of this is, as already mentioned, that almost all possibilities for expansion have been exhausted. The regal expansion obviously had to stop when all continents had been colonized, and a kalyptic development started.

Other causes for the present kalyptization are that economic and technological progress requires individual freedom, and that the fear that nuclear weapons will wipe out the entire world has bolstered the peace movements. The altered production structure has heightened the educational level of the population and thus made differences in the class structure smaller. Modern society makes considerable demands on the education of the population, and this stimulates a K-strategy in the families. Previously, it was an advantage to have many children because they could work in the household from an early age, but now it is expensive to raise children because they require a long education and

they are unable to support themselves until fairly late in their life. Most parents prefer to have few children and ensure a good education for these children, rather than having a large number of children who have to work, because education is the key to attractive positions in society. The state has taken over the responsibility for the care of senior citizens and thus eliminated the necessity of having children. The result is a stagnant population and an end to imperialistic expansions in the modern parts of the world.

5.11 Migrations

Migrations lead to a blending of people with different cultures and religions, and this often gives rise to conflicts and hence to cultural selection. This selection may go in the regal or the kalyptic direction depending on the circumstances. A sparse, slow and inhomogeneous immigration into a country will usually lead to kalyptization. In this situation the immigrants are perceived as individuals, not as a group, and they are therefore not a threat to the existing culture. Immigrants that come one by one are quickly integrated into the society because they have no possibility of preserving their original language and culture. The population slowly gets more and more inhomogeneous due to the immigration, cultures and religions get mixed, people get accustomed to accept differentness, and the possibilities for nationalism are reduced. All these factors promote a kalyptic society.

But if the immigrants come at a higher rate, and in particular if they make a homogeneous group, then there is a possibility that they form ghettos where they can maintain their original culture, language, and religion. This will unavoidably bring about a confrontation between two clearly defined groups: the natives and the foreigners. The two groups are easy to distinguish because they have each their culture, which barely get mixed. The confrontation can easily lead to conflict, which is group-external, and thus regaling. Both groups develop a strongly heightened interest in the distinctive characteristics of their own culture and an aversion against everything that typifies the culture of the enemy, as a reaction to this conflict. The natives develop a strong nationalism and the immigrants seek protection in their ghetto and seldom seek the company of the natives. This polarizes the conflict and further reduces the possibility of integrating the two cultures. All in all a regaling of both parties.

Whether the mixing of two populations lead to cultural integration or confrontation obviously also depends on how different the two cultures are and whether they are regal or kalyptic beforehand. If the two cultures both are relatively kalyptic and not too different, then the most likely result is an integration and maintained kalypticity. But if the two cultures are regal or if they are very different, then the result will be a further regularization and possibly a violent conflict.

Looking at the immigrant problems in contemporary Europe, it is easy to see that the most despised category of immigrants is the muslims. This is due to their high number, their relative homogeneity (in the eyes of the natives) as a group, and last, but not least, that their religion is so regal that they strictly hold on to their original life-style although it does not fit the society to which they have come. The conservatism that is characteristic of regal cultures makes the adjustment to the new living conditions slow and difficult. The fanatic observation of the religious commands seems absurd and pointless to a european, and they tend to have larger families than what is regarded as suitable in a kalyptic culture. The arranged marriages with young people from their country of origin contribute further to the maintenance of their original culture.

The conflict is defined as a racial conflict by the parties involved, but the cause of the conflict is not racial differences but cultural differences. Europe has lots of immigrants of all skin colors from every part of the world, and few of them ever give rise to serious problems. The problems, or absence of problems, have nothing to do with their skin colors. Immigrants from America, Africa, China, Greenland, etc. do not constitute a sufficiently numerous homogeneous group to create noticeable ghettos, and the cultures they come from are not so regal that they have been unable to adapt and integrate into the society they have come to. Curiously enough, the group of immigrants that deviates most in skin color, is actually one of the most popular immigrant groups in Europe, namely the blacks. Most of the blacks are descendants of slaves who have had no possibilities of preserving their original culture. Those cultural forms that europeans associate with the blacks are positively evaluated. The blacks are first and foremost famous for their music: jazz, reggae, hip-hop, etc. These are all kalyptic styles of music that the europeans love, just like the african dances. The blacks are also popular because of their talents in sport. In short, the blacks are mainly associated with kalyptic cultural values that make them popular, whereas the muslims are associated with religious fanaticism and a regal

culture that frightens the europeans and makes the muslim immigrants unpopular.

The situation in the USA is very different. There are too few muslims in America to make a cultural conflict, but instead there is an old conflict between blacks and whites which primarily has socioeconomic causes as a consequence of the slavery of the past.

5.12 Economic competition

Population size may be stagnant in the modern society, but something else is growing, and that is the economy. Military competition has been replaced by economic competition now where the modern world has begun to become more peaceful. Thousands of manufacturers compete for the favor of the consumers, and the mechanisms of the free market decide what is produced and consumed. Any consumer requirement or need is made use of in order to sell products, and even where there is no need, advertising is used to create artificial needs. In other words, all possible niches are explored in order to sell as much as possible. In principle, the consumers might be satisfied with only a few types of shoes, but today they have hundreds of different models to choose between. The different models of shoes do not differ very much in functionality, they are all almost equally suited for their purpose. The difference lies first and foremost in the designs, and the different designs appeal to customers with different life-styles. Advertising contributes heavily to the splitting of the market into niches by associating different product variants with different life-styles. The commodities thus become carriers of culture in the consumer- and growth- society. Consumer choice has become an important factor in the cultural selection process, and of course all niches, be they regal, kalyptic, or r/k-neutral, are utilized. Fashion- and life-style advertising reflects every new cultural trend in society almost before it arises, and the frequent changes in fashion stimulate a higher consumption.

Economic competition in modern society favors big corporations. Big business enterprises have the benefits of large-scale production and distribution and reduced competition. They also have the benefit of large scale advertising: by advertising in big national and international mass media and sponsoring big sports events etc., the big concerns can outcompete small firms who hardly have the economic means for advertising in local media. Whoever is big grows even bigger. This

means a concentration of economic power on fewer and fewer hands, and thereby also an increased political influence.

Economy in the western world has been dominated by growth for so long that the entire economic system - and even its theoretical basis - has been adapted to constant growth. Politicians and economic scientists alike regard a state of growth as normal and the stimulation of growth as the solution to all economic problems. Only now are a few beginning to realize that there is a limit to economic growth and that we are approaching this limit. The cessation of economic growth will create economic crisis if not a total collapse, and we will soon see the regaling effects of this crisis.

6. DEMOGRAPHY

The *genetic* r/K-theory defines an r-strategy as the strategy of an animal or human that spawns many young, but spends few resources on caring for its young. The definition of a K-strategy, on the other hand, is that the individual produces few offspring but invests many resources in caring for each descendant (see p. 87). These strategies are duplicated in the *cultural* r/k-theory. Humans in a regal society produce many children. These children are early set to work, and they marry and become independent at an early age. Not so in the kalyptic society where the birthrate is low and parents spend a lot of resources on the upbringing and education of their few children. The children go through a long education before they become able to support themselves and have children of their own.

It is difficult to determine how the regulation of population size works - when it works. The regulation mechanisms may be very complicated and difficult to investigate (Samuels 1982). The most important factor influencing the growth rate is, as already mentioned, the cultural r/k-level. The birthrate is high in a regal society, and raising a large family is often regarded as a duty. The regal society needs a high level of human reproduction in order to do well in war or to be able to expand and conquer new territory. In this situation, the population size is only checked by war, famine, and disease. The process is self-perpetuating because regality creates growth, growth causes war, and war leads to regality. In the kalyptic society, on the other hand, the population must be limited in order to avoid famine. This limitation of the population is achieved voluntarily by means of contraception, abortion, infanticide, emigration, and suicide.

Another important regulation mechanism is what sociologist Mary Douglas calls prestige. Douglas has studied what is important in the decision of each couple on the number of children they have. She found that the limited availability of food and other vital resources was not the controlling factor in the parents' wish to have children. The factors she found were important were luxury resources giving status and prestige. The parents want their children to have high status and prestige, and therefore they do not want to divide prestige-giving resources between a large number of children (Douglas, M 1982). In other words, it seems that many societies have developed social prestige systems which have the hidden function of controlling population growth. If the prestige

system breaks down then the regulation also breaks down. This is seen in cases of external cultural interference or if significant parts of the population are so impoverished that any form of prestige and status is unattainable to them. Nothing prevents people from breeding large families in this situation.

These observations make sense in relation to the genetic r/K-theory. A K-strategy will be advantageous if the parents have plenty of economic and cultural resources because these resources can be invested in the nurturing of the children and guarantee them a favorable social position and a safe future. Extremely poor parents, on the other hand, have few resources to invest in their children. Their only resource is the working capacity of these children. An r-strategy is therefore the best possibility for these people to reproduce their genes. The parents are probably not aware of this mechanism. Asking poor parents why they have so many children that they can hardly provide food for them, you usually get an emotional answer that they love children. I find it therefore reasonable to suggest that there is a vicarious psychological mechanism regulating the number of children a couple desires.

Anthropologist Alan Rogers has calculated the optimal reproductive strategy as a function of economic wealth with a simplified model where wealth is inherited. The model shows that under certain circumstances the optimal number of children is lower for rich parents than for poor. Rogers does not consider, however, that the pattern of inheritance of wealth has been stable long enough for humans to evolve an optimal strategy in this respect (Rogers, A.R. 1990).

Suicide

Suicide can be divided into four categories according to the influential social theory of Emile Durkheim:

- *Altruistic* suicide, where a person sacrifices his life for the society, e.g. in war.
- *Fatalistic* suicide, for example among prisoners and slaves.
- *Egoistic* suicide, where a person has nobody to show consideration for except himself.
- *Anomic* suicide, where a person cannot adapt to social changes.

The first two categories are found in societies with a high degree of social integration and regulation. The last two categories occur in

societies with little integration and regulation (Durkheim 1897, Lester 1989).

By a re-evaluation of existing statistics (Evans & Farberow 1988, Lester 1989) I have found that the suicide rate in general is higher in kalyptic countries than in regal. This observation fits Durkheim's theories of egoistic and anomic suicides because social integration is lowest in kalyptic societies. The individual has nobody but himself to consider in the kalyptic society and is a complete master over his own life. This liberty of action includes the possibility of ending one's own life if the quality of life is unsatisfactory. Not so in the regal society where the prevailing ideology says that the individual lives not for his own sake, but for the sake of the community and his family. Here the individual has no right to take his own life no matter how painful that life may be. This theory is in accordance with observations that suicide is relatively seldom seen in ethnocentric societies (Rosenblatt 1964), but is apparently contradicted by an investigation showing that the suicide rate increases in times of crisis (McCann & Stewin 1990). The latter investigation, however, does not distinguish between crises to the individual and crises to society, and there is no doubt that a crisis to the individual can lead to suicide.

Although suicide is most frequent in kalyptic societies, it also occurs in regal societies, especially in the category that Durkheim calls altruistic suicide. An individual may sacrifice himself for his group or the society in cases of conflict or war, as for example *kamikaze* pilots, martyrs in *jihad*, or terrorists making suicide bombs. Altruistic suicides may also occur in times of peace as a reaction to dishonor (e.g. *hara-kiri*).

7. DIGRESSION: SOCIAL ORGANIZATION AMONG BABOONS

Two markedly different patterns of social organization have been observed among baboons. The hamadryas baboon (*papio hamadryas*) living on the dry steppes of Africa is organized into groups comprising a single dominant male with a harem consisting of two or more females and their young. The most important social relations are between the harem leader and the adult females. The surplus of adult males, having no harem, live in all-male groups. The groups are joined into larger troops which often sleep together.

The closely related savanna baboons (*papio cynocephalus*) live in bigger groups and are rather promiscuous. The females have more influence than the males, and the most important social relations are female-female alliances (Byrne et.al. 1989).

Recent studies have shown that the chacma baboon (*papio cynocephalus ursinus*), which is a subspecies of the savanna baboon, will approach the social organization pattern of the hamadryas baboon under certain living conditions, although its normal pattern is the same as for the savanna baboon (Byrne et.al. 1987). One group has even been observed to change from the mating pattern of savanna baboons to the harem pattern in a few years as a result of the presence of a leopard (Anderson 1989). The change in organizational pattern took place in less than one generation, so it is impossible that genetic changes can have played any part. If we assume that this change in organizational pattern is adaptive, then it must have been controlled by vicarious social, psychological or intellectual mechanisms as a reaction to the changed ecological conditions, e.g. the risk of being eaten by a leopard.

The most probable reason why savanna baboons assemble into big troops is that it is the best defense against predators. The hamadryas baboons live on the dry steppe where food is sparse so the baboons have to forage in smaller groups. The chacma baboons live in the mountains where food becomes more and more scarce the higher up you go, and accordingly the social organization resemble the hamadryas pattern more and more the higher the altitude (Byrne et.al 1987, 1989; Wrangham 1987).

It may seem illogical, then, that a group of chacma baboons switched to a pattern resembling the organizational form of the hamadryas baboons owing to the presence of a leopard, as observed by Anderson (1989). The explanation may be that the monkeys have to stay together in larger troops during the summer in order to protect themselves against the predator. This makes foraging ineffective and the competition within the troop is sharpened. A female has no chances of feeding her young in this situation unless she allies herself with a strong male. This promotes the splitting of the social organization and mating pattern into harem groups, and the competition within the troop becomes a competition between harem groups.

The reproduction of the baboons is limited first and foremost by the scarcity of food on the dry steppe as well as on the savanna. Many young die from starvation or malnutrition, and the competition for food therefore plays a big role for the parents who have to feed their young. There is also a fierce competition between the males for access to mate with the females. These conflicts are regulated by a strict hierarchy of dominance and by the formation of alliances. The difference between the two organizational patterns with respect to competition is that with the hamadryas baboons there is competition between single-male harem groups, whereas the savanna baboons compete primarily within their troop because they are not divided into small groups. In other words, the hamadryas organization is dominated by *group-external* conflicts, whereas the savanna pattern is dominated by *group-internal* conflicts. This is the background for why I compare these two patterns with cultural r- and k-selection.

Wasser and Starling (1986) have found a considerable amount of competition between the females among the savanna baboons, which is seen in the females attempting to suppress each other's reproduction. Not surprisingly, there is also a high degree of rivalry between the males, and it is not unusual for males to kill young that are not their own in order to increase their own chances of reproducing. Females often mate with all available males during a single period of heat in order to avoid this. The males determine their paternity from the time of mating (Busse 1985), and the females create uncertainty about the paternity by mating with multiple males, thereby minimizing the possibility of the males killing their young.

Unlike this savanna pattern, there are seldom any conflicts between females among baboons living by the hamadryas pattern, and neither are any alliances between females seen (Byrne et.al. 1989). The dominant male decides everything and, due to the small size of the group, internal conflicts are rare. But when one hamadryas group comes near another then a tense situation arises. The dominant male spends a lot of energy on herding his females away from rival males from the other group (Byrne 1987).

In a hamadryas group there is a single male sitting on top of a strict hierarchy deciding everything and being able to suppress most conflicts within the group. Not so for the savanna baboons where decision processes are less simple and where females have at least as much say as the males. The similarity of these two patterns with regal and kalyptic human cultures, respectively, becomes particularly striking when we look at the sexual behavior. Mating is very rule-governed by the hamadryas baboon, and even though the male is polygamous he only mates with females belonging to his harem, and the females never mate with other males. Any uncertainty about paternity is therefore ruled out and the young can receive the full care and protection from their father.

Not so on the savanna, where there is almost complete promiscuity. The females seek 'deliberately' to create confusion about who is the father of their young in order to make all possible fathers sympathetic to their young.

Comparing with human societies, we similarly find a strict sexual moral in regal societies where adultery is severely punished, whereas there is considerably more freedom for promiscuity in kalyptic societies. Exclusive harems are only found in regal societies. A male may have mistresses in a kalyptic society, but he does not own them, and the females may at the same time have several lovers. The sexual behavior of humans in regal and kalyptic societies is the topic of chapter 10.

It must be emphasized that our knowledge about the social life of baboons is insufficient, and the above account is based on a limited number of studies. It is difficult to distinguish between cause and effect and there is considerable uncertainty about which factors determine group size and organizational pattern of the baboons. We have no empirical data that can throw light on the supposed social or psychological mechanisms leading to changes in organizational pattern.

The observations about conflicts and alliances are regarded as more reliable, so that there are reasonable grounds for asserting a connection between sexual behavior and the ratio between group-internal and group-external conflicts. This connection is indeed interesting since a similar connection is observable among humans, as I will explain in chapter 10.

Of course, the comparison between humans and baboons cannot be used for proving anything about the social or sexual lives of humans, but the study of baboons shows that a causal mechanism connecting social conflict patterns with sexual behavior is indeed biologically possible.

8. SOCIOLOGY OF DEVIANCE

Variation is a precondition for selection. If there is no variation in behavior then the cultural selection has nothing to choose between. Several scientists have found that variation is highest during periods of crisis where the population is experiencing stress. The variation in behavior is evidence of experimentation and inventiveness with the purpose of finding a solution to the problems that create the stress (Kirch 1980; Rosenberg, M. 1990; but contrast Russell & Russell 1982-1992).

If a variation in behavior goes against the established social norms or is regarded by the majority as wrong or undesirable then we may call it a *deviation*. Sociologist Jack Douglas (1977) thinks that a deviation can be a creative phenomenon necessary for social change and adaptation. He compares deviations with mutations and thus draws a parallel to Darwin's evolutionary theory.

Many sociologists have realized that there is a close connection between deviance and social control. Those in power exert control by defining unwanted behaviors as deviant and stigmatizing the persons associated with such behaviors (Lemert 1967, Foucault 1980).

In this chapter I will discuss theories about how norms are created, how deviations from the norm arise, and the importance of these processes for social evolution. I will focus mainly on such deviations which are claimed to be dangerous to society because these have a special importance to the cultural r/k-theory.

8.1 The fight over defining reality

In his later theories, sociologist Nachman Ben-Yehuda regards the phenomenon of deviancy as central to the explanation of social stability or change (Ben-Yehuda 1990). In a situation of deviancy, one person or group defines another person or group, or their actions, as deviant and dangerous to society. In Ben-Yehuda's terminology, any deviance is a social construct, and the concept of deviance is therefore always relative. A central concept in Ben-Yehuda's sociology is a *symbolic-moral universe*. Others call it a paradigm or a cognitive structure. A symbolic-moral universe is a theoretical tradition or a conception of reality that integrates symbols, meanings, values, motives and reasons

into a coherent system which legitimizes a certain moral order. The symbolic-moral universe delineates the moral limits and hence the criteria for what is deviant. A deviant person often has a different symbolic-moral universe which legitimizes his actions to himself. Hence the deviancy situation represents a conflict between two symbolic-moral universes. Such conflicts take place constantly in every society. The conflicts imply negotiations over moral limits and social identities, and the outcome of such conflicts may be that symbolic-moral universes are changed or replaced by other universes (See also Klaus Eder's theory on the selection of cognitive structures mentioned on p. 28).

Since a symbolic-moral universe legitimizes power, then the consequence of a change in this universe may be that the distribution of power and resources is changed. A deviantization may thus have far-reaching political consequences, even if it is not defined as political (Ben-Yehuda 1990). Ben-Yehuda's sociology of deviance can profitably be combined with the cultural r/k-theory because it provides a functionalistic explanation of the distribution of power and resources.

A deviantization may be directed from the center of a society against its periphery or vice versa (Ben-Yehuda 1990:59). In other words, this means that those in power and their subjects may reciprocally accuse each other of deviant and anti-social actions. If a man in power successfully accuses some of his subordinates of deviance, then the result is a reinforcement of his power and hence a regularization. The deviance demonstrates and legitimizes his power and gives occasion for corrective interference in the form of punishment or therapy. That this means of power can be effective is seen by the historical fact that the inquisition successfully upheld the threatened monopoly of power of the catholic church throughout five centuries by a systematic hunting of heretics and witches. The fact that in reality the witches did not have the dangerous capacities that were imputed on them did not make this regular means less effective as long as the imaginary danger legitimized the maintenance of a strong power structure.

If, on the other hand, the deviantizations and corrective actions towards critical deviants fail, then the position of those in power is weakened, in other words: a kalyptization occurs. The same is the case in situations where persons or groups with low social status successfully accuse those with high status and power of deviance. This is typically seen in the uncovering of corruption and the abuse of power.

If persons with an intermediate status successfully accuse somebody with the same status of deviance, then the result may be a redistribution of power and resources, but not necessarily a regularization or kalyptization.

The proclamation of deviants is a battlefield for the fight between those who define deviation and those who are deviantized, between oppressors and oppressed, and for the trial of strength between regularizing and kalypticizing forces. The result of this tug-of-war depends on the stability of the symbolic-moral universe that defines the deviance.

An oppressed group will often be inclined to revolt and possibly kalypticize society - but only if they can uncover the mechanisms of oppression. If the power succeeds in dressing up the symbolic-moral universe that legitimizes the oppression as a commonly accepted religion, ideology, or science, then the oppressed people will often react in quite the opposite fashion. A person who feels his freedom of action restricted, but who cannot find any scapegoat to blame for his frustrations, will be inclined to turn his frustrations inwards and blame himself. He will feel insecure and helpless and will therefore consciously or unconsciously seek a strong leader who can solve the problems that he himself has given up solving. In other words: he will develop an authoritarian personality. Such a person may, paradoxical as it may seem, be inclined to join the regular forces and hence support the very same powers that have led to his own oppression. A kalyptic revolt is only possible if the oppressed group together succeeds in understanding and penetrating the symbolic-moral universe that legitimizes their oppression and replaces it with a new one.

8.2 Defining reality in terms of science

Religion can no longer justify arbitrary suppression of deviance in the modern democratic society where freedom of religion is a generally accepted human right. But another symbolic-moral universe has replaced religion, namely science. What previously was labeled sin is now regarded as disease. This is called *medicalization* of the deviance. The deviantization has found its basis in the medical science which has become an anonymous ideology that only experts are allowed to criticize. These experts are the doctors and psychiatrists who find their *raison d'être* in the very same ideology in which they believe and will

always defend. The medical scientists are unwittingly exerting a suppression of deviants by assuming that the cause of the deviance is to be found in the individual rather than in the society - an assumption which in some cases is more justified than in others. This kind of social control finds its expression in psychiatric diagnoses, behavior therapy, and cognitive therapy (Erchak & Rosenfeld 1989; Foucault 1976, 1980).

Another teaching which legitimizes oppression in the modern society is the science of economy. Millions of poor, homeless and unemployed people are unable to do anything effective about their own unhappy situation because it is framed as economic 'laws of nature'. Karl Marx attempted, with some success, to object against this paradigm and replace it with another one: the Marxist economy. Unfortunately this new science or ideology turned out in the end to lead to just as much oppression and poverty as the traditional capitalist economy.

8.3 Myth making

Any discourse or story is subject to selection. A story may be believed or doubted, and it may be passed on or forgotten. Certain stories have a peculiar tendency to be believed, reshaped, and passed on because they appeal to strong feelings in the human psyche - they push our buttons. Such a story is said to take on a life of its own. In other words, certain stories have a high cultural fitness which is largely independent of the truth of their content.

A good example is the migratory legends which are commonly known by the somewhat misleading term urban legends. The spreading of these modern legends has been well researched. Some legends are passed on over several decades and spread far and wide. In many cases the same legend can be found in Europe and the USA, and it is usually impossible to trace its origin (Klintberg 1986, Brednich 1993). The psychological functions of those legends which tend to spread have been studied by several folklorists, social psychologists, and meme theorists (Dundes 1971, Mullen 1972, Klintberg 1986, Gross 1996). Many stories have a certain psychological attraction because they appeal to feelings of revenge or wishful thinking (Dundes 1971, Klintberg 1984). Other stories are expressions of fear and prejudices, as for example the many myths about rat meat, dog food, or other unappetizing ingredients being served in chinese or italian fast food restaurants (Klintberg 1983). Some urban legends tell about dangers to

children or other helpless victims, and thus appeal to our protective instincts, as for example the stories about wicked people at halloween who give children poisoned candy and apples with razor blades hidden inside (Best 1990). No matter how exaggerated or untrue, these stories are to a great extent believed and retold because they appeal to the protective instincts of the parents and the fear that disasters may happen when the children turn to strangers at halloween.

Many 'bogey stories' not only appeal to our fears, but also serve as negative identification models, i.e. as examples of how not to be. The most common themes of such atrocity tales are cruelty, murder, cannibalism, sexual perversion, and satanic worship, and often with women or children as the helpless victims. Occasionally, all these themes are combined in one and the same myth, as for example the recently invented myth that there are secret cults of satanists, who sexually abuse, kill, and eat babies in bizarre rituals. Despite its irrationality and lack of any physical evidence, this medieval legend in modern clothing has recently spread from the USA as far as to New Zealand and many european countries, and has had dramatic consequences for those accused as well as for the alleged victims (Nathan & Snedeker 1995, Best 1990, Jenkins 1992, Goodyear-Smith 1993, Hunter 1998).

Such psychological effects give migratory legends a high cultural fitness, i.e. a tendency to be believed, retold, and passed on. This psychological fitness is of course independent of whether the story is true or false, except in the rare cases where a convincing proof or disproof is possible.

The same applies to rumors, which can be divided into different categories according to their psychological functions (Rosnow & Fine 1976):

1. The pipe-dream, or wish fulfillment, rumors which express people's hopes.
2. The bogey rumors which mirror people's fears and anxieties.
3. The wedge-driving, or aggressive, rumors which express prejudices against other subgroups of the population.

Contemporary scholars often describe the psychological mechanisms that make people tell and believe certain stories rather than others,

although they do not make use of cultural selection theory, because this paradigm is currently out of fashion in the social sciences. But a few decades ago, when neo-evolutionism was still alive, a sociological study of rumor was published based explicitly on selection theory (Shibutani 1966)¹⁶. Shibutani found that rumors arise in a situation of cognitive crisis, or when the supply of factual information does not meet the demand. Various social actors propose their own interpretation of the situation according to their individual orientations and interests. A selection among the proposed ideas takes place in the spontaneous process of group communication until a standard version gains general acceptance. Ideas are selected according to their plausibility based on their compatibility with shared assumptions. An idea may gain wider acceptance if it provides relief from tension, if it justifies unacceptable emotions, or if it makes the world more intelligible and reduces cognitive dissonance.

If the unsatisfied demand for news and information is excessive, then the collective excitement is intensified into a situation where rumors are constructed and communicated through suggestibility and spontaneously formed informal channels. In such a situation of intense collective excitement people become more responsive to moods and behavioral contagion. Standards of judgment are temporarily transformed, and it becomes possible to seriously consider proposals that are alien to established beliefs and violate customary standards of credibility (Shibutani 1966).

As hinted above, not even scientists are unaffected by the fads produced by cultural selection. Neither are they immune to the psychological mechanisms which make people believe and retell certain stories. An excellent example is the myth of cannibalism. The belief that primitive peoples habitually eat one another for nutrition, leads to such a high degree of psychological excitation that this myth has been told and retold for centuries and until recently has been believed by even the most reputable scientists, despite the fact that no anthropologist or ethnographer ever has seen the alleged cannibalistic act. Most tales about cannibalism can be traced back to demonizing images that a people have created in order to bring disgrace upon their enemy, just

¹⁶. Facing the fact that evolutionary thinking was unpopular in the social sciences, Shibutani found it necessary in his book to explicitly defend himself against the expected criticism (Shibutani 1966:183).

like accusations of witchcraft, etc. These accusations have often been used for justifying war, slavery, and colonialism (Arens 1979)¹⁷.

The prohibition against cannibalism is one of the strongest taboos we know, and the very thought of eating somebody, as well as the thought of being eaten oneself, evokes extreme horror in every human being. The individual works through his fear of cannibalism by listening to and carrying on these stories. The imaginary cannibal is not only a bogey but also a perfect model for how not to behave - a prototype on barbarism and wickedness. Humans need such negative identification models, and therefore the myth is kept alive.

Horror stories about anti-social deviants may have a social function apart from being a means for working through personal fears. The most pronounced deviancies are those which are perceived as a threat against the established social order. A systematic collective fight against such deviancies is called a *moral panic* (S. Cohen 1972) or *witch-hunt* (Bergesen 1977, 1978).

8.4 Witch-hunts and moral panics

A witch-hunt may be defined as a systematic persecution of a group of people (real or imaginary) that are alleged to have capacities perilous to society. In most cases the 'witches' are members of the society which is persecuting them, i.e. internal enemies. There is often an extensive myth-making about the witches and their characteristics and activities. Typical of a witch-hunt is that the witches are often regarded as so dangerous that common principles of justice and rules of evidence are neglected for the sake of social safety. Less extreme cases of witch-hunts are called *moral panics*, which means a fierce and highly emotional collective reaction against certain perceived crimes or deviancies. The mass media often play a crucial role in the creation of a moral panic by stirring up the emotions, whereas a witch-hunt is usually controlled by political or religious leaders.

A society need not be plagued by dangerous criminals in order to start a witch-hunt or a moral panic. In most cases society *creates* the deviants. It is well known that a common enemy stimulates solidarity, and in the

¹⁷ . Arens' debunking of the cannibalism myth is still controversial, as many anthropologists are reluctant to change their old views.

absence of such an enemy society may create solidarity by constructing a deviancy. Scapegoats are used as targets for a collective aggression which creates social solidarity (Eibl-Eibesfeldt 1971). The situation may be planned, but in most cases it arises spontaneously. There are three ways in which a society can create deviants:

1. The extent and dangerousness of an existing problem of deviance is exaggerated, and the search for deviants is intensified.
2. New deviancies are created by moving the limits of normality.
3. The deviancy is completely imaginary.

The first category can be exemplified by the persecution of communists by senator McCarthy in USA in the 1950's (Schoeneman 1975). An example where a previously disregarded phenomenon is redefined as deviant and injurious, is the fight against masturbation in victorian times (Ussel 1970). The third category, totally imaginary deviancies, is best illustrated by the persecution of witches in Europe in the fifteenth and sixteenth centuries (Ben-Yehuda 1980).

Anthropological studies of witchcraft have primarily been concentrated on primitive cultures where accusations of black magic are frequent. Such accusations may have various functions. When a group needs to strengthen its internal solidarity, it may achieve this by accusing persons (often unidentified) outside the group of having harmed the group by means of magic. When persons within the group are accused of witchcraft, the function may be to control deviants, to reinforce or redefine moral limits, or the accusation may be an instrument in a fight between rival fractions or an attempt to redefine the hierarchy (Douglas, M. 1970).

It would be unwise to generalize from such isolated cases of witchcraft accusations to large organized witch-hunts as we have seen in larger societies. Isolated accusations are often expressions of everyday social conflicts or attempts to explain the misfortune of individual persons, whereas organized witch-hunts are frequently phenomena of long duration involving a large number of people, often an entire country (Schoeneman 1975). I will concentrate my study on the extensive or organized witch-hunts and moral panics because these have a special importance in the theory of cultural selection.

The greatest witch-hunt in history - the one that gave the phenomenon its name - took place in Europe in the late middle ages and early modern time. The power of the catholic church was threatened in the tenth and eleventh century by several new sects which did not accept the dogma and tyranny of the established church. The inquisition was created in order to defend the power of the church and root out the infidels. By the thirteenth century the heretics were effectively wiped out, but the power of the church was still threatened by considerable social upheavals that took place in this period. The church needed new scapegoats in order to explain the social crisis and legitimize its power. The soil was therefore fertile for the conception of a secret sect of witches who worshipped the Devil and caused all manner of evil. The persons who were accused of witchcraft were tortured until they confessed and they were forced to inform against other witches whereby the process could continue. The rituals that the witches allegedly participated in are described by Ben-Yehuda (1980) as an inverted mirror image of the rituals of the church. The witches function as negative identification models for the orthodox, as a prototype of how not to be. The witch trials threw the so-called true faith in sharp relief by demonizing its antithesis.

The witch-hunt may be seen as a negative reaction to the substantial social changes that took place in the period around the renaissance. The increases in urbanization, industry, trade and the resulting specialization and division of labor all enhanced the influence of the new middle class and created new economic and political structures that were independent of the control and guidance of the clergy. These changes threatened to weaken the power of the church and create a new image of the world which no longer was dominated by theology. The witch-hunts were an attempt to counteract these changes and re-establish the traditional authority of the church (Ben-Yehuda 1980).

Psychologist Thomas Schoeneman (1975) regards this reaction as a regressive innovation. His model is a further development of the sociology of Anthony Wallace. Social changes can take place either by a gradual adaptation (*moving equilibrium processes*) or by *revitalization*, which means a sudden change as the result of a conscious effort, according to this theory. The latter process happens as a reaction to a cultural crisis. The reaction to a cultural crisis can either go backwards, in an attempt to re-establish the previous order, or it may go in the direction of a more radical change in the worldview of the population

whereby a new order is created. Schoeneman explains the witch-hunt phenomenon as a conservative reaction to a cultural crisis and an attempt to re-establish the previously existing power structures. The witch-hunt is a self-perpetuating process. Psychological stress and cultural crisis are made worse by the witch-hunt at the same time as the process is struggling to maintain the very same structures that caused the crisis. A demonology is created which makes the witches responsible for the crisis, makes it possible to identify ever more witches, and force confessions which confirm the very same demonology.

Nobody dares to criticize the witch-hunt because doing so they would themselves be declared witches. Witch-hunts may be very prolonged due to these self-amplifying effects. Despite the fact that the witch-hunt amplifies the social crisis in the long run, it also has some immediate cultural and psychological advantages: It is a substantial and visible action in a time of uncertainty and fear. It allows people the possibility of believing that their misfortune is somebody else's fault and not their own. It provides an outlet for the anger, aggression, and feelings of guilt that have accumulated during the cultural crisis. The witch-hunt does not end until the accumulated nuisances it creates offset these immediate psychological advantages. What happens next is a radical change in the population's worldview, a paradigm change, which enables the construction of a new social structure (Schoeneman 1975).

Bergesen (1978) interprets political as well as religious witch-hunts as magic rituals. He sees the dichotomy between deviant and normal as parallel to the dichotomy between sacred and profane. He has noticed that those actions which are regarded as dangerous to society and give occasion for persecution of the culprit are of a rather trivial and everyday nature. The witch-hunt ideology makes the transcendent purpose immanent in everyday life by attributing a transcendent meaning to trivial everyday actions. The superior political or religious goal is made immanent in daily life by the ritual construction of its symbolic opposite based on everyday phenomena. Society may define and structure itself as a corporate actor in this way. Questions of guilt and justice are irrelevant in this context because the crimes of which the witches are accused are not of this world. Anybody can be accused of witchcraft and have little chance of defense. Bergesen mentions as examples of political witch-hunts the purges during the chinese cultural revolution, the terror regime during the french revolution, the stalinist show trials, and McCarthy's persecution of communists in the USA. In accordance

with this theory, Bergesen finds that witch-hunts are most common in one-party states where the ideology is most immanent in everyday life (Bergesen 1977, 1978).

The witch-hunt as a means of power is used in two different contexts: to maintain an existing ideology, or to create a new ideology. The renaissance witch trials and mc-carthyism are examples of the first category. When the ideological basis of society is falling apart and an old established social structure is threatened by the beginning of kalyptization, then the existing rulers may, for want of more effective means, attempt to preserve the status quo by uniting the population in a joint fight against an imaginary enemy. The lack of enemy gives rise to kalyptization, and the imaginary enemy is constructed so as to counteract this process and preserve the regal power structure.

On the other hand, witch-hunts are also used for spreading a new ideology. This typically happens during and after a revolution where the old ideology is being replaced by a new one, and where the success of the revolution depends on the willingness of the population to convert to the new ideology in the shortest possible time.

8.5 The role of the mass media

The news media often play an important role in the creation of moral panics. In a pioneering study of this phenomenon, Stanley Cohen has described an example from Britain where the press played a crucial role in the creation of a moral panic over a group of young people, the so-called *mods* (modernists) and *rockers*. In this case the press had not only created the moral panic, but had also played a major role in the construction of the categories *mods* and *rockers* with which the young people gradually began to identify. The newspapers created a sensation by deliberately exaggerating the violent behavior of the young people and by giving them a common identity. The result of this wave of moral panic was mass-arrests and a considerable abuse of power by the authorities. At the same time, public opinion was mobilized into demanding more powers to the police, more control, and more severe punishments (Cohen, S. 1972). This is the typical reaction to a moral panic wave and the reason why it has such a strong regaling effect.

The motivation behind the exaggerations of the newspapers is presumably economic rather than political. Economic competition between the

news media has probably been an important selective force in this process (see chapter 9). The main motive may have been economic, but the effect was highly political: more control and more use of power against the young people, in other words, a regularization. It would be wrong to claim, however, that the cause of the moral panic was only economic. A moral panic is not only created by the news media but also by the readers. There can be no moral panic unless there is a strong emotional reaction in the readers. This emotional reaction could not possibly have appeared unless there was already a widespread fear of juvenile delinquency and a desire for more strict control of young people. There is therefore reason to assume that the newspapers had capitalized on a pre-existing fear of juvenile delinquency in the population.

Other social actors who may have an interest in creating moral panics are the police, political leaders, political and religious interest groups, and 'demonologists' who claim to have expertise in the detection and control of the deviance.

8.6 The objects of witch-hunts

Who or what a witch-hunt or moral panic attacks may seem rather random, but not all kinds of deviancies are suitable objects for a moral panic.

Obviously it has to be something that pushes the most sensitive psychological buttons and evokes feelings of horror in the public, such as supernatural dangers, crime, dangers to children, sexual deviations, disease epidemics, or poisoned food. The moral panic is often fueled by an existing psychological conflict or cognitive dissonance that threatens the moral status quo.

The target of a moral panic is preferably an *easy enemy* whom it is uncontroversial to condemn, and who has few resources with which to defend himself. Suspected criminals in custody, for example, have hardly any possibility of defending themselves against accusations in the news media, no matter how exaggerated these accusations may be. The deviant phenomenon is defined in ever broader and more undifferentiated terms, whereby the moral panic is constantly able to find new points of attack, should a previous tactic fail.

The witch-hunt or moral panic is supported by extensive myth making. Often 'experts' arise who scare the population with an elaborate demonology and demand more resources for the fighting of the evil (including more money for themselves). The myths cannot live very long, however, if they are easy to disprove. The most persistent myths therefore often concern invisible phenomena or phenomena that most of the population have no possibility of observing, such as food poisoning or organized crime. Religion obviously provides a rich breeding ground for moral panics because all religions involve conceptions of invisible phenomena and because these conceptions are hard to disprove.

But with the increasing secularization of modern times, the witch-hunts have found new targets, such as political deviations, drug abuse, organized crime, and sexual behavior. Sexual crimes, especially, have gained increasing importance in recent moral panics because sexual behavior is an area that is largely hidden from the public and because it is connected with strong irrational feelings and taboos. The fear of satanism is nevertheless still alive, even in the modern industrial society (Bromley 1991, see also p. 208), as is the belief that sex-criminals have a connection with the Devil, just as it was in the middle ages (see p. 147, and note 18 p. 185).

Furthermore, the psychoanalytic theory of repression has made possible the belief that children may have been subjected to horrific torments committed by satanists and sex criminals, even though they do not have the slightest memory of such events. The demonologists then claim that the repressed memories of these atrocities can be recovered by special hypnotic or suggestive therapeutic techniques (Lotto 1994, Loftus & Ketcham 1994). Such a moral panic is particularly powerful because it pushes several of the most sensitive psychological buttons: sex, danger, religion, and protection of children.

9. MASS MEDIA

The mass media have an important role in modern democratic society as the main channel of communication. The population relies on the news media as the main source of information and the basis on which they form their opinions and voting decisions. According to cultural selection theory, any selection of messages in the mass media will thus have a profound effect on the entire society. This chapter investigates the selective forces that govern the mass media in a free and unregulated market, and explains how these selection mechanisms may lead to regularization and the concentration of economic power.

Competition has become increasingly keen in the area of the mass media as they keep fighting for the attention of the readers, listeners, and TV-viewers. The life and death of each newspaper and TV station is at stake here when the income from advertising and sponsoring is proportional to the number of readers or viewers. The printed media have problems competing with the electronic media as sources of news. In order to survive, they are increasingly turning to other strategies such as entertainment, titillation, scandal mongering, and spreading fear - and spending fewer resources on serious researching of news. This is not only about the survival of the fittest of the news media, it is also about cultural selection and political selection. The news media are the most important channels for the propagation of culture, ideas, and opinions. Most opinion formation takes place when people sit and watch news and debates on television. Analyzing the cultural selection in the electronic information society, we find that an important part of the selection lies in the choice between TV channels. Millions of lazy viewers sit in their comfortable arm-chairs with remote controls in their hands zapping between action films, revivalist preachers, and commercials for a new fragrance, hardly realizing that by choosing which cultural and political influences they expose themselves to, they also chose the cultural and political evolution of their country.

It is very important to analyze which selection criteria are in effect here. The electronic media are first and foremost pacifying. It is a relaxation machine, and the viewer wants to be entertained. The faces on the screen are not chosen for their opinions but for their entertainment value. TV stations do not compete on ideologies but on sense impressions. An extreme example is music videos, satiated with fast changing sense impressions in sound as well as in pictures.

Media scientists have often discussed how much influence the media have on people's opinions. People tend to selectively read what they already agree with and to rationalize their preformed opinions in the face of contrary arguments. Experimental evidence seems to indicate that the mass media have little power to change people's opinions on issues for which they already have formed a strong opinion, but they have a profound influence when it comes to setting the agenda and priming people on new issues. The way an issue is framed determines how it is discussed, which causes a social problem is blamed on, and which of the possible remedies are entered into the discussion (Sasson 1995, Beckett 1994, Pan & Kosicki 1993, Wanta & Hu 1993, Iyengar 1991, Nelson 1984, Howitt 1982, Weimann & Winn 1994).

The production of news often goes through several steps: informants and sources, press agents, reporters, news agencies, journalists, and editors. Many media are citing other media or opinion leaders so that the complete chain of information flow becomes quite long. Selection and distortion may take place at every link in this chain of information transmission (Ericson et al. 1987, Howitt 1982). In the following I will discuss the main selective forces that shape the production of news.

Sources

The sources of news may be public institutions, politicians, private companies, police, courts, interviewees, etc. These all have an interest in providing information that portray themselves in a positive light and withhold compromising information. There is a trade going on between source and journalist. For example, the media rely heavily on the police for news about crimes and often report positively about the police in exchange for this information. Sources that are unsatisfied with the way they are portrayed in a certain newspaper or TV channel may retaliate by withholding information in the future (Ericson et al. 1989, Chermak 1995, Chibnall 1977, Crandon 1992).

Journalists and editors

Obviously, journalists may have political opinions that shape their selection and framing of news. They also have ethical principles about fairness and about reporting everything that is relevant, although they may depart from these principles when competition is fierce (Chermak 1995, Gans 1980). Their selection of news is mostly based on the

concept of *newsworthiness*, i.e. what they believe the audience finds interesting (Gans 1980, Ericson et al. 1987).

Audience

News media depend very much on their audience for economic reasons. They have to publish whatever makes people buy their newspapers, listen to their radio programs, or tune in to their TV shows and stay tuned through the commercial breaks. This is what newsworthiness really is about: catching the attention of the audience by presenting something spectacular, unusual, emotionally touching, and something that people can identify with. The concept of psychological buttons (see p. 44 and 70) is really in place here. Topics like danger, food and sex make people pay attention. Keeping informed about dangers in the environment was of vital importance to our ancestors in primeval society, which is the reason why we have a surveillance instinct that make us hunger for news about possible dangers (Shoemaker 1996). News about deviance, crime, and disaster are particularly salient (Gans 1980; Graber, D. 1980; Chermak 1995). In fact, Ericson and coworkers found that stories about deviance and control constitute more than half of the news (Ericson et al. 1991). The media have often been criticized for publishing too much bad news, but the fact is that the audience actually pay more attention to stories about crime and disaster than to good news.

The bad news are not always very relevant. Horrific stories about some bizarre and morbid crime that has happened in a far away place may be more button pushing than reports about well known and trivial dangers like traffic accidents or unhealthy eating habits. The average TV viewer may pay more attention to the story about a bizarre crime although (s)he is extremely unlikely to be affected by a similar crime, at the same time ignoring warnings about the immensely higher risks of traffic accidents or unhealthy life style (Pritchard & Hughes 1997, Singer & Endreny 1993, Ericson et al. 1991).

Another pervasive psychological factor in the preferences of the audience is personal identification. A story is much more touching if presented in terms of personalities than if presented as abstract principles. A political conflict is perceived as much more interesting if it is framed as a personal battle between politicians than if framed as a clash between ideologies (Chibnall 1977, Sennett 1974), and a crime

story is more touching if vulnerable victims voice their anger and grief (Chermak 1995).

Owners

The owners and shareholders of news media may have political opinions that shape their decisions, but with increasing professionalism they often prefer their media to be politically neutral in order to cover as large an audience as possible (Gaunt 1990). The present trend of concentration of business ownership means that many media owners also own other enterprises unrelated to news production. They may prevent their media from being too critical towards other firms that they own or towards business in general (Weis & Burke 1986).

The demand for economic efficiency and short time schedules means that journalists often have to print the messages from their sources with little or no editing. The thoroughgoing investigative journalism takes place more in myth than in reality (Ericson et al. 1987).

Advertisers

Newspapers get more than half of their revenues from advertisers, and most radio and TV stations get all their revenues from advertising and sponsoring (Weis & Burke 1986). Obviously, the advertisers have a strong influence on news contents. Such an influence is usually considered unethical, but is nevertheless difficult to avoid. In order to attract advertisers, the media often generate a *"buying mood"* by discussing topics of relevance to the advertised products and avoiding any criticism of commercial products or of consumerism in general (McManus 1995, Bagdikian 1983, Cirino 1973).

The influence of advertisers may be even more direct, although clandestine. Occasionally, advertisers have imposed economic sanctions against newspapers that have criticized their products (Weis & Burke 1986, Bagdikian 1983). Discussions of the health hazards of smoking are almost absent from magazines that carry tobacco advertisements, although less important health hazards are covered extensively (Warner et al. 1992, Weis & Burke 1986). The owners of tobacco factories can influence even magazines that do not allow tobacco advertisements because the same investors also own other companies that advertise in these magazines (Weis & Burke 1986).

Advertisers and sponsors are afraid of controversial programs unless this is exactly their niche. It is easy to observe that the more competition there is between the news media, the more entertaining and less serious becomes the news programs and political debates (Ericson et al. 1991, Gaunt 1990).

Economic selection

Economic selection can override other factors like ideology because economic selection can kill the news-producing company. Imagine a town where there are two newspapers, *A* and *B*. *A* is a quality newspaper where ethical principles of fairness and relevance are held in high regard, while *B* is a popular newspaper indulging in sensationalism, titillating sex scandals, and slander. Journalists prefer to work for *A* because it endorses the principles that they consider the hallmark of their trade. Many consumers, however, buy *B* because its sensational front-pages catch their attention. The advertisers, too, place more money in *B* than in *A* because *B* extols their products while *A* often criticizes poor products and unfair business methods. Soon *A* gets economic problems that forces it to reduce its journalistic staff, reduce the number of pages, and raise the price of the paper. The lowered quality of *A* now makes more readers turn to *B*. The vicious circle keeps turning and the economy of *A* keeps spiraling down until its total demise.

This example is not pure fiction. It can be observed everywhere. This proves that the overall economic selection can override selection processes that take place at a lower level and force the news producers to compromise their ethical principles. A study of the selection of news in major American TV stations and newsmagazines in the 1970'es concludes that economic factors had little influence on the journalists in their selection of stories. This was in a period where the media enjoyed the benefit of a rapid economic growth (Gans 1980). Apparently, the good economy permitted the media the luxury of setting idealistic principles higher than economic considerations. Gans supports his claim about the independence of journalists by citing the example of the *Saturday Evening Post*: even when this magazine was going under, the editors remained free from business-department intervention (Gans 1980). Unfamiliar with selection theory, Gans has overlooked the possibility that this newsmagazine may have gone under exactly because economic considerations were ignored. Anyway, the amount of sensationalism, scandals and titillation in the media is steadily increasing (Gans 1980, Soothill & Walby 1991).

The present trend is a *homogenization* of the news media: different media rely increasingly on the same sources, they may have the same owners, the same advertisers, and share the same market. The result is that the different news outlets often tell the same stories and in the same way, only blended with different kinds of entertainment. They avoid controversy and complicated background information and rely increasingly on the button pushing effect of sensationalism and personalizing (Gaunt 1990, McManus 1995, Soothill & Walby 1991, Chermak 1995).

Consequences for the quality of news

A further consequence of the abovementioned homogenization of news is that it becomes more and more difficult for the audience to evaluate whether news stories are true or distorted, and whether important information has been left out. Truth and relevance are not strong factors in the news selection process (McManus 1995). Journalists work under a tight time schedule and have little time to verify their stories. Therefore, obviously, they sometimes make errors. These errors are seldom corrected because retractions and disclaimers are unfit. The media tend to stick to the interpretive frame originally assigned to a story, even in the face of strong contrary evidence (Ericson et al. 1989). Misquoted sources and others who may be dissatisfied with inaccurate media stories have only very ineffective means for influencing the media to correct their stories (Ericson et al. 1989, Soothill & Walby 1991).

Political consequences

Politicians are very dependent on the news media because people mainly base their voting decisions on the presentation of politicians in the media. The media appeal of a politician may be more important than his/her political skills, and consequently we are seeing more and more media people and actors going into politics. The politicians have to adapt their messages to the media. The political debate becomes superficial and toothless. Political candidates resort to short slogans and entertainment and avoid controversial subjects and complicated issues. Favorite issues are the most button-pushing ones like crime and sex, and indeed these issues are among the most salient topics on the agenda of election campaigns (Sasson 1995, Soothill & Walby 1991). The need for personalization has often caused the private lives of politicians to figure more prominently on the public agenda than debates over complicated social issues.

The news media focus very much on deviance and, as explained in chapter 8, discussions of deviance is the arena where rules and moral boundaries are negotiated. Stories of crime and deviance therefore have a very important effect on social and political change, and we have to look at the selection mechanisms governing stories of deviance in order to understand the effect they have on social change (Chermak 1995, Ericson et al. 1987, Chibnall 1977).

As explained above, the news media focus very much on the unusual and bizarre, and on button pushing stories. Trivial crimes like shoplifting or speedy driving are not newsworthy and therefore seldom mentioned, even by the local media. But the rare, bizarre and spectacular crimes are given massive, lengthy, and often worldwide coverage. The amount of crime reported in the newsmedia is hardly related to actual crime rates. In areas where the crime rate is low, the media tend to report on less serious crimes or crimes that have taken place far away. In addition, the media may write about some unsolved crime that has happened long ago, or about people's fear of crimes that might happen in the future (Chermak 1995, Beckett 1994).

For example, the grotesque crimes committed by Jack the Ripper in London in 1888 are still remembered and talked about today, more than a hundred years later, while countless more simple crimes committed in the meantime have been totally forgotten. In fact, the story of Jack the Ripper has had a significant effect in shaping public conception of sex criminals (Walkowitz 1982, Soothill & Walby 1991). The result of this powerful selection of discourses is that the population gets a distorted conception of crime and dangers. Many women are afraid of sex monsters like Jack the Ripper lurking in the dark, although they are much more likely to be victimized by someone in their own circle of acquaintances.

In countries like USA, where economic competition between news media is fierce and there is little government regulation, the sensationalist focus on button pushing crimes in the news media have created a public sentiment that many commentators have characterized as *obsession with crime* (Sasson 1995, Adler 1983). Often the focus on particular types of crime has taken the shape of moral panic. In this case politicians are forced to show their commitment to the cause and "*do something*". Some politicians are emotionally affected by the moral

panic and honestly want to combat the perceived evil. Others may realize that the situation is just a moral panic, but they are forced to react anyway. When an eager journalist asks a politician what he is going to do about some (perceived) menace, there is no way he can stand up and say: *"This is not a serious problem. There is no need to do more about it than we already do"*. He has no other option than to find some laws that can be stricened, well knowing that it is wrong to make hasty legislation in a highly emotional climate. The press has more power than the politicians in this situation (Ericson et al. 1989).

The *framing* of crime stories in the media is just as important as the selection. Personal stories are more touching than abstract principles. Crime stories are therefore framed as individual personal stories rather than thematized as general social problems (Ericson et al. 1991, Soothill & Walby 1991, Chibnall 1977). This framing affects the way people think about crimes and their causes. The main cause of crime is perceived to be moral defects in the individual and - in the case of reoffending - an ineffective penal system. Social and structural causes of crime are seldom discussed because they do not fit into this frame and because such discussions are less newsworthy and button pushing. This consequence of personalized framing is very important because it controls how crime-fighting resources are allocated (Sasson 1995, Brownstein 1991, Iyengar 1991). In USA, people's attitudes towards crime have become more punitive despite an increased liberalism in other matters, and this change of attitude cannot be adequately accounted for by increased crime rates or increased fear of crime (Stinchcombe et al. 1980). Budgets for law enforcement and prisons have grown exponentially since world war II and the incarceration rate has risen to extreme levels (Sasson 1995). The crime rate has hardly been affected by this dramatic increase in crime-fighting efforts because the structural causes of crime have largely been ignored. In many cases, the money spent on law enforcement and prisons have been taken from social programs targeted at the social causes of crime (Herman 1991, Brownstein 1991). In conclusion, the selection and framing of crime news has caused an ever increasing allocation of resources to ineffective and perhaps even harmful measures and away from measures that target the criminogenic environment. Criminologists have often criticized this prioritizing, but their messages are not favored by the powerful selection mechanisms that control mass media.

Personalization

The fact that the political debate has become entertainment has had the consequence that attention is concentrated on the personality of the politician rather than his message. These tendencies are characteristic of the kind of society that sociologist Richard Sennett calls *the intimate society* (Sennett 1974). Humans have become isolated from one another due to urbanization and division of labor in modern society, and consequently they have created an illusion of fellowship by attributing to other people the same feelings as they have themselves in order to satisfy the frustrated need for intimacy. People do not talk to one another on the street, but nevertheless they feel that they have something in common. This feeling of a group identity or a collective personality is created by a common fantasy, not by common actions.

Society has become so impersonal, complex, and difficult to grasp, that it appears meaningless unless you interpret it as personal. People thereby become more interested in the personality of the politician than in his policy. The politician takes advantage of this situation and diverts attention away from controversial matters by exposing his private life and make people interested in his wife or his dog. Exposing the private personality of the politicians has become a hidden agenda in political life. Politicians began to compare their public performance with that of actors as early as the mid nineteenth century. The politician becomes a credible leader by simulating spontaneity and human feelings, but also self-control. People will rather be moved by a charismatic leader than take a stance for or against his policy, just like they go to a theater to be moved by the actors (Way & Masters 1996, Sennett 1974).

Sennett does not think that this situation is created by the electronic media, because the tendency to make public life personal began before these instruments were invented. They are just tools invented for covering a psychological need to retract from public life and feel more like a person (Sennett 1974). I do, nevertheless, believe that the sharpened competition between the mass media has contributed significantly to the transformation of political debate into a superficial play. Symptomatic of this situation is that politicians in their election campaigns sometimes concentrate on disclosing scandalous details about the private lives of their opponents, while the ideological messages are reduced to short clichés so general that nobody can disagree with them. Democratic election thereby becomes a competition

about who can present the most exemplary private life, and the politicians have to put a conservative family policy on their program.

An obvious example is the USA. During the economic depression around 1980, the population felt a need for a confidence inspiring leader who could solve the complicated social problems that people could not themselves comprehend. It was no accident that it was a former actor and movie hero, Ronald Reagan, who was elected for US president at that time (McCann 1991). The outcome of the election is determined more by acting talent than by political talent in such a situation.

Regalization

The fact that crime and disaster are favorite topics of the media has the effect that people overestimate the dangers in their environment. They come to perceive the world as more dangerous and evil than it really is and demand ever stricter measures to fight the deviance (Brownstein 1991, Gerbner et al. 1980). This has a clear regализing effect. The enemy may be internal to the society, but the perceived danger is a danger to society as a whole rather than to the individual, and therefore has a regализing effect.

The regализing effect of the media's "*obsession with crime*" is not evenly distributed on all r/k indicators. In the period where competition between news media in the USA has been most fierce, i.e. after the second world war, tolerance for crime has decreased while tolerance in other matters have increased (Stinchcombe et.al. 1980). Peace and improved economy has a kalyptic effect that counterbalances the regal effect of the mass media so that the net effect is near zero. Old scapegoats have disappeared and new scapegoats have been constructed.

The competition between newsmedia has a considerable effect as part of the cultural selection process, but it would be an exaggeration to regard this as an autonomous process able to push social evolution in any arbitrary direction. The producers, as well as the audience, have personal preferences which are highly influenced by the general social situation, and these personal preferences find expression in the selection of news. Jorgenson (1975) has shown that TV programs become more authoritarian in contents in times of economic crisis, which is in accordance with the psychological theories mentioned on page 96.

9.1 Advertising and sponsoring

Where I live, the highly advertised soft drinks cost three times as much as similar unadvertised drinks. Nevertheless, most consumers drink the expensive advertised brands. The extra money goes into advertising. Obviously, advertising has a strong effect when it can make consumers prefer the most expensive product.

Modern advertising relies more on psychology and button pushing than on providing factual information about price and quality. Many advertisements contain no information other than merely repeating a product name and associating it with attention-catching images and the portrayal of an attractive lifestyle. It thereby attempts to influence the audience to make less rational consumer choices than they otherwise would.

Advertising not only influences the consumers, but also the mass media. The media are not as autonomous as they purport to be, because most of their revenues come from advertisers, as mentioned above. Even state subsidized and license based news media are becoming increasingly dependent on advertisements and sponsoring. Advertisement-free state-subsidized TV stations are indirectly being influenced by sponsoring because the events they are reporting from are financed by sponsoring. In modern society today, almost all major cultural events depend on sponsor money. In big sports events, for example, the sponsors usually have the final say in every detail of the planning and staging of the event. Likewise, many films and other entertainment programs are influenced by sponsors having their products placed in the context of the film or show in exchange for their financial contribution.

It is therefore important to analyze which selection criteria are at work in the sponsoring of news media and cultural events. The answer is straightforward: maximizing the exposure of the sponsor's name in the media in a positive context. This, of course, means attracting the greatest possible audience. TV programs contain more and more entertainment and button pushing films, and still fewer debates over complicated or controversial issues. The boundaries between news, entertainment, and advertising become increasingly blurred (Ericson et al. 1991).

The political effects of advertising are mainly indirect. Commercial advertisers have no political agenda. They are very sensitive to political consumer choices and therefore reluctant to take any political stance. At

most they might have a pseudo-agenda, i.e. a non-controversial political message that nobody can disagree with, such as environment protection, peace, or charity. This is to make people believe that they are idealistic do-gooders.

As explained on page 134, advertising benefits big companies more than small ones. This means that big companies grow still bigger whereby economic power is being concentrated on only a few hands. With the economic power also follows political power through the sponsoring of election campaigns and professional lobbyists.

9.2 The competition for attention

Organizations, firms, politicians, and advocacy groups of all kinds are constantly engaged in a fierce battle to win the attention of the population. Mass media lure with sensations and scandals to make people buy their stories. Politicians expose their private lives and engage in humorous media stunts to win the public's attention and confidence. Advertisers use emotional and arousing images for capturing the consumers' attention and make them remember the name of their product (Lang 1990). Advocacy groups use demonstrations and dramatic actions to make their cause interesting for the media to write about and thereby communicating their message to the public. Charity organizations use button-pushing images of starving children for soliciting donations. Religious groups campaign for winning new proselytes. Government and official organizations campaign to inform the public about certain important topics. Terrorists even go as far as to commit the most shocking crimes just to make the news media write about them and their political cause, and the journalists obey (Weimann & Winn 1994).

Several sociologists have studied how different topics compete for the attention of the mass media in what has been called *the social problems marketplace* (Best 1990) or the *public attention market* (McManus 1995). The abilities of different campaigners to dramatize their cause has crucial importance for their success in getting access to the mass media and the public's attention. Who take the lead in this competition? Obviously the ones that are able to dramatize their cause in the most newsworthy and button-pushing way, rather than the ones that have the most important message to tell. Charity organizations, for example, may

need to use more money for campaigning than for their charitable cause in order to survive in this darwinistic competition (Brodie 1996).

The conclusion is that it is not always the most important topics that win in the competition for the attention of the media and the population.

10. SEXUAL BEHAVIOR

All societies have moral rules regulating sexual behavior. These rules are very different from society to society, and although the *de facto* enforced rules are not always in agreement with the written rules, they are usually sufficiently specific to be studied and compared with reasonable accuracy. Comparison of the sexual morals of various societies reveals a distinct connection between the morals and the social structure. Goethals (1978) finds that the strongest sanctions against premarital sex are found in complex patriarchal societies. More generally speaking, it can be said that regal societies have strict sexual morals, whereas kalyptic societies are more liberal. This connection is quite analogous to what applies to other areas of morality, but still puzzling because there is no obvious rational or functionalistic explanation for the sexual morals.

Traditional explanations

The most traditional reason given for the sexual morals is that they shall prevent unwanted children. This explanation is contradicted by two factors: Firstly, strict sexual morals always include a prohibition against contraception and abortion - the two most effective means against unwanted childbirth. And secondly, strict sexual morals are found in the very same societies that encourage and require a large production of children. We must conclude, therefore, that strict sexual morals lead to a higher birthrate in society as a whole - not smaller.

Another traditional explanation of the sexual morals is that they shall prevent the spread of venereal diseases. But this argument is also contradicted by the prohibition against condoms and other means that may prevent the spread of venereal diseases. It is true that the tightening of sexual morals in modern times found some of its reasons in the syphilis epidemics, but it was also the fight against syphilis that gave rise to better sex education and hence a liberalization of the morals at the beginning of the twentieth century (Burnham 1973).

The claim that epidemics of sexually transmitted diseases is a major cause of strict sexual morals can best be disproved by looking at the AIDS epidemic. When this disease was first identified, it was regarded as closely related to male homosexuality. Not surprisingly, AIDS was used as an argument for the oppression of homosexuals, but notably by

persons who already had this opinion beforehand. People who already had a liberal attitude to homosexuality used the opposite argument: that a greater acceptance of homosexuality was necessary in order to fight the epidemic. An extensive campaign was organized to promote the use of condoms. The target group of this campaign was primarily promiscuous homosexuals, and in order to appeal to this target group the campaign unavoidably came to indirectly communicate the message that such a lifestyle was acceptable. The overall effect of the AIDS epidemic has been a greater acceptance of homosexuality and promiscuity in countries like Denmark and Germany that already had liberal attitudes to such lifestyles (Schmidt 1989).

A ban on promiscuity may function to establish certainty about paternity for the sake of economic inheritance (Goethals 1978), but many of the prohibitions in the sexual morals cannot be explained with reference to family planning, infectious diseases, or other rational considerations. Most notably, such forms of sexuality which do not lead to procreation, i.e. pornography, prostitution, masturbation, homosexuality, anal intercourse, and sexual intercourse with animals, are often among the most prohibited.

Many historians have studied the ban on homosexuality. One of the most thorough studies (Boswell 1980) disproves the widespread belief that this ban has its origin in the bible. On the contrary, the church was quite tolerant of this condition in the early middle ages, and homosexuality was widespread among the clergy. The arguments against it were primarily found in secular philosophy, and it took a long time for the church to accept this ban and give it a religious reason. Even in the late middle ages, when the fight against heresy was at its peak, the prohibition was often given pagan reasons. The arguments were often illogical and paradoxical. The argument that homosexuality was bestial because certain animals were (erroneously) believed to be homosexual, and the argument that homosexuality was unnatural because animals did *not* practice it, could be found in one and the same text. The rules must have been selected by some other criteria than their logic.

Boswell is sufficiently acute to see the limitations of his theory. It may be tempting for a historian to explain the prohibition by saying that this or that influential theologian regarded homosexuality as unnatural, but Boswell demonstrated that there were at least as many distinguished persons who expressed the opposite stance (1980:163). Boswell

cannot, with the theoretical methods he has to his disposition, explain why one opinion was advanced and not the other. Neither can he explain why homosexuals were punished more severely than prostitutes, when the new testament condemns prostitution much more strongly than homosexuality. He can only demonstrate that the dictates of the bible have been applied very selectively.

There has been a gradual tightening of sexual morals from the beginning of the medieval period, and this has continued - with a few lapses - right up to victorian times. The persecution of sexual deviants has gone hand in hand with the persecution of jews, heretics, witches, and other deviants. One did not always distinguish between the different kinds of deviation, and it was sometimes quite arbitrary whether a deviant was accused of heresy, witchcraft, sodomy, or all three (Bullough 1974).

The idea that there is a close connection between political suppression and sexual suppression can be ascribed first and foremost to Wilhelm Reich, who invented the term *sexual politics*. His main thesis was that sexual suppression, and particularly the sex-negative education of children, leads to authoritarianism, conservatism and fear of freedom (Reich 1933). The theories of Reich were sometimes politically biased and far-fetched, but his observations of the connection between sexual repression and political and religious power structures are of continuing interest.

The history of sexuality

The ideals of religious liberty, freedom of speech, and democracy were fostered in the age of enlightenment, and were important factors in the french revolution. People would no longer accept the obvious dominance of churches and kings. These ideals of freedom have since been a strong weapon against the most important regal means. As these ideals gained wider and wider acceptance, the regal forces, now having their wings clipped, had a growing need for new regalizing devices which were less transparent and thus more immune to ideological warfare.

Sexual liberty has not yet been fully integrated into the ideologies of human rights and freedom of speech, and sexual oppression is therefore more immune to ideological criticism than other, more obvious, regal means. The selective forces have therefore favored tight sexual

morals, rather than other more simple regal devices. The social consequences of sexual morals are quite difficult to penetrate, and therefore also difficult to criticize. This selection process has taken place possibly without any contemporary human fully understanding why.

Nuclear family and private life were constructed during the eighteenth century, and formed the basis for the glorification of marital happiness and true love in romanticism and victorianism (Ariès 1960). Procreation was tied to marriage and family life by physical as well as spiritual control. Generally, women were kept ignorant about reproduction and their sexual drive was conceived as morbid and dangerous. A woman's true nature was believed to be love for her children and fidelity to her husband. Sex and reproduction was not a right but a duty to the husband, the state, and God. It was possible to set children to work very early and this provided an economic incentive for producing many children. The high production of children was a precondition for the europeans being able to colonize half the globe (Heinsohn et.al. 1979).

The concept of sexuality

The concept of 'sexuality' in its modern meaning was constructed in the second half of the nineteenth century. Previously, there had been words for sexual intercourse and for love, but not for what we today call sexuality (Ussel 1975). Sexuality was discussed, systematized, controlled, and made an object of scientific study and discourse. Sexuality was fitted into a rhetoric of human nature, dressed up as objective science, which made it difficult to criticize the repressive sexual norms (Foucault 1976).

It has been argued that the modern concept of sexuality is delimited in an arbitrary way for which it is difficult to give a theoretical reason (Ussel 1975). Humans have many pleasurable feelings and impulses in connection with everyday activities and friendships between people. These feelings are traditionally defined as non-sexual, despite the fact that they have very much in common with sexuality. This demarcation of sexuality is necessary in order to maintain the perception of sexuality as something transcendent - as a special sphere raised above daily life - and which has to be regulated by special rules and rituals. In order to uphold this artificial demarcation, it is necessary to put restrictions on pleasurable everyday experiences so that they do not resemble sexual acts or feelings too much: Sport-friends may hug one another, but not kiss. A mother can enjoy breast-feeding her baby, but if she gets a

clitoral erection as a result then she becomes shameful and has to keep silent about it.

Eventually, the boundaries of sexuality have become riddled by various branches of science: Psychologists have demonstrated that the sexual instincts haunt in many situations which have nothing to do with procreation (Freud 1905). Sociologists maintain that the concept of sexuality is an arbitrary construct (Foucault 1976, Ussell 1975). And ethologists have shown that romantic love has an evolutionary origin in parental love, and that sexual behavior has other functions besides procreation (Eibl-Eibesfeldt 1971). As a consequence of this, I am using the word sexuality in the broadest possible meaning in this book. It is a problem that we cannot draw a sharp line between sexual impulses and other pleasurable impulses, if such delimitation has any meaning at all. Sexuality may be difficult to define, but we cannot do without a word for it as long as it is subjected to an extensive social regulation which we want to study.

Sexual morals as controlling means

Since many moral taboos are seemingly aimless and irrational, these morals provide a very suitable example for the study of how social norms can develop through cultural selection almost independently of rational planning.

If sexual morals had their purported purpose, namely to reduce the number of births, then any kind of sexual activity which does not lead to pregnancy would be a welcome alternative which could provide an outlet for the importunate sexual drives. But since the moral restrictions are most frequently directed against exactly these forms of sexuality, then it is evident that the function of these sexual morals is to compel the population to produce more children, not fewer. The prohibition against unproductive or premarital sex forces people to marry early and raise many children in order to get satisfaction for their sexual drives.

The influence of sexuality on the social structure is not as obvious and transparent as the effect of religious or political government. I therefore find it necessary to explain the social functions of sexuality in more detail in the following paragraphs.

10.1 Psychological mechanisms

In chapter 7 (p. 139) I described a mechanism in baboons which makes them change their sexual and social behavior when external ecological conditions change. Promiscuity disappears under conditions where external group competition dominates over competition within the group. Sexual behavior becomes controlled by a fixed harem structure, and the males get a clearly dominant position over the females. I suggested that this reaction could be interpreted as a vicarious selection mechanism. If it is possible for such a mechanism to exist in baboons, then it is also possible in humans. We have already seen that group-external conflicts, and other factors which threaten the security of the society as a group, lead to authoritarianism (see p. 96). It is possible that the same or a similar mechanism also makes humans order their sexual life into fixed patterns when their group is threatened, in almost the same way as do the baboons. Thus, under regal conditions, people will make the social structure more hierarchic and patriarchal, make sexual morals as well as other norms stricter, and increase the production of children. These are all strategies that make the group more fit for regal selection. The theory of vicarious psychological selection mechanisms is thus a likely explanation why regalization leads to more strict sexual morals.

Vicarious selection mechanisms result in a much faster reaction to altered external conditions than do natural or cultural selection based on trial and error. An example of a fast change in the sexual morals was the legalization of pornography in Denmark in 1969. The change in political attitude behind this liberation took place in approximately ten years, and it has been demonstrated that this change was neither based on new scientific knowledge about the effects of pornography nor on a re-evaluation of the right of the state to meddle with people's private lives, but purely and simply on a changed moral attitude towards pornography (Kutchinsky 1987). In USA the official attitude to pornography has changed from tolerance to condemnation almost equally as fast (compare e.g. Lockhart 1970 with Meese 1986). This tightening of morals was connected to a strongly increasing fear of sexual crimes and sexual violence, a fear which was reflected in the political as well as in the professional and scientific discourse.

Self-perpetuating mechanisms

Vicarious selection is not the only possible explanation for fast changes in norms and attitudes. Another possibility is positive feed-back

mechanisms. There are several possibilities for such mechanisms, some of which I will discuss here.

In a society where sexual life is restricted by many taboos, people will be likely to internalize these taboos and hence come into conflict with themselves because they have an unconscious desire to do what is forbidden. The psyche will react to such intrapsychic conflicts with defense mechanisms such as reaction formation and projection. The reaction formation finds its expression in an obsessional over-conformity, and the projection is seen in the phenomenon where the person attempts to fight his own repressed impulses by attacking other persons to whom the same impulses can be ascribed. A person who is plagued by forbidden desires will be the first to condemn others who can be accused of having similar desires. The paradoxical consequence of these psychological mechanisms is that the person who has the greatest problems complying with a taboo will be the first to uphold and bolster the very taboo that caused his frustrations. It is a prevalent opinion among psychologists that this mechanism is at work in people who show a fear of homosexuality (Adams, et.al. 1996, Herek 1984; Shields & Harriman 1984), and I find reason to believe that similar mechanisms are responsible in connection with other sexual taboos. A conscious conflict inspires rebellion, whereas a repressed conflict leads to over-conformity.

The more the legal possibilities of sexual activity are limited, the more will the illegal activities abound. Not only 'soft' crimes of a purely moral nature, but also violent sex-crimes committed by desperate people who cannot control their intrapsychic conflicts. The people who are being stigmatized because of their sexual sins will gradually develop secondary non-sexual deviations as reaction to the social oppression. Secondary deviations may include violent or anti-social behavior, alcoholism and social isolation (Lemert 1967, Fog 1992). And to make matters worse, the psychological trauma in victims of sex crimes are the more severe if their moral values are strict. The sexual crimes as well as the secondary deviations which accompany them lead to a social call for more control of sex criminals and stricter sexual morals. If, on the other hand, the moral restraints are loosened, then the vicious circle will be reversed and the number of sex crimes will go down. In Denmark the number of serious sex crimes fell dramatically when pornography became available (Kutchinsky 1985).

10.2 Selection of discourses

Most people have a penchant for discussing or hearing about sex because it is a powerful psychological button. The discourse may in itself have a pornographic value, the person may hope that more knowledge can make him happier, or the discourse may be motivated by a need for working through intrapsychic conflicts and frustrations. Different societies have very different limits for which discourses are possible. In a sex-repressive society it is impossible to speak about sex in neutral phrases, let alone a glorification of the pleasures of sex. The only possibility of talking about sex is a discourse that warns and condemns. For a person who wants to talk or hear about sex, this discourse is better than nothing. The sex-negative discourse is therefore, paradoxically enough, primarily led by people who would rather have led a positive discourse, whereas those who honestly want strict morals prefer the tactics of silence. There is a strong selection of discourses going on here. The loquacious person will find and exploit any exception from the prohibition against speech. Professional literature will be written full of admonitions, warnings, and bans (Foucault 1976). Novels will be written with a daring storyline, but where the morals triumph in the end and where the hardened sinners die while the innocently seduced repent and get saved. Such literature flourished at the beginning of the twentieth century. In many cases it is likely that the author wanted to communicate a positive message, but included the negative admonitions to avoid censorship and punishment. This is particularly evident in novels and plays about sexual deviations such as homosexuality. The best known examples are Radclyffe Hall's *The Well of Loneliness* and Thomas Mann's *Death in Venice*.

This kind of double standards is also obvious in newspapers, even in contemporary liberal society. Sex stimulates the readers and sells newspapers, but pornography and celebration of the pleasures of sex is considered substandard in the newspapers, whereas crime reports are considered serious subjects. Journalists who are well aware that sex *sells*, are therefore often indulging with unrestrained inquisitiveness in juicy sex scandals and sex crimes and do not abstain from grotesque exaggerations in order to titillate the readers. They therefore unintentionally communicate a negative and condemning discourse about sex, although the poorly disguised purpose was purely pornographic button pushing. Another example of selection of discourses was the eugenics

movement in Europe in the inter-war period, which was used as an excuse for discussing sexuality and contraception (Jones, G. 1980:110).

10.3 Social scripts

The sexual behavior of humans is charged with social meaning. Only a tiny fraction of the sexually motivated actions are directly aimed towards procreation. Physiological models are therefore inadequate for explaining human sexual life. Sexual actions can best be interpreted as rituals with social as well as psychological meanings. In order to describe the relation between actions and meanings, I will use the concepts of Simon and Gagnon, which are based on social cognition theory. The reader is referred to Simon & Gagnon (1984) for a more detailed description.

Since social behavior is mainly learned, it may be described as imitation. The personal motives must be integrated with available social meanings in order to make action possible. Simon and Gagnon illustrate this complex process as *scripting*. The word *script* is used as a metaphor for the cognition and production of social action. The playing of a social role directly or indirectly reflects the contents of a cultural scenario which the actor has learned. The social script does not only describe roles and actions, but also the motives and feelings that the actors are assumed to have. If a person's motives or feelings are not in accordance with the socially expected, then you may talk about incongruence between the cultural script and the intrapsychic script (Simon & Gagnon 1984).

In principle, there is no fundamental difference between sexual acts and other acts, except for the fact that a special social meaning is attached to sexuality. The cultural meaning of sexual acts is internalized in people to such a degree that any incongruence between inner impulses and cultural meanings give rise to serious intrapsychic conflicts evoking defense mechanisms such as repression, reaction formation, sublimation, etc. The consequence of this is that the cultural script is a powerful tool for controlling people's behavior. Few people have sufficient imagination and originality to carry out and justify an act which is not written in any cultural script, which they have no knowledge of anybody else doing, and for which they do not already know any motive or meaning. If it is possible to hush up an act, to erase it from any cultural script, to wipe out any reference to it from the vocabulary of the

population, then it is actually possible to prevent that act from being carried out.

In Scandinavia in the seventeenth and eighteenth century, the authorities had actually succeeded in silencing the phenomenon of homosexuality into virtual non-existence. The danish historian von Rosen (1988, 1993) has demonstrated that in that period the authorities preferred not to prosecute persons who had committed 'unnatural vices' because they regarded it as more important to keep silent about the phenomenon and avoid inspiring others to do the same than to convict the sinners. Apparently, the population did not even have an adequate vocabulary for discussing such phenomena. But in central Europe the information interfaces were so large that the strategy of silence was impossible, and the authorities had to fight sodomy by declaring it unnatural and sinful and burning the guilty at the stake.

Social scripts are particularly powerful as controlling means in the area of sexual behavior. The best example is the definition of the very concept of sexuality in the christian culture. During the middle ages, the understanding of sexuality was gradually narrowed into the conception that the sole function of sexual acts was reproduction, and that any sexual act which did not serve this purpose was unnatural. Even though this idea originates in pagan philosophy, it was gradually accepted by the church, which has since been the principal advocate of the view that sexuality is the same as reproduction (see p. 170; Boswell 1980). Today this way of thinking is so deeply rooted in the western culture that even atheist sexologists are inclined to define sexuality by referring to the act of procreation.

10.4 Taboo and sacredness

Human sexual behavior is often regulated by taboos. Several scientists have observed that the tabooed area, which is regarded as unclean and dangerous, can be characterized as *sacred* in the sense that it has a special transcendental meaning. It has connection with an invisible world with invisible magical forces that are powerful and dangerous (see p. 152) (Douglas, M 1966; Freud 1913; Bergesen 1978). Interestingly, this sacredness has survived the secularization in our society. Even atheists uphold the sexual taboos, although they have difficulties giving a rational reason for them. The taboos are no longer defined as sacred, but the sexual life is still not felt as a part of our everyday profane life. It belongs

to another world, and when we move into the world of sexual life we almost feel a change in identity:

"The separation of an erotic identity from an everyday identity is reflected in the highly disjunctive experience that commonly occurs upon the entry into explicitly sexual acts" (Simon & Gagnon 1984).

The many taboos associated with sexuality have the function that they preserve the immanence of sacredness in sexual life and thereby maintain the disjunction between sexual life and everyday profane life. It also serves to uphold the strong distinction between love and sex that our moral culture relies on.

According to Freud, the basis for any taboo lies in a prohibited act to which there is a strong unconscious affinity. It is characteristic for taboos that they are extended to include not only the prohibited object or act, but also any symbolic representation thereof. This is because a symbolic representation of the prohibited act implies a temptation to commit the prohibited act (Freud 1913). As far as sexuality is concerned, this means that any word or picture that represents something sexual must be tabooed in order to uphold the sacredness of sexuality. This is the cause of the widespread prohibition against pornography.

The ban on pornography has often been characterized as magic thinking: You try to fight the irregular sexuality by controlling its symbolic representation. This may be compared with primitive peoples trying to fight an enemy by attacking a dummy or an image representing the enemy (Jarvie 1987). This fighting the symbolic representation rather than the real phenomenon is not as dysfunctional as it first may seem. Our sexual behavior is determined by our conception of what sexuality is, of its cultural meaning - in other words: its social script. And this cultural meaning or script may be communicated through exactly these symbols which society is attacking. The individual sexual act is normally hidden from society and can therefore not be subjected to surveillance and physical control. But the communication of sexual symbols is public and can be controlled. Physical control will only expose and curb a small fraction of the unwanted sexual acts, but by controlling the symbolic communication of sexual meanings you can control the behavior of all people who acknowledge the current symbolic moral universe or scripts.

Anthropologist Mary Douglas (1966) uses the word *unclean* for everything that disturbs the existing order. Things that are placed where they do not belong, or things that lie on the limit between two categories, are often regarded as unclean, powerful, dangerous, or taboo. In the medieval age, hermaphrodites were stigmatized because they were on the limit between man and woman and thus violated the order of nature. In other cultures, like the native american, such people were believed to have magic powers for which they were valued. In Europe around the seventeenth century, sexual intercourse between humans and animals were punished by burning human as well as animal because they had both been defiled. Such a sexual act was regarded as highly dangerous because it threatened to destroy the important boundary between human and animal. Homosexual acts were likewise punished severely because they threatened the order of nature and the distinction between man and woman. Sexual acts between adults and children, on the other hand, were not regarded as a serious problem because the boundary between child and adult had little importance and because, from an early age, children enjoyed the same status as adults. Today it is the other way round. Homosexuality and transvestism have been de-tabooed thanks to the equality of the sexes, and hermaphrodites no longer exist as a socially constructed category. Sexual intercourse between humans and animals is still highly tabooed, but seldom gives rise to public attention or social sanctions. Sex between adults and children is today the strongest of all sexual taboos and offenders are punished severely. This is due to the fact that the distinction between the categories of adult and child is important in our society, and that there is a wish to maintain the image of the child as an innocent, ignorant, asexual and vulnerable being demanding protection (see p. 182).

The sexuality debate has focused mainly on three taboos which are much debated: women's sexuality, children's sexuality, and male homosexuality. The war between sex reform movements on one side and moralist and conservative religious forces on the other is mainly a controversy over these three taboos and their symbolic representations in the form of pornography. This is currently an important battlefield between kalyptic and regal forces in the western society. It is far from obvious why these three areas are important for the cultural r/k-scale. The answers follow in the next paragraphs.

Female sexuality

Women's ability to feel sexual desire and achieve orgasm is not a universal character. There are societies where women apparently do not masturbate, do not feel any particular pleasure by sexual activity, and where female orgasm is an unknown phenomenon that does not even have a name. Female sexual desire is a quality that can be fostered or suppressed during upbringing. Nothing prevents different cultures from evolving differently in this respect since female desire is not necessary for a fertilization to take place (Mead 1949).

In a regal and patriarchal society, the sexual activity is based on duty rather than desire. The victorian ideology which makes sexual intercourse a marital duty for the woman also gives the man total sexual power over the woman. But if sexual desire is ascribed to the woman then she will also gain control over her own sexuality because the man cannot force the woman to feel desire. A woman may deny her husband sexual intercourse, or refuse to marry a man chosen by her parents, with the simple reason that she has no desire to do so. The connection of sexuality with pleasure also means that the motives for marrying are changed from the rational and convenient to the emotional. Parents can no longer decide whom their children shall marry and the age of marriage rises.

Female sexual desire is therefore threatening to the regal society. The seductive woman is portrayed as dangerous to the man. A woman who openly shows her desire is stigmatized as a nymphomaniac or a whore. Not so with the male's sexual desire which is considered normal because he is the one to control and decide in the sexual sphere as well as in all other areas. These double standards appear most obviously in the area of prostitution: The prostitute is stigmatized, but not her customer. Prostitution is the only non-procreative sexual activity that is allowed to take place in a puritan society. It is regarded as sinful, but is nevertheless tolerated as a necessary evil because male sexuality is regarded as an irrepressible drive that must have an outlet. If for some reason the man cannot get satisfaction for this drive from his wife then he must resort to a prostitute.

It would be unfair to claim that this double standard is something that the men have forced upon the women. Both men and women were interested in making women passionless in victorian time, but for very different reasons. According to Nancy Cott, the men had an interest in

making the women desireless, not only to increase their control over the women, but to a large extent also to improve their own self-control. On the other hand, the women wanted to desexualize their relationship with the men in order to limit the sexual activities to that which was necessary for procreation, and hence limit the sexual dominance of the males. Even reformist women used the passionlessness of women in their fight for the right of women to limit the number of children they would get (Cott 1978).

The sexual ignorance and innocence in which the women were wrapped relieved them of conscious conflicts. The conflicts between inner impulses and outer taboos were repressed into the unconscious since the women had internalized the idea of their own asexuality. But the men, having preserved their desire, had to cultivate their self-control and responsibility in order to protect the vulnerable women. This self-control pervaded all areas of social life, not only the sexual. In other words, the conflict between instinct and morals was conscious in the men, but repressed to the unconscious in the innocent women. The men had to compensate for the lack of sexual satisfaction through their work, while the women, being confined to the protective environment of home life, sublimated through religion - the only channel through which sexual emotions could find expression freely and without shame (Cominos 1972). Victorian culture had thereby created a society of hard working men and pious and dutiful women.

But victorian women were not quite as frigid as contemporary literature seemed to indicate. Historian Carl Degler has demonstrated that this literature was prescriptive rather than descriptive. The victorian conception of female sexuality was not left unchallenged, and Degler has found proofs in a medical archive that many american women in this era had a desire for sex and the ability to achieve orgasm (Degler 1974). The moral literature was often self-contradictory and ambivalent. Sex was both natural and unnatural. The biggest paradox was that an incredible amount of energy was spent on fighting what allegedly did not exist: the sexuality of women and children (Rosenberg, C.E. 1973).

Children's sexuality

The education of children has a central importance for the cultural reproduction of sexual behavior because the moral norms and the social scripts are inculcated and internalized and the sexual feelings developed in childhood. The frigid woman, for example, can only be created

through a childhood education that is hostile to sexuality and to the body. No cultural influence in adulthood can achieve the same effect. I have already mentioned that a sex-negative upbringing can create political and religious authoritarianism, obedience, and self-control (see p. 171). I will here supplement this theory with some historical, anthropological, and psychological observations.

The controversial neuropsychologist James Prescott has compared the body stimulation of children in 49 primitive cultures and compared these data with the general level of violence and aggression in these societies. Prescott finds a significant correlation between sensory deprivation (i.e. lack of body contact) and a high level of aggression and violence. He concludes from these data combined with neurophysiological considerations that physical stimulation of children (caressing and play) is necessary for creating a peaceful society. Furthermore, Prescott has found that these factors are connected with several other behavioral factors as is presented in table 3 (Prescott 1975).

It is obvious that most of the behavior patterns listed in table 3 have importance for the cultural r/k-theory. The first list contains kalyptic traits, whereas the two lower lists mainly represent behaviors which are characteristic of regal cultures. Prescott's statistical analysis cannot be used for distinguishing between cause and effect. Whether it is neglectful upbringing of children that leads to a violent society or it is a violent society that leads to the neglect cannot be determined on the basis of these statistics. We can only ascertain that there is a connection. It is likely that the causal influence goes both ways in a self-perpetuating process. The interesting thing about Prescott's findings is that they reveal a strong correlation between the bodily nurturing of children and a long list of other regal and kalyptic indicators. The connection between the upbringing of children and violence in society is confirmed by another cross-cultural investigation (Ross 1985). According to this investigation, the level of violence is determined by psychological predispositions acquired in childhood, whereas the ratio between internal and external conflicts in a society is determined by the social structure (Ross 1985).

The highest degree of neglect towards children has probably taken place in victorian time. In this period well-to-do parents had nannies to take care of their children, or the children were sent to boarding schools (Ariès 1960). Maternal love was apparently an unknown phenomenon.

Adult behaviors in societies where physical affection is lavished on infants:

- Individual display of wealth is low
- Incidence of theft low
- Overall infant indulgence high
- Infant physical pain low
- Negligible killing, torturing or mutilating the enemy
- Low religious activity

Adult behaviors in societies where pain is inflicted on infants by parent or nurturing person:

- Slavery is present
- Polygyny practiced
- Women's status inferior
- Low infant physical affection
- Low overall infant indulgence
- Developing nurturant behavior in child is low
- Supernaturals (gods) are aggressive

Adult behaviors in societies where premarital sex is strongly punished:

- Community size is larger
- Slavery is present
- Societal complexity is high
- Personal crime is high
- Class stratification is high
- High incidence of theft
- Small extended family
- Extramarital sex is punished
- Wives are purchased
- Castration anxiety is high
- Longer post-partum sex taboo
- Bellicosity is extreme
- Killing, torturing and mutilating the enemy is high
- Sex disability is high
- Narcissism is high
- Exhibitionistic dancing is emphasized
- High god in human morality

Table 3. Behavior factors that correlate with physical nurturing of children and attitudes to premarital sex.
(After Prescott 1975)

Babies were not nursed by their own mothers, but breast-fed by wet nurses or bottle-fed (Badinter 1980).

The suppression of children's sexuality culminated in the eighteenth and nineteenth century. Children's masturbation had hitherto been a quite common and disregarded phenomenon, but now it became the object of a heavy moral panic. Numerous diseases and other evils were imputed to masturbation, and all kind of measures were implemented to fight this hidden vice (Ussel 1970, Barker-Benfield 1972). The interesting thing is that it simply was not possible to control masturbation. Rather, the campaign forced the sexuality of children into hiding so that there was something to discover and punish (Foucault 1976).

The impossible prohibition against masturbation has the same function as the christian prohibition against coveting (see p. 122): It plants a perpetual sense of guilt in the sinner. Such a prohibition can only be upheld as long as the sin is hidden. When it was revealed that almost all children masturbated, then people realized that the ban was absurd.

The tabooing of children's sexuality gives rise to many psychological conflicts, not only in children, but also in adults. The construction of children as asexual and ignorant about sex is so deeply ingrained in our culture that the word '*adult*' has become a euphemism for pornography. As a contrast to this stands Freud's generally accepted theory of children's sexuality. There is a severe cognitive dissonance here. Parents must fight hard to deny that the loving feelings they have for their children are very similar to sexual feelings. These feelings are so much against the incest taboo that they must be repressed at any price and the distinction between love and sex must be preserved. This intrapsychic conflict leads to reaction formation and projection which, as mentioned on page 175, reinforces the taboo. Since the late 1970's this conflict has fueled a widespread moral panic over child pornography and sexual abuse of children in the english speaking countries and in Europe¹⁸ - a conflict which is quite analogous to the previous fight against children's masturbation.

¹⁸. This moral panic is seen in grotesque exaggerations of the extent of so-called sexual abuse of children, and ever-wider definitions of this concept, and in some cases even a belief that secret satanist cults are behind this abuse. False accusations of sexual abuse has become such a big problem that organizations for the support of parents unjustly accused of incest have been formed in several countries. A considerable number of books and a scientific periodical have been dedicated to this problem alone (Issues in

The moral panic over sexual abuse of children has been amplified by newsmedia selection. Stories of sex crimes against children have extremely high selective fitness because they push three of our most sensitive buttons at the same time: the sex button, the danger button, and the protection of children button.

This moral panic may also be interpreted as a reaction against the general loosening of sexual morals and family values. There is one more selective factor at work here, namely that people with regal tendencies have been unable to find alternative targets for attack. Authoritarian personalities may have problems finding an outlet for their regalization tendencies in a time where the sacred ideals of democracy and human rights prevent almost any persecution of scapegoats. In this light the tabooing of children's sexuality may be seen as the regal moral's last stand.

Male homosexuality

Strongly sex-segregated societies very often have rituals with a symbolic or manifest homosexual content. The function of these rituals is to reinforce social bonds and cooperation between persons of the same sex: between working fellows, between leaders and subjects, between instructor and apprentice, etc¹⁹. The sexual element or sexual symbolism in such rituals may be difficult to see in a modern homophobic society, whereas it is obvious in many primitive societies (Herd 1984). Whether these rituals involve genital contact or not is unimportant for their social function since this function has nothing to do with producing children. Likewise, it is unimportant whether the society in question defines these rituals as sexual or not (according to their definition of sexuality).

Child Abuse Accusations; Eberle and Eberle 1986; Wakefield and Underwager 1988; Best 1990; Jenkins 1992; Lanning 1992; Goodyear-Smith 1993; Nathan & Snedeker 1995, Hunter 1998).

¹⁹. See Tiger (1969). This phenomenon was described by Hans Blüher as early as 1920, but later this general form of homosexuality has largely disappeared from all social scripts, partly because western society is no longer organized around sex to the same extent as previously, and partly because homosexuality today is constructed as a special identity reserved for a little minority of deviants.

The tabooing of this general form of male homosexuality leads to a displacement or sublimation where central authorities like the king, God, Jesus, or heroes enter as objects for the repressed homosexuality. This mechanism strengthens the loyalty of the men towards distant, central authorities (always male), and this loyalty is a necessary precondition for a regal society.

This mechanism is unconscious, and can therefore hardly be the result of conscious planning at the hand of powerful leaders. A possible mechanism is that those cultures or subcultures where homophobia is most widespread have an advantage under regal selection, or that homophobic men have a relatively higher inclination for showing loyalty to the regal social system and consequently have better chances of being promoted to influential positions in such a social system.

The bodily homosexuality can be seen as a ritual which reinforces the near alliances at the expense of the emotional bonds to distant authorities. The more centralized a society is governed, the greater the distance between leaders and subjects, and the more the bodily homosexuality must be repressed in favor of the sublimated one. It is obvious that this mechanism both presupposes and reinforces a patriarchal social system, where leaders at all levels are male. For the same reason it is first and foremost male homosexuality which is tabooed, whereas female homosexuality hardly receives any attention.

Incest

The reader has undoubtedly expected a mentioning of the incest taboo in this discussion of sexual taboos. Let me first make it clear that I define incest as heterosexual intercourse between blood-related persons, such as brother and sister. In the recent years, a widespread moral panic over incest has led to an expansion of the meaning of this word, which is inappropriate in scientific contexts (Bixler 1983).

The taboo against incest is fundamentally different from the other taboos mentioned here because it has a significant genetic component that makes it universal. It has been demonstrated that adult people have an instinctive aversion against sexual intercourse with persons with whom they have had close contact during childhood (Westermarck 1891, Shepherd 1971, Brown 1991). This so-called Westermarck effect is considered the genetic component of the incest taboo, the function of which is to prevent inbreeding. Even though the incest taboo evidently

also has a strong cultural component, it must be regarded as so constant and universal that it has little interest in cultural selection theory.

11. ART

11.1 The function of art

Why do humans love art? Why do we waste so much time and energy making pictures, drama, song, dance, etc. for each other? Is that all useless diversion or does the art have a function? However useless it may seem, we must admit that it is present in all known societies no matter how much people have to economize otherwise with their time and energy. A big question requires an answer here: is the strong propensity in humans for producing and enjoying art just a random whim, or has it arisen by some kind of natural selection? (Dissanayake 1984, Coe 1992). If art is only an unproductive waste of time and energy, then why has it not been weeded out by the merciless axe of natural selection? If we want an answer to these questions then we have to examine whether art has a function and if so what this function might be.

Many philosophers have given art an aesthetic justification: We produce art because it is beautiful or because it represents creativity and inspiration. Art is regarded as good and valuable in itself without requiring any further justification. This philosophy of art for its own sake, *l'art pour l'art*, may have a rhetorical value as a defense for artistic freedom, but it is meaningless as an ethological explanation because it does not explain our taste for art. An aesthetic justification can only be a proximate, not an ultimate, explanation for the art.

A little digression is needed here to explain the difference between proximate and ultimate causes. If you ask a child why it is playing you get the answer: because it is fun. If you ask an ethologist why children play, you get the answer that play is a learning process. The child's own reason is subjectively true. He or she may not necessarily be aware that playing is a learning process. But the child feels that playing is pleasurable and this pleasure is expressed by the word 'fun'. The feeling that playing is fun is of course adaptive because the child learns important skills during the play. It is therefore obvious that this feeling of a desire to play is likely to have arisen by natural selection. This is the ultimate cause of play. The proximate cause is that playing is fun²⁰.

²⁰. This difference between proximate and ultimate causes may also be viewed as a difference between vicarious and original selection (see p 74). The choice of pleasurable rather than painful behaviors is vicarious for the selective forces which originally led to the evolution of these feelings of pleasure and pain.

In general, you may say that human instincts function by means of pleasure and pain²¹. We feel pleasure by doing things that are in agreement with our instincts, such as eating, whereas we feel pain or fear by those acts which are against our instincts, as for example approaching a dangerous snake. (I will return to this discussion on p. 241). In the light of this theory, it seems natural to hypothesize that the human affection for art may have a genetic basis. The ultimate cause of art must therefore be sought in a theory of how such a genetic propensity may have arisen and what kind of adaptive function the art may have or have had.

It is a widespread opinion among scientists that pictorial art and dance among primeval man was an important form of communication which was used mainly to instruct and rehearse hunting techniques (Hewes 1973, 1974, Schenk 1982, Sachs 1933). Spoken language is phylogenetically quite young. Other means of communication must have been necessary before the ability to talk came into being. Gesticulation must be older than spoken language, and it is very likely that dance has its origin herein (Hanna 1979a). This theory is supported by the fact that dance in primitive hunting tribes often contains a mimicry of hunted animal species (Hewes 1973). Dance is not unique to humans. It is also found in certain animals, such as birds and bees, where it is evident that the function of the dance is communication (Hanna 1979a). Music is probably also older than spoken language (Livingstone 1973).

It is obvious to look for similar forms of communication in related animals like the apes, and we soon find that many primate species are able to communicate by means of movements, although these movements seldom are particularly rhythmical (Morris 1967, Hanna 1979a). I find it quite interesting to mention a form of communication used by groups of hamadryas baboons before they go searching for food. The decision on where to go for their foraging trip is not based merely on dominance and aggression, but rather on negotiation and compromise. Before the troop leaves for foraging they may spend several hours on

²¹ . The word 'instinct' has often been criticized and many alternative names have been proposed. The main problem with the word instinct is that it may give a conception of a fixed and robot-like behavior beyond intelligent control. It would therefore be more correct to say that there are genetic predispositions which increase the tendency for certain behavioral responses.

this process. One male moves a few meters in the direction he thinks is best and eventually some other animals follow. Other animals move in another direction. Thereby the group takes the shape of an amoeba with pseudopods in different directions. Some pseudopods grow bigger while others shrink until the animals have come to an agreement about which direction to go (Kummer 1968, 1971). This process makes use of the knowledge of a considerable number of animals about where there is food to find, and it is therefore more effective than if the decision was taken by a dominant leader alone.

This form of communication in the baboons has functional similarities with the waggle-dance of bees as well as with human dance. As I will explain later in this chapter, it may be that human dance and singing has, or has had, a similar consensus-seeking function.

Of course there is a big difference between human art and any phenomenon found in animals, not least when it comes to pictorial art. Chimpanzees and other apes are able to draw if you give them the necessary tools, and they love it. But such a creative activity has only been observed for animals in captivity, and the drawings only consist of a bunch of lines which apparently do not represent anything (Morris 1962). The artistic abilities of apes are by far surpassed by the male bowerbird that builds elaborate and colorful constructions in order to attract the female (Diamond 1986).

Paleolithic cave paintings show that our early ancestors also produced art. These cave paintings are depictions of animals or hunting scenes. It is assumed that this art had a social function in connection with a religious animal cult. The relationship of the humans to the animals was characterized by magic, and the depiction of the animals by means of drawings and dance served as a materialization of the supernatural beliefs. The hunting required instruction, collaboration, coordination, and organization, which were achieved by means of art and rituals (Schenk 1982, Hewes 1973)²².

Body painting and -adornment is an art form which may be even older. The function of body adornment is to symbolize social identity, social roles, and possibly also a sexual signal (Coe 1992).

²². Dissanayake (1984) has argued that it may be problematic to distinguish between art, ritual, and play in this connection.

Various art forms have acquired several new functions by cultural evolution during prehistoric and historic times, and it is of course difficult to determine how old the various functions are.

There can be no doubt that art is subjected to cultural selection based on human preferences and taste. Psychologist Colin Martindale has studied the cultural evolution of art and tried to find regularities in the changes. He does not attach much importance to the connection between art and other social phenomena, but directs his focus on art as an autonomous phenomenon by studying how new art depends on earlier produced art. According to Martindale, art is subject to a selection pressure in the direction of novelty and variation, which in the long term lead to cyclic variation in the artistic representation (Martindale 1990).

Sociologist Vytautas Kavolis maintains that arts form and reinforce the tendencies of humans to interpret social situations in certain structured ways. Art facilitates the development of an emotional relationship in humans to their social environment by creating symbolic foci for the sociocultural integration. Arts confirm and legitimize the cultural value orientations of a society by filling the visible world with forms which are psychologically congruent with these value orientations. Kavolis does not find that the social and cultural orientations are reflected directly and specifically in the expressions of art. He finds it more likely that the cultural conditions shape the organization of personality or the cognitive dispositions, and that this cognitive structure entails an aesthetic preference for forms and styles which are psychologically congruent with the internalized value orientations (Kavolis 1968).

A related theory says that art expresses social fantasy. Artistic expression is a projection of the social environment of the artist as he perceives it or as he wishes it to be. Among the possible styles, the artist prefers the one that is most congruent with the social conditions under which he lives. Even though this selection process may be unconscious to the artist himself, the consequence is that art may be regarded as a cognitive image of the society that the artist represents (Fischer 1961).

The latter two theories are supported by cross-cultural investigations that demonstrate a remarkable connection between artistic expressions and social structure (Fischer 1961, Kavolis 1968, Lomax 1968, Billings 1987).

An important part of the messages that art communicates is unconscious for the artist as well as for the receiver. Art often speaks the language of the unconscious mind. This is the same symbolic language that is found in our dreams, and this language is probably much older than the spoken word. Any intelligent mental activity requires symbols to represent the items we think about. The words of the spoken language play a dominant role as symbols in the conscious thinking of modern human beings, but before the spoken language arose, our ancestors must have used other symbols such as images, forms, colors, gestures, sounds, etc. as the symbols necessary for mental activity. This primitive symbol language still lives on in our unconscious, and it becomes visible to the conscious mind when it is expressed in dreams and in art.

Psychoanalyst C.G. Jung has demonstrated that many of the symbols of the unconscious are survivals from earlier evolutionary steps where our psyche resembled that of animals. This ancient heritage, the so-called archetypes, are common to all humans, and they constitute what Jung calls the collective unconscious. The concept of archetypes should not be interpreted as fixed well-defined images or motives, but as an inherited tendency to form representations of mythological motives which may vary considerably without losing their basic pattern (Jung 1969). I do not doubt that fundamental parts of the collective unconscious phenomena are determined by genetic heritage, but there is reason to emphasize that the theory of unconscious communication through art and rituals opens the possibility that many of those products of the unconscious which are common for all humans in a society may have been transmitted through this channel, i.e. a kind of cultural inheritance.

The very fact that art speaks a language which the unconscious mind understands better than the conscious, makes it possible that humans can receive an emotional influence through art of which they are not conscious, and therefore have few possibilities of resisting:

"The purpose and sense of an outspoken confession or of a message which is ordered, or communicated as if ordered, are always known to the speaker and the transmitter, and the appeal is either consciously accepted or rejected by the addressee. The impulse which is exercised by a work of art may, however, also remain unconscious and, indeed, not only may be expressed in an unconscious manner but also may have an unconscious effect; that is, it influences the ideas, the feelings, and the actions of the recipient without his taking it into account. In any

case it is a significant fact that the social and political effect of a work is that much stronger the less obviously the intention is expressed and the less it seeks agreement..." (Hauser 1982:216).

Even though it is possible to prove a strong connection between art forms and social structure, it is difficult to distinguish between cause and effect. Is it society that influences the art, or is it the art that influences society? Most probably they are both part of an integrated network of factors which all mutually influence one another. Art is no unimportant appendix in this interaction, but an important channel for the communication of worldview, outlook, ways of thinking - in other words: cognitive structures. Art may therefore be a conveyer or catalyst of changes in the social structure.

It is well known that totalitarian regimes attempt to consolidate their power and suppress any tendency to uprising by a strict control and regulation of artistic production. Many rebellious movements likewise make use of battle songs or satiric art as a means of creating ideological unity and solidarity among their adherents. Peaceful democratic societies, on the other hand, focus far less on the ideological importance of art, and often regard very different artistic styles as equally valid.

The conclusion is that pictorial art, literature, drama, music, song, dance, and other forms of art are means of communication that contain a social message which may be conscious or unconscious to the sender as well as to the receiver. Such messages may be transmitted in a society through many generations and are thus subject to cultural selection. Based on this thesis, the following paragraphs will study how various branches of art are influenced by cultural selection, and in particular how the cultural r/k-dimension is reflected in art.

11.2 Styles and social stratification

The powerful upper class in a socially stratified society have an egoistic interest in maintaining a regal social structure because its power is thereby consolidated, whereas the members of a repressed lower class may be interested in a kalyptization, unless they are dependent on protection from the upper class. This conflict of interests is often reflected in a difference in aesthetic taste and a differentiation of

styles²³. Since these differences in style are important to the population, the various styles will often have names and a classification system will be constructed. Sociologist Paul DiMaggio has studied such art classification systems in various societies and found that the more pronounced the social stratification, the more differentiated is the art classification system (DiMaggio 1987). The upper class prefers the regal *high culture* and despises the more kalyptic *pop culture* of the lower class. The state or the upper class often consolidate their power by giving economic support to a high culture which, unlike the pop culture, could not exist without this support. The upper class also attempts to order the art styles into a hierarchic system, where the high culture has the highest prestige, whereas the popular art is given the lowest prestige, or is simply not regarded as art at all. The bigger the social disparities in a society, the more hierarchic its art classification system.

If art is subject to the mechanisms of a free economic market, then these mechanisms will often counteract a hierarchic classification of art because the producers have an interest in creating respect for a product which appeals to the broadest possible areas of the population (DiMaggio 1987). Thus there may appear a conflict between various art classification systems, and the outcome of such a conflict has importance for the future r/k-status of the society.

11.3 Visual art

Pictorial art is an art form which contains almost unlimited possibilities for expression. The number of genres, styles, and possible symbolisms is so great that in principle the artist can express almost any mood or attitude to life through his painting. Sociologist V. Kavolis has studied how various aspects of social life and worldviews are reflected in the pictorial art. I will give a brief account of some of these relationships here. The reader is referred to Kavolis (1968) for further details.

Some societies have the common view that humans by nature are good. This view is mirrored in the art by a realistic and naturalistic depiction of humans. But if humans are regarded as evil, then this is shown by a distorted picture of humans. The idea that the world is disharmonious

²³. The differences in taste between different social classes have been described by Kavolis (1968) and Bourdieu (1979).

and that evil exists as an autonomous force is reflected in an expressionistic distortion of reality.

A people's conception of time can also be read from the art. A society which is oriented towards the past and which worships its ancestors, typically produces three-dimensional pictures with a deep perspective, where important figures are found in the background. A people which lives in the present produces perspectiveless pictures without horizon or depth. A growth-society oriented towards the future will typically produce dynamic and unfinished expressionistic pictures which sometimes break out of the frame.

The religious worldview obviously has a great influence on artistic creativity. Kavolis makes a distinction between religions which are based on a strong faith, and emotive religions where spiritual experiences are important. He finds that the art of emotion-based religions is characterized by sensualism and mysticism, whereas the dogmatic faith-religions express an abstract symbolism and puritanical strictness. Authoritarian religions based on God's absolute power produce a massive art full of rigid formalism, whereas a less controlling religion gives rise to a more flexible and informal art, full of spontaneity and individual expression.

Technological progress which gives the humans a feeling of improved control over nature leads to geometrical patterns in the art, whereas people who are dependent on nature or live in harmony with nature produce a more naturalistic art, according to Kavolis.

Political and social structures have particular importance for the cultural r/k-theory. A strictly hierarchical society with an absolutist regime characterizes itself by grandiose and luxurious art forms full of sumptuous ornamentation. The pictorial area is packed. Any vacant space is filled with perfectionist details. The purpose of the rich ornamentation is to emphasize the greatness and honor of the ruler or the god. Persons are usually depicted frontally, unless they are evil. A rigid conventionalism and stereotype formalism is typical of religious and political absolutism.

The art is very different in an egalitarian or democratic society. Informal and individual spontaneity is given free rein. There is no finical ornamentation and no accentuation or glorification of certain elements at the expense of inferior details. Colors are given more importance than lines.

Cultures based on solidarity are characterized by abstract and repetitive elements in the paintings. The pictorial area is not filled up, but may contain empty or irrelevant spaces. The figures are not sharply demarcated by full-drawn outlines as they may be in the art of hierarchic cultures (Kavolis 1972, Bergesen 1984).

There is reason to warn, however, against regarding the connection between artistic style and social structure as specific and unequivocal. Kavolis emphasizes that whenever an artistic style has been established, it is likely to persist even when society changes. A society under change will not necessarily produce new styles. A static correlation therefore neither confirms a causal connection nor a psychological congruence between artistic style and social conditions. But if new styles emerge concurrently with new social structures, then there is reason to regard the connection as principal (Kavolis 1968). In a later book Kavolis states that the artistic creativity does not reach its peak in periods of intense political activity or upheavals, but rather in the subsequent phase of reintegration (Kavolis 1972)²⁴.

Example: european art

Artists had status as artisans in the middle ages. They were working for the church and produced art which served the interests of the church. What was in demand was talented workmanship, not originality. Art and architecture was sumptuous and glorifying in order to emphasize the dignity and authority of the church. This regal control over art reached its peak in the late medieval gothic style.

By the end of the middle ages, artists had got more freedom and gradually came to constitute a separate cultural class distinct from tradesmen. The production of the artists was no longer determined by closely defined assignments for predefined purposes, but was increasingly determined by free market forces and by the private taste of the

²⁴. Unfortunately, the comparisons supporting this statement are based on a number of criteria for artistic quality which are claimed to be trans-culturally and trans-historically universal, which is in conflict with Kavolis' own theories of psychological congruence. In my opinion, the existence of such universal criteria is an illusion because the regal art with its monumental sumptuousness always will attract more attention and admiration than the more humble kalyptic art. In other words, I think that it is impossible to compare the quality of regal and kalyptic art, or for that matter to compare art within widely different styles or genres.

individual artist. This freedom made it possible for the artists to show originality and genius which had not previously been possible: Talent can be controlled by authority - genius cannot. Artists got a hitherto unknown prestige. Society began to develop theories of aesthetics and to appreciate art for its own sake. The result of this kalyptization was renaissance art. The formal symbolism of the gothic style was superseded by a more naturalistic and sensuous art.

The political and religious conflicts in the period around the reformation and the counter-reformation led to a corresponding turbulence in the realm of art. Several different styles existed side by side in the sixteenth century: renaissance, mannerism, and baroque. Mannerism was connected to the court and the international intellectual elite. The more national and emotional baroque was the propaganda of the counter-reformation (Hauser 1982).

One of the most illustrative examples of the connection between social ideology and artistic style was the difference between flemish baroque and dutch naturalism in the 17th century. These two styles arose almost simultaneously in geographic proximity out of the same cultural traditions and the same historical past. The difference can only be explained from the political, economical and social differences between the two countries. The aristocratic and monarchistic norms and conventions prevailed in catholic Flanders where a strong alliance between church and state existed, and the artists had to pay for their security with their freedom. The dutch protestantism, on the other hand, was from the beginning on democratic and against authoritarianism. The republican, bourgeois and capitalist life-style and the independence of the artists made a significantly more free art form possible (Hauser 1982:236,290).

The regal baroque was replaced by the somewhat less regal rococo as the influence of the aristocracy was reduced in favor of the bourgeoisie. The age of enlightenment and the french revolution favored the advent of the more kalyptic classicism in the 18th century. The classicism was a more simple and naturalistic style without the turgid ornamentation of earlier times.

Nineteenth century romanticism marked a new regalization in the european culture. Nationalism, imperialism, puritanism, and victorianism prevailed. The romantic literature was immersed in a spiritual idealized world which rejected the external prosaic life. Religious thought was

characterized by self-control, philanthropy, and missionary calling. Pictorial art was inspired by rococo and architecture by the gothic style. Art education in british schools was an exercise in the production of standardized ornamentations; there was no place for individual creativity (Thistlewood 1986).

Art was relieved from the spiritual tyranny with the advent of modern art at the end of the 19th century. Modern art with its bright colors and unconventional expressions indicates a striking individualism. The multiplicity of styles in the modern period is, in itself, a proof that the cultural uniformity had been broken.

Ideological and aesthetic conflicts

Artists may sometimes be perfectly aware of the connection between ideology and aesthetic style, but quite often they are totally unaware that they are involved in social turbulence. Let us look at an example from the renaissance:

At the beginning of the 16th century, Venice was losing a great deal of its power and influence. This gave rise to a political and moral crisis within this empire. The venetians felt that God had let them down and they tried in all ways to be reconciled with God and to repair the threatened alliance with him. The artists took part in this process, and this gave rise to a significantly more naturalistic style which, according to contemporary conceptions, should improve the relationship with God (Steinberg & Wylie 1990). While the logical reaction in this situation would be to produce an art which expressed more glorification and praise of God, the reality was exactly the opposite. The naturalistic style in the religious paintings made it more difficult to mark the difference between sacred and profane, which meant that the difference between God and humans was reduced. In retrospect it is evident that the transition to naturalism was connected with the kalyptization which caused the collapse of the venetian empire, but the artists of that time apparently did not know that they were part of a process which weakened the power of Venice. Their own conception was that they were doing just the opposite.

11.4 Music and singing

Music is a form of communication which exists in all cultures. It communicates cultural and aesthetic values which gives it a socializing

function (Lull 1985). Music is activating: it inspires to dance, song, beating the rhythm, and other active participation. The production of music and song is a social ritual which has an emotional influence on the performing musicians as well as on any spectators and listeners.

It may be difficult to interpret the message that lies in, say, a piece of music and translate it into words, even though music, singing and dance are very well-known to everybody and we listen to it with great interest. We intuitively feel that we understand the music because it speaks the language of the unconscious.

But what are the messages that are communicated through these branches of art? We have all experienced how music can convey feelings and emotions such as happiness, merriment, love, sorrow, melancholy, national pride, and religious awe. The function of such emotions is to control our actions. What is less obvious is that music also is able to communicate a variety of informations about social structure and value norms. This is evident from research which shows a surprising connection between social structure and the structure of singing and dance (I will return to these studies shortly). Communication through music is a transmission of information from the unconscious mind of one person to the unconscious mind of another. Neither sender nor receiver needs to be aware that a communication is taking place.

We may therefore assume that music has a sociobiological function by contributing to the creation of solidarity and collective identity within a tribe or society. As I will explain later, it also communicates norms of how the society is structured and how people should relate to one another.

I imagine that every human in a society expresses his personal opinion on how the social structure is or should be through his artistic taste or style. By the communal singing and dancing in a tribal society, the styles of the individuals approach one another in a common compromise which is the expression of a kind of consensus on how to structure that society. In other words, this is a kind of primitive unconscious negotiation process which resembles the way a troop of baboons reach an agreement on where to go foraging (see p. 190).

I have already argued that it is important for the long term survival of a society that it is able to adapt rapidly to changes in external conditions

by regalization or kalyptization (see p. 98). The assessment of which r/k-strategy is optimal under given conditions can not be efficient if it is done by the leader alone because he would always have an egoistic interest in regalization. In order to be effective, this assessment must be executed by all members of a society in cooperation, and it is my hypothesis that communal singing, dancing, and other artistic expressions in a tribe or society are vehicles for negotiating a consensus on r/k-strategies and other aspects of social structure.

The r/k-strategy is probably only one among many social factors which can be expressed through music. Later I will return to this discussion with some examples on how negotiations about social structure are disguised as discussions over the aesthetic value and the social danger of various musical genres (see p. 207).

Cantometrics

In the 1960's, a research team headed by ethnologist Alan Lomax (1968) carried out a fascinating study of songs from many different cultures. A number of characteristics of each song were meticulously recorded and the entire data file was then compared with various ethnological and sociological data for the cultures which had produced each piece of music. This research method was called cantometrics. A statistical analysis of these comprehensive data revealed a systematic connection between song style and social structure: "*.. as people live so do they sing.*" This correlation showed a degree of statistical significance which is seldom seen in the social sciences. A better proof of a connection between song style and social structure can hardly be conceived.

Lomax discusses numerous characteristics in folk songs and examines the social significance of these characteristics. One of the most important attributes is the difference between solo and choral singing. Choral singing in unison is predominately found in societies with high solidarity and where collaboration and teamwork is an important part of daily life. Solo singing, on the other hand, is found both in societies that stress the importance of self-assertion and in societies where a strong leader decides everything. These songs are often complicated and the voice is noisy which makes it particularly difficult for the listeners to join in. Solo singing is often more wordy than choral singing. Wordy songs with a precise pronunciation belong to societies with a very complex social and economic structure where people meet complex instructions in their

daily life and where the words of leaders and experts are important. At the opposite end of the scale we find songs full of repetitions, nonsense, or inarticulate sounds. Such non-wordy songs are found in societies with a simple social structure where everybody understands a short message and where there is no need for detailed explanations.

A harsh and raspy voice is a sign of self-assertion. Narrow melodic intervals are found in cultures with rigid status systems, whereas wide intervals are found where people are less confined and have more freedom of movement, physically as well as socially. A narrow, nasal voice and a predominance of love themes in the text indicate restrictions in the sexual lives of the people.

It is not only the sound itself which is significant, but definitely also the way it is created. The difference between the various singers or musicians in an orchestra reflects the social relations in the society in many ways. A large and compound orchestra led by a single conductor or choirmaster is closely connected with a social system based on centralized political control and pyramidal social stratification. Part-singing and counterpoint symbolize the division of labor, especially between men and women, and a complementarity of sex roles. This applies regardless of the sex of the singers, according to Lomax.

Elaborate and detailed orchestral music full of embellishments and ornamentation is characteristic of religious music expressing reverence and awe towards God (Lomax 1968).

A more limited study of black american music shows a similar connection between music style and social solidarity (Bergesen 1979). This study is far less comprehensive than the Lomax study and includes only a single social parameter: solidarity. Bergesen's theory is based on Bernstein's (1975) theory of restricted and elaborated code. A restricted code is a communication where the vocabulary and the number of syntactic alternatives are limited. An elaborated code provides more freedom and more alternative possibilities of expression. The restricted code is typically found in societies characterized by solidarity, uniformity, and consensus, where there is no need for detailed expressions. The elaborated code is found in more pluralistic societies where there are more possibilities for expressing unique and personal ideas. Bergesen applies this distinction to music as communication and uses black american music as example.

The history of the blacks in America began with slavery, which was a period with strong solidarity among the blacks. This was expressed through the *spirituals*-genre, which is a more regular musical expression than the later forms. *Jazz* and *blues* arose when the blacks began to migrate north and gain independence so that the solidarity dwindled. The music is now a typically elaborated code. This is particularly easy to see in the jazz where irregularities and improvisations is the rule rather than the exception. When the civil rights movement and the increased ethnic consciousness led to a renewed need for solidarity among the blacks, then the *soul* music was born, representing again a more restricted code (Bergesen 1979).

Regal and kalyptic music

Now, let us see how the results of Lomax and Bergesen can be used in connection with the cultural r/k-theory. Lomax describes a number of characteristics which are directly related to the social structure and political hierarchy (Lomax 1968:150-163). The most significant marker is *embellishment*. Elaborate details and ornamentation are symbols of reverence and glory. The more extreme and rigid the social stratification, the more awe must be expressed through an embellished music. Ornamentation is a clear indicator of regality. The relation between leader and singers in a choir or between conductor and musicians in an orchestra is also a clear indicator of social stratification. A big choir led by a single choirmaster or a big orchestra controlled by a single conductor reflect the political structure of the regal society. The opposite extreme is a singing style where everybody sings by turns without any kind of leadership - like a flock of birds. This kalyptic singing style may be found in primitive societies who lack any political integration.

The difference between solo and choral singing leads us to the concept of solidarity. The feeling of solidarity belongs near the middle of the cultural r/k-scale. A regal society is based on compulsory collaboration and imposed uniformity, the intermediate society is based on voluntary collaboration and uniformity, and the most kalyptic society entails limited collaboration and no uniformity. The voluntary collaboration, particularly, is carried by the feeling of solidarity. This may be expressed through groups or choirs singing in unison without a conductor.

Somewhat more regal is choir singing with a lead singer. The next step is litany, where the leader sings first and the choir repeats. And the last step towards regality is solo singing where the soloist sings a song which is so complicated that it is impossible to join in and where the audience listen quiet and devoutly. The singer here is a symbolic representative for the dictator.

But solo singing is also found in the opposite end of the r/k-scale: Solo singing is an expression of individualism in kalyptic cultures. Occasionally you may also hear what may be called reversed litany: the choir sings a line and the lead singer repeats. This is an elegant symbol of a representative democracy.

The regal music and singing is closely defined by a rigid syntax and perfectionism. There are strict rules for rhythm, harmonies, rhymes, and foot with few possibilities for alternative expressions. This is a restricted code in Bergesen's terminology. The intermediate music expressing solidarity and voluntary collaboration is also a restricted code, but at the kalyptic end of the scale we find the elaborated code where irregularities are allowed. Jazz music is an obvious example.

I will argue that the social hierarchy is expressed, not only through the relations between lead singer and choir or between conductor and orchestra, but also through the relations between the principal melodic voice and the bass part or between singing voice and accompanying instruments. Regal music has a prominent melodic voice full of elaborate detail accompanied by a discreet and soft bass voice. Characteristic examples are classical music and oriental music. At the opposite end we find pop music where the bass voice and rhythmical accompaniment play a dominant part. Rock, jazz, and similar music styles are kalyptic.

The individual musical taste of a person is an unconscious expression of his or her socialization and social attitude. A comprehensive investigation of the musical tastes of north americans (Fink et.al 1985) shows that some musical genres are close to each other in the sense that persons who like one genre are very likely to also like the other, whereas other genres are very distant, like for example opera and rock music. A statistical factor analysis shows that the distance between american music genres can be expressed by two main factors, so that it is possible to illustrate the distance between genres by plotting them into

a two-dimensional diagram. The dimension or factor which is responsible for most of the variance (30%) is interpreted by the authors as a measure of formalism and complexity. In the complex and formalistic end of the scale we find opera, classical music, musicals, big band, and religious music. In the simple and informal end we find rock, country, bluegrass, soul, and jazz. The other factor in the analysis (which is responsible for 27% of the variance) reflects the difference between urban and rural populations, where rock, jazz, and classical music appeal mostly to townspeople, while country and gospel are mostly preferred by the rural population (Fink et.al 1985). In the cultural selection paradigm, the first dimension (the one that Fink and co-workers describe as formalism and complexity) fits the r/k-scale quite well, with opera as the most regal and rock music as the most kalyptic of the genres mentioned. This indicates that the cultural r/k-factor is one of the most significant factors in determining people's music tastes.

Examples

Of course, a detailed examination of the world history of music in the light of the cultural selection theory is not possible here, so I hope the reader will be content with a few illustrative examples.

In the early middle ages, musicians were, just like other artists, appointed by the church or the royal court. The purpose of the music was to praise God, and later also kings and war heroes. The middle ages were a time full of wars, which was reflected in the regal music controlled by the ruling establishment. Religious themes dominated until the age of romanticism when themes of love broke through.

This new theme is connected with a change in the social structure, originating in the 18th century, where the nuclear family was introduced as the fundamental element of society (Ariès 1960). Marriage and family life were romanticized and celebrated in song at the same time as a new and stricter sexual morality taught monogamy and marital fidelity through the ideal of *true love*. The obvious political and religious tyranny of earlier times had been replaced by a more subtle and less transparent regal device, namely sexual morality (see p. 171). The love theme, which is still predominating in modern pop music, maintains this sexual morality by idealizing *true love*.

Another indicator that romantic music is no less regal than its predecessors, is that audiences became much more disciplined in the

second half of the 19th century. Theaters and concert halls were darkened and the audience had to sit nice and quietly and wait with their applause until the number was finished. The architectural design of the theater emphasized the deep gap between the few idols on the stage and the many anonymous members of the audience. The difference between the fictive world of the actors or musicians and the world of the audience becomes analogous to the difference between the divine and the earthly worlds. The thousands of spectators become gray, anonymous, powerless, and humble (Sennett 1974:205ff).

However, the regal art is not always pacifying. It is necessary to make a distinction here between defensive and offensive regality. A regal culture is in a defensive situation if it is threatened by external enemies or inner kalyptic forces. This situation creates a solemn and grave music whose function is to discipline people and prevent revolt. Not so in the offensive situation characteristic of an expansive regal culture. Offensive regal music is bombastic and pompous, calling for national pride and fighting spirit as a basis for an imperialistic policy. Listen for example to the last night of the famous british promenade concerts where the audience loves to sing along to Elgar's well-known jingle:

Land of Hope and Glory
Mother of the free,
How shall we extol thee,
who are born of thee?
Wider still and wider
shall thy bounds be set;
God, who made thee mighty,
make thee mightier yet.
God, who made thee mighty,
make thee mightier yet.

Nobody can doubt the regality of this imperialistic text from the beginning of the 20th century when Britain was the world's leading colonial power. The audience has certainly become less disciplined since then, but the jingoism and nationalistic enthusiasm lives on.

Many new and more kalyptic cultural trends have popped up during the 20th century, especially in youth subcultures. Such cultures arise over just a few years and develop their own norms, values, dress style, music, dance, visual art, territories, and gangs - altogether nearly all the elements that are characteristic of a primitive culture. Such subcultures

arise spontaneously when a group feels superfluous or threatened or simply dissatisfied with the surrounding society. The speed with which such subcultures arise, spread, and change is an indicator of how effective the cultural adaptability of humans is, even though many aspects of it are more or less controlled by the unconscious. These youth subcultures may sometimes be characterized as counter-cultures, representing a kalyptic revolt against the established more regal society. Music is an important means of expression of these subcultures - often the most important of all - as a communicator of cultural messages and cultural identity. Many young people simply define their identity by their musical taste²⁵. Not surprisingly, most of the new kalyptic genres like rock, jazz, etc. have their origin in youth cultures.

During the last two decades, music videos have come up as a new art form and gained an enormous popularity among the young, even though it has not yet gained the status as a recognized branch of art. The art of music videos purveys a predominantly kalyptic music together with an equally kalyptic visual art.

The most popular subcultures and counter-cultures in a modern society often gradually become commercialized and integrated into the main culture. They lose some of their original contents at the same time as they move the main culture a little bit in their direction. In other words: The mainstream culture and the counter-culture gradually move towards one another to meet in a common compromise.

Music and singing has often been used by political leaders, schools, and churches as an effective means for influencing the population (Kincheloe 1985). Totalitarian regimes are often much more conscious of the social and political effects of artistic expressions than are democratic governments. Art censorship is therefore most widespread in undemocratic states.

Aesthetics debates

Changes in the arts and music of a country are most pronounced when the r/k-balance of the culture is drastically changed. A recent example is the collapse of the Soviet empire. The last years of the communist history of the eastern bloc countries showed an increasing degree of artistic freedom including an increasing accept of rock music (Rácz &

²⁵. See Bourdieu (1979) for a discussion of taste as an expression of cultural identity.

Zétényi 1994). Many critical voices were heard, however, and there were vehement debates over the harmfulness of the rock music which, quite aptly, was called a cultural trojan horse (Meynert 1987). The arguments against rock music were that it was stupidifying and pacifying and that it appealed to the audience as a group rather than as individuals (Popov 1987, Sarkitov 1987). Even though these arguments could hardly be more mistaken²⁶, they are an interesting example of the general human ability to rationalize an emotional or instinctive aversion against exactly those cultural expressions which most threaten the cultural status quo.

A similar conflict is seen in the USA where many people feel that popular music can influence people's attitudes (Toohey 1982). The most regal forces in the country (primarily the religious fundamentalists) have often tried to combat jazz and rock music, to which they feel a strong aversion (Gray 1989). For example, they claim that rock music contains hidden satanic messages which can be heard when the music is played backwards (Locke 1991, Vokey & Read 1985). But the music is protected by one of the most effective ideological weapons of kalypticism: the freedom of speech. The most important exception from freedom of speech is pornography, and it is therefore not surprising that some rock songs have been censored and banned because of obscene contents (American Civil Liberties Union 1991a,b). Likewise, attempts have been made to hold a rock band responsible for the suicide of a few of its fans (Locke 1991).

However unimportant these conflicts may seem in the overall view, they are nevertheless expressions of a very fundamental process guiding social evolution: Every human being expresses - often unconsciously - his or her personal view of society by the exercise of his/her musical and

²⁶. An analysis of soviet rock music (Kataev 1987) shows that this genre is more varied in terms of intonation and song themes than traditional soviet popular music. The rock musicians are mostly singing about social, moral, psychological, and existential themes, where the all-dominating theme of the soft pop music is love and romance. The soviet rock music demonstrates a reluctance against keeping to the beaten track, it avoids hero worshipping, and it stimulates the listener to form an individual opinion, unlike the banal pop music which more justifiably could be called stupidifying. Since the rock music conveys an alternative ideology with which the audience identifies, this music automatically comes to stand for a deviant social identity which characterizes its fans. It is a general psychological phenomenon that persons with a deviant identity are perceived by outsiders as a group rather than as individuals (Hogg and Abrams 1988). It is therefore not surprising that outsiders see the rock audience as a group rather than as individuals even though this music communicates a more individualistic ideology than the mainstream culture.

artistic taste. *The debate over which musical genres are aesthetically acceptable is therefore at the unconscious level a negotiation about the desired social structure.*

11.5 Dance

Dance is a form of communication just like other arts. Not only humans dance, but also certain birds, bees, and apes. Many mammals have a highly developed body language, and since dance is a kind of body language, there is reason to believe that this form of communication is evolutionary much older than spoken language. Some scientists claim that dance as a form of communication has been used in primordial times to communicate and rehearse hunting techniques (Hewes 1973, 1974, Sachs 1933).

Dance has many similarities with the spoken language (Kaeppeler 1972, Williams, D. 1978, Hanna 1979c). It is an important part of the social and religious organization in primitive societies (Spencer, P. 1985). Dance imitates social behavior, hunting and other pursuits, animals, war, and religious myths. Dance is used for negotiating and solving conflicts. Prolonged dancing to an often monotonous musical accompaniment is used in religious rituals for obtaining ecstasy and changes in the level of consciousness (Snyder 1974, Hanna 1979b). The dancer achieves an alternative level of consciousness which is so foreign to his everyday self that he may describe it as a foreign spirit having entered into and taken possession of his body. The religious dancer is possibly closer to his unconscious mind in this state than in his normal state of consciousness, and therefore in better contact with the symbolic language of the dance.

Just as in music and pictorial art, it is possible to demonstrate an important connection between the style of dance and social structure (Rust 1969, Lomax 1968). Dance is a more effective way of influencing people's attitudes than other forms of communication because it incites to active participation and it influences several senses at the same time, according to anthropologist Judith Hanna. The same message is repeated many times and communicated through several channels in parallel: movement, music, song text, body decoration, social context, and social roles in the dance (i.e. who dances what). Both body and mind are involved through active participation and the attention is totally focused on the dance. Somebody who is not interested in listening to

the message of the dance will unavoidably get it anyway because he is attracted by other stimuli which work as bait. People are influenced by the dance - not with power, but with seduction. Hanna therefore claims that dance has a cybernetic function in controlling and regulating the social system (Hanna 1979a: 86-90).

The symbolism of the dance

It is a widespread opinion that dance is a form of communication, but, just like in other of the arts, it is difficult to tell *what* is communicated.

The dance is full of symbolism, and there have been many attempts to interpret these symbols. One recurrent motif is the ring. People who dance around something will focus their attention on whatever object is in the center of the ring. It may be a totem pole, a spear, a fire, a pot with water, a person to be initiated, a death body to bury or, in our days, a christmas tree. To encircle an object is to take possession of it - to incorporate it into the community, or to expel it. The captured scalp which is encircled must transfer its power from its previous owner. The shaman dances around the sick person to exorcise the evil spirit from him. The dance around a sacrificial animal means that the animal dies for the sake of the community. The circle has a religious meaning which is seen, for example, in the fact that the nahua people of the old Mexico danced their ceremonious dances in a circle, but their profane dances in two straight rows (Sachs 1963:144).

Everybody is equal in a circle dance. The equality is broken if the dancers appear in other formations, such as a snake. There is one person who goes in front and the other dancers follow and imitate the leader. Another motif is two straight rows facing each other. Here the dancers are usually exclusively men, and the two rows confronting each other symbolize war. In other cases, one row consists of men and the other of women. Here the pantomime represents a mating game (Sachs 1933). In big kingdoms and empires you see military parades where a large number of soldiers march in long straight columns led by a single commander. The similarity with the command structure of a monarchy is striking.

There are several societies where mothers lift their children into the air in order to support their growth (Sachs 1933). A similar symbolism is found in modern couple dances where the man lifts the woman as a symbol of economic support. This leads us to the sex roles. Judith

Hanna has documented that, to a high degree, the dance in various societies reflects the sex roles (Hanna 1988, 1989).

Primitive societies mostly have single-sex dances. There are dances for men and dances for women, but men and women seldom dance together (Sachs 1933). This reflects the typical division of labor between the sexes that is seen in primitive societies. Here the tribal or village community spirit is more important than marriage fellowship. Unisex dances still dominated in the middle ages, and they even had special profession dances which belonged to a particular trade (Ariès 1960). Dancing in couples arose during the middle ages. In the beginning there were hardly any touching between the man and the woman in these dances, but later they began to hold hands, and the coupling together culminated in the 19th century with what today are called ballroom dances, where the man and the woman hold each other tight (Sachs 1933). In these dances the man and woman move together completely as if they were one. This was most popular in the time of romanticism where marriage and the nuclear family became regarded as the building blocks of society. Today, where the importance of the nuclear family is decreasing, there is a tendency among young people for the man and woman to touch each other less during the dance and move more independently, although they still dance almost exclusively in couples.

But the couple dances have never completely displaced communal dances, which have lived on in rural areas and in the singing games of children. Today single-sex dances are slowly appearing again in urban youth cultures in forms like *break dance* and *hip hop*, where young men compete as to who can perform the most acrobatic dance.

You may discuss whether dance is a superfluous relic of a distant past, an empty diversion and senseless pastime whose function has been long superseded by other more effective means of communication, or if it still has a ritual meaning and a function in connection with our social life and organization. It has been found that the dance style changes when the social structure changes (Richman & Schmeidler 1955, Sachs 1933, Rust 1969), and closer study reveals that the dance may contain a quite rich and detailed symbolism. Music historian Kurt Sachs had an eye for the more advanced symbols. Let me quote a few examples: Many societies have dances where one or more couples make a bridge with their arms under which the other dancers have to pass. Sometimes there is a whole row of couples forming bridges, where the hindmost

couple go under, come up in front, and form a new bridge which the next can go under. To go under the arms or legs of other dancers is usually a symbol of birth, and in the formation described here we see the perpetual renewal of life, generation after generation. Another advanced motif which is found in many cultures is the braiding chain dance (*chaîne anglaise*) where men and women move round in opposite directions in the chain. Every second time you meet a person going in the opposite direction you give him your left hand and pass to the right of him, and every other time the right hand and pass to the left. Sachs believes that this braiding motion symbolizes weaving which in turn symbolizes creation (Sachs 1963:162ff). Is he right, or is this an over-interpretation?

There is every reason to ask if such an advanced symbolism is understood at all. Few dancers speculate over the analysis of symbols when having fun on the dance floor. Neither do any of the passive spectators. Perhaps not even the person who originally invented a particular dance was conscious of its symbolism. But maybe at the unconscious level? Eleanor Metheny poses exactly this question:

““Growing up to be a man” can be an exciting, frightening, and rewarding process at any age. It was an intensely fearsome experience for the boys who came to manhood during the years of World War II, an experience made more complex by the need to hide those fears. To me, the sense of these complex feelings is connoted by the adult wartime version of looby-loo, which was called the hokey-pokey.

In the hokey-pokey, the old tune was “jazzed up” and the dancers moved to a syncopated beat. The hand became a fist, with pointing index finger, and every movement in the dance was enlarged and executed forcefully. The old words were changed to fit these forceful and syncopated movements, with the emphasis falling on the italicized words. “I put my *right* arm in” was executed in stride position with a full striking pattern as the fist with its extended index finger was snapped into place, pointing toward the center of the circle. “I pull my *right* arm out” reversed this pattern. “I *do* the hokey-pokey as I *shake* it all about.” Here “it” referred to a very important part of the body which could not be named directly but was shaken vigorously as the extended finger was raised overhead and waggled from side to side. Then the dancers shuffled or “trucked” around the circle, waggling their fingers overhead, doing the hokey-pokey. Left arm, right leg, and left leg were successively put in and pulled out, and finally “all of me” was committed to the requirements of the dance.

Did these fearful and brave young men who were growing up in a hokey-pokey world of danger and death recognize the connotations of the movement patterns of reaching out, withdrawing, and shaking? Did they identify the pointing finger as a symbolic gun or as a phallic symbol? Did they sense the connotations of bravado in the finger-wagging pattern? Did they comprehend the sense of assurance with which they resolved their in-out-shake conflicts by resolutely shuffling along or "trucking on down?" Probably not. Probably they would have been embarrassed beyond words if anyone had suggested such meanings to them. But we do know that they called for this adult version of an old children's dance again and again, not just because the movement patterns could be performed with any "hello-good-bye" partner in the USO recreation centers, but because the feelings and emotions evoked by this performance were meaningful to them." (Metheny 1968:45).

There can be no doubt that the hokey-pokey dancing young men in this example understand the symbolism of the dance better with their unconscious than with their conscious mind, just like any other dancers. But it is almost impossible to answer exactly how much, how, and why, as long as we do not have any effective and reliable means for studying the unconscious. It is evident that human dance reflects many aspects of social life, but whether this symbolism actually serves a function or purpose is difficult to tell. Maybe the function of the dance is to communicate and rehearse the norms of social behavior. Maybe the dance is used for negotiating and reaching agreement about the desired social structure. Maybe the dance is utilized for proposing and experimenting with new social structures. Maybe for working through and solving psychological or social conflicts.

Most of the studies of dance and its symbolism have concentrated on the movements of the individual dancer: which parts of the body he moves, in which direction, how fast, etc. (See e.g. Lomax 1968). But if we are looking especially for those symbols which are relevant for the social structure and for the cultural r/k-theory, then we have to look at the interaction between the dancers and their different roles. Who is dancing? How many dance together? Are there passive spectators or do everybody join in? Do people dance for their own sake, for the community, for a deity, or for the spectators? Do the dancers appear in certain formations or randomly among each other? Are all positions in a formation equivalent (as in a circle) or are there different roles (for example a leader in front of a row). Are there certain dances or certain

roles in a dance which only are danced by persons with a particular social status? Are the movements of the dancers coordinated or independent of each other? Do they touch each other? All these questions are important for interpreting the social symbolism of a dance.

I have already mentioned how the sex roles and family structure are mirrored in the dance (for a further analysis see Hanna 1988). Another important aspect which is reflected in the dance is solidarity versus individualism. In a society with high solidarity, everybody participates in the dance and follow each other in coordinated movement. They often touch each other, for example in a ring where everybody hold hands. The opposite is an individualistic dance where people dance randomly among each other without any coordination and do not touch each other except for unintended collisions. Even more individualistic is the situation where only one person dances at a time, as for example in the Greenland drum dance.

The theory of restricted versus elaborated code (see p. 202) is also applicable to dance. A restricted code is found in regal and intermediate (solidaric) societies, whereas the elaborated code primarily is found in kalyptic societies. A restricted code means that the dance is regulated by complex rules and a strict syntax with no room for individual variations. An extreme example is the minuet which was danced at european courts in the years around 1700. The minuet was a complicated dance with small delicate steps. It required several years of learning and an immense precision. The minuet was more a lesson in proper manners and self-discipline than a relaxing diversion.

The minuet disappeared rather suddenly in the middle of the 18th century and was replaced by the contradance which was danced much more amateurishly. This change in dance style is connected to the fact that the cultural and political dominance of the aristocracy was reduced in favor of the bourgeoisie (Sachs 1963:398f) in the same way as the rococo style replaced the baroque in painting and architecture. A similar class difference can be observed in modern society where the dance of the lower classes is more innovative whereas the dance of the upper class is more conservative (Cottle 1966, Rust 1969).

The relationship between dancers and spectators is also interesting. In the classical ballet, for example, the distance between dancers and audience is extreme. The dancers are untouchable experts who move in

a lofty fairy-tale world in simulated weightlessness whilst the audience sit quietly at a distance and admire them. This pacifying situation is in itself regal and in sharp contrast to folk dance where people dance for their own sake and where everybody can join in without any requirement for expertise.

Dance has always been a social phenomenon. People dance with others or for others, but seldom alone except when practicing for a later social situation. It is therefore no surprise that dance activity is highest in solidaric societies. The most regal societies have replaced much of the dance activity with less animated movement forms such as parades, marches, and religious rituals. Although these movement forms may be rhythmic, they are not what we normally define as dance, but are no less involving. Although dance as mentioned is an effective means of indoctrination, it may be too frivolous for serious occasions calling for strict discipline and self-control in a regal society. Here there is more need for grave praying rituals resembling the submissive gestures of animals.

Dance activity is also lower at the kalyptic end of the scale although it is not controlled by restrictions as it may be in a regal society. Kalyptic dance is more unrestrained, individualistic, improvised and uncoordinated. People dance independently or one at a time. Despite the sexual liberty, the most kalyptic dance is no couple dance, and there is only little touching between the dancers.

Dance illustrates several aspects of the social structure in any society: social relations, sex-roles, division of labor, etc. Many of these aspects are somehow related to the cultural r/k-level which is therefore indirectly reflected in the dance. But the most significant factor in relation to the r/k-scale may not be the kind of dance but rather its quantity and intensity which, as already said, is highest in solidaric cultures at the middle of the r/k-scale.

11.6 Architecture

It is easy to see a connection between architectural style and regality. Regal regimes have always produced grandiose and ostentatious buildings, whereas the building style of kalyptic societies is more deter-

mined by practical and economic considerations than by the wish to impress²⁷.

Regal buildings are characterized by a highly developed and often quite conscious symbolism. Just as in other branches of art, ornamentation is a very characteristic sign of regality. We can observe a profuse richness of meticulous detail with a pronounced symbolism. In important buildings everything is bigger than that which practical considerations demand: huge rooms with high ceilings and enormous gates and steps that make the visitor feel small and humble.

In antiquity, columns were a characteristic element in temples and other big buildings. Besides the practical function, columns also had an ancient polytheist symbolism which was emphasized by their decoration (Hersey 1988).

In the middle ages, the buildings of influential people was supplemented with new elements like towers, spires, domes, portals, etc., in a sumptuousness which went far beyond any practical purpose, but primarily served as symbols of power (Grabar 1978). The tendency to build towers which seemingly served as protective measures but which in reality rather served as status symbols, continued well into the renaissance (Samson 1990).

Islamic buildings were covered inside as well as outside with geometric patterns, arabesques, ornaments, and religious calligraphy to such a degree that there was hardly any bare spot to be found (Jones, D. 1978). The strict geometry in these decorations was an expression of rationality and discipline. The absence of figures, animals, or other naturalistic images reflected the suppression of feelings and fantasy. Feelings are expressions of desires and instincts which govern the free will of the individual. The regal society needs to suppress the unrestrained free will of the individual in favor of the central control and authority, and therefore has to suppress expressions of feelings and fantasy. The endless repetition of regular geometric patterns is not only

²⁷. Troedsson (1964) has proposed a theory that the society evolves through cyclical processes of alternating expansion and concentration which is related to political and religious movements, and that these processes are reflected in the architecture. Despite important similarities, his theory is not in accordance with the cultural r/k-theory, for the reason among others that Troedsson connects decentralism (k) with expansion (r).

a symbolic suppression of individual difference, but also a symbol of regularity, diligence, and monotonous hard work.

Another important symbol in religious architecture is light. Light is a monotheistic symbol (Jones, D. 1978), and the conscious utilization of the effects of light and shadow in reliefs, stained-glass windows, etc. is widespread in churches, cathedrals, mosques and other monotheist buildings.

Besides the religious powers stand the secular powers with their palaces. These are just as ostentatious and richly embellished as religious buildings, but unlike the latter they have room for more excesses and amusements such as luxurious gardens with lakes and fountains which do not belong around religious buildings where asceticism and regularity is preached.

Architectural art has often been a subject of contemporary debate, and there is a notable connection between the controversies over architectural style and the general ideological and religious debates in a society (Kempers 1987, Clark 1976). The dutch sociologist Bram Kempers has studied monuments, great government buildings, and other monumental state art in Europe. The building of such monuments of greatness and power culminated in the european capitals in the middle of the 19th century and continued until the middle of the 20th century. A strong ideological resistance against imperialism grew up after the second world war which led to an almost complete cessation of the building of pompous state monuments. Modern art, which had been suppressed by the Nazis, flourished in the 1960'ies which for the part of architecture was expressed in a more simple and functionalistic style (Kempers 1987).

Even though government buildings and religious buildings are the most conspicuous architectural signs of regality, it is also possible to read the ideological movements in the style of private houses. The american historian Clifford Clark has documented how the religious and ideological ideas and norms of families and private life was reflected in the american architectural debate in the middle of the 19th century. The most religious rural families preferred, among the prevalent styles, a gothic revival style with marked upward pointing lines, rich ornamentation on the gables, and a perfect symmetry, whereas the more simple and functionalistic styles dominated in the cities. The buildings gradually

became more individualistic, whereas the home as a status symbol became also an expression of the personality of its owner. Haughty villa owners tried to outdo one another in curiosities which led to a random mixture of styles (Clark 1976).

11.7 Clothing

Dress and body adornment is something individual and personal which is more suited for expressing a personal identity than, for example, the home or other possessions. Attire as art and a means of communication can say a lot about the wearer: group belonging such as ethnicity, religion, or subculture, as well as personal facts such as sex, age, marital status, number of children, social status, wealth, etc. The dress can also express temporary events such as mourning, celebration, or seasons of the year (Delaporte 1980).

What is particularly interesting for the cultural r/k-theory is how hierarchic rank is signaled through the clothing. Many cultures and organizations have official rules saying that people of a certain rank are entitled to wear particular garments or marks so that everybody can see to which rank they belong, but unwritten rules are also very common (Joseph 1986, Devleeschouwer 1977).

People with high status and wealth can announce this by wearing expensive and ostentatious clothing and by renewing their clothes more often than necessary. They can also demonstrate that they do not need to work hard by keeping their clothes neat and clean and by wearing impractical clothes which curb the freedom of movement and therefore are unsuited for manual labor. Economist Thorsten Veblen has phrased this in the famous expression: *conspicuous consumption*, *conspicuous waste* and *conspicuous leisure* (Veblen 1899, cit. after Squire 1974).

An obvious way of signaling high status is by ornamentation: jewelry, patterns, gold threads, pleating, flounces, bows, puff sleeves, train, etc., etc. (Devleeschouwer 1977, Squire 1974). But ornamentation of the attire not only serves as a sign of wealth and high status, but also as the sign of a delicate fragility and helplessness, especially in women and small children (Kaiser 1985; Roberts, H. 1977). Women's dresses may therefore be much more decorated than men's in a society where women have lower status than men. Women who do not perform hard manual labor may show this by carrying a dress that restricts the

freedom of movement, such as a crinoline or corset (Kaiser 1985; Roberts, H. 1977). A similarly impractical and garnished dress may be found on high ranking men in societies where social status is inherited and where men of high status spend their life in passivity and idleness.

We may therefore conclude by saying that elaborately decorated clothing is found mostly in regal societies, but not necessarily on the persons who have the highest status. Not all regal cultures or groups can show embellished and richly ornamented clothing: some puritanical cultures or organizations have a dress which is as simple as possible.

Obviously, the dress can not only tell something about the person but also about the society in which he lives. Cultural currents are often reflected in the clothing fashions. European history, for example, shows a parallel evolution of styles within pictorial art, architecture, and clothing: The eccentric mannerism, the formalistic baroque, the somewhat more merry rococo, the rational neoclassicism, the impassioned romanticism are all styles which reflect the world view and view of human nature of their time (Squire 1974). Through many hundreds of years, social status and sex have been the most important messages to express through clothing, but since world war two these identity criteria have lost in importance and to a noticeable degree they have been replaced by other distinctions, which is a sign that the hierarchic system has lost some of its power in the democratization process (Delhay 1991).

Psychologist Dean Simonton claims that political processes can be read directly from women's fashion. There is a tendency that the waist becomes higher and wider in times of international war, whereas in times of peace it becomes narrower. When it comes to civil wars the tendency is reversed: here the waist becomes narrower than in times of peace. No explanation for these phenomena is given (Simonton 1977). According to cultural *r/k*-theory, international wars are connected with regality, whereas *intra*-national, or civil, wars are expressions of rebellion or disruption as a result of the beginning of kalyptization. If we follow this line of thought, then a narrow waist should be a kalyptic sign. This is, however, not in agreement with the claim of feminists that the tightly laced waist is oppressive towards women (Roberts, H. 1977).

A clear sign of regality is conformity and uniformity as is expressed through the uniforms of military and other organizations. Besides having obvious practical reasons, a uniform also suppresses individuality.

Individualistic dissent may be seen as small deviations from the prescribed uniform, as documented by Joseph (1986).

A more voluntary conformity is easy to find among modern businessmen. Suit and tie seems to be the preferred uniform in the business world. This discreet and conforming dress signals moderation and sobriety. A businessman with an economic responsibility will usually be reluctant to adopt a personal clothing style for fear that his dress will not be to the taste of his business connections and negotiating partners, and that such personal differences in taste may have economic consequences. This consideration has a selecting effect in the direction of conformity and body-alien impersonality.

The extreme opposite of the businessman's clothing style is the personal and individualistic clothing styles as seen in modern youth cultures and in particular on their musicians. Every musician in a rock band may have his own clothing style which is different from the others. The dress often accentuates and shows as much as possible of the body to make the musician a sex object and idol.

Various subcultures often develop their own clothing style and sometimes also their own music, dance, etc. In urban youth cultures this development may be incredibly rapid, and often there exists many different part-cultures each with their clothing fashion (Delaporte 1982, Cosgrove 1984). Some of these youth groups are kalyptic, rebellious, and antimilitarist - others are regal and racist. A group of psychologists have studied the connection between clothing style and personality among american teenagers. They found that young people who dressed in the so-called *greaser* style had the most conformist personality, whereas the *hippies* were the most individualistic. The connection was considerable and statistically significant (Gurel et.al. 1972).

A considerable cultural innovation often takes place in groups of young people with a low social status, after which the new fashion trends diffuse upwards through the social levels. The most kalyptic fashions of the early 1990'ies with worn jeans full of holes or asymmetric colorings on the clothes were inspired by the british punk wave with its consistent protest against all aesthetic norms and by the american teenage lower class urban black ghetto subcultures.

But the diffusion of fashion trends may also go the other way, from the high social strata to the lowest, especially in regal times. Underprivileged people may want to conceal their low status by imitating the style of the upper class which leads to an inflation of styles. The diffusion of fashion may go upwards, downwards, or horizontally in a process where individuals with the same social position influence one another to reach a common style through a collective selection process (Kaiser 1985, Blumer 1969).

11.8 Other arts

I have now gone through several branches of art, but the list is far from exhausted. Art forms like novels, fairy tales, poetry, theater and film may contain a complicated story and are therefore able to communicate a much more detailed message than, for example, music, dance, or sculpture. The interpretation of literature and acting is often quite straightforward. They may, for example, glorify the king or have an easily understandable moral. Art historian Robert Scheller has given some illustrative examples on how literature and art have functioned as propaganda for imperialism and crusades. This propaganda is not necessarily organized or coordinated, but may very well stem from the political and religious mentality of the time and from the artist's loyalty towards the powers (Scheller 1982).

Novels, films, etc. are often selected more for their button-pushing action than for their political or moral messages. The danger button is the most salient one: exciting movies have a lot of conflict, crime, disaster, and heroes that know how to avoid calamity. Next in importance is the sex button, although the amount of explicit sex may be limited by cultural norms.

Even though the audience knows that films and novels are fiction, it may still shape their perception of the world, especially in areas where they have no first-hand experience, for example about exotic cultures, police work, criminal court procedures, organized crime, or war.

12. PLAY, GAMES AND SPORT

12.1 Play

Play may seem a useless activity, but it has an important function. Through play children learn and develop their brain. Babies babble in order to learn to pronounce the sounds of the language, they shake their rattles or throw their dummies in order to train their motor functions, to understand how things move, and to explore the law of gravity. Bigger children play role games where they learn to understand and master the roles which are necessary in the daily life of adults. The importance of play for children's development is indicated by how much time and energy they spend on playing (Fagen 1981:272). Children may occasionally be conscious that they are learning, for example when practicing to catch a ball. But playing may very well be functional without the child being conscious of this function.

Playing may sometimes be quite risky. Boys, especially, love games involving speed, excitement, fighting, or daring acrobatics. These dangerous games have an important function which outweighs the risk: The child learns to understand dangerous situations and gets the chance to experiment with alternative responses. He thereby learns fighting techniques, techniques of controlled falling, evasive actions, strategy, and other skills which later in life may turn out to be of vital importance in a hazardous situation. It may be a question of life and death to be able to react speedily to a sudden danger. Intellectual knowledge is not sufficient here, because it takes too long to activate it from memory. A prompt reaction can only be achieved by learned reflexes, and these reflexes can only be learned through 'violent' games. Children learn to know the dangerous situations before they become real in the relatively protective atmosphere of play. This has been called *buffered learning* (Roberts & Sutton-Smith 1962, Sutton-Smith & Roberts 1970).

Play is far from unique to humans. Most mammals play, as do many birds (Fagen 1981). In most primate species it is common to see young females play mother towards infant conspecifics. They hereby learn how to treat baby monkeys, and this knowledge may be vital when they later get their own young (Lancaster 1971; Fairbanks 1990; Gould, L.

1992)²⁸. Observations of apes raised in captivity have shown that females who have had no opportunity of learning how to treat infants are unable to take care of their own young (Harlow & Harlow 1969). Similar experiments have obviously not been carried out with humans, but there is reason to believe that children's playing with dolls and playing mother towards smaller children has an equally vital function (Eibl-Eibesfeldt 1989:589ff).

The theory that play is a method of learning was formulated clearly by Karl Groos (1896, 1899) a hundred years ago, and the recognition that play can be educational is undoubtedly much older. However obvious this learning theory may seem, it is still disputed, and there are many alternative theories which space does not permit to be discussed here (Travick-Smith 1989, Smith & Syddall 1978, Bekoff 1976, Reilly 1974a).

Developmental psychologist Jean Piaget regards play as hardly more than an epiphenomenon to the cognitive processes of a child (Piaget 1945). Piaget sometimes criticizes, sometimes praises, the learning theory of Karl Groos. This inconsistency is concealed behind a high level of abstraction to such a degree that some authors cite Piaget for being a proponent of the learning theory, whereas many others cite him for the opposite. Piaget is traditionally considered one of the most important authorities on play theory alongside the culture historian Johan Huizinga. The latter may be said to turn the theory upside down. Where most others would say that children imitate the culture of adults in their play, Huizinga attempts throughout his book to prove that culture imitates play. He thereby sees play as fundamental to our entire culture with almost metaphysical importance (Huizinga 1938). His thinking is an example of the classical idealist philosophy and theology which opposes the rational and mechanistic conception of humans and emphasizes the autonomous and creative aspects of human nature (Gruneau 1983:24; Norbeck 1977).

Philosophy and science as such are also subjects of cultural selection, and not even the most reputable scientist is unaffected by the culture in which he lives. This not only applies to Huizinga, but also to Piaget. When reading Piaget's descriptions of the observations on which his theory is based, it is apparent that he yields to the preconception that

²⁸. This behavior may also have other functions in certain species, according to Tanaka (1989) and Stanford (1992).

everything which is pleasurable or funny is useless and a waste of time, whereas serious activities are useful. This preconception stems from puritanism - a regal philosophy which suppresses individual self-determination in favor of social control. One of the means of puritanism is to claim that any pleasurable act is useless or dangerous, so as to suppress the individual pursuit of pleasure. (I have explained the function of pleasure on p. 241).

Despite the fact that the books of Piaget and Huizinga are the most often cited works in play theory, it is a prevalent opinion within the areas of pedagogy, psychology, anthropology, and ethology, that play has an important learning function, and this theory is supported by several studies of children as well as by animal experiments (Weininger 1978, Reilly 1974b, Roberts & Sutton-Smith 1962, Sutton-Smith & Roberts 1970, Robinson 1978, Fagen 1981, Caro 1988, Corsaro & Tomlinson 1980, Rosenstiel 1977, Lancy 1977, Golomb & Cornelius 1977, Sylva 1977, Garvey 1977, Feitelson & Ross 1973, Dansky & Silverman 1973, Boulton & Smith 1992, Eibl-Eibesfeldt 1989, Fagen 1981, Oakley & Reynolds 1977).

A learning process which is genetically controlled is called *programmed learning* (Gould, J. & Marler 1987; Mayr 1974). Genetic programs are called *open* or *closed* depending on the flexibility of the learning process. Let me explain this difference with a few examples. Humans are not born with the ability to walk, but they are born with the ability to learn how to walk, and any normal child will sooner or later learn to walk. The genetic program not only gives the child the ability to learn, but also determines rather precisely *what* to learn. The ability to learn to walk is a closed genetic program. Another program, the ability to learn to talk, is much more open or flexible in the sense that it is not fixed to one particular language. The cultural differences in people's languages are much bigger than the differences in their way of walking. But the flexibility is not unlimited. If a couple of children are left to themselves without sufficient verbal stimulation from adults, then they will invent their own language containing nouns, verbs, etc. The communicative function of language is predetermined to a high degree.

Let us return to play as a learning process. Is this process controlled by an open or closed program? There are important differences between children's way of playing in different cultures, but there are also striking similarities, and children in different cultures go through the same

stages of development in their playing behavior (Seagoe 1970). The program has certain degrees of freedom, but also certain limitations. Children imitate the behavior of adults in their play, and this activity will therefore necessarily reflect cultural differences in behavior. But there are certain themes which are repeated in the playing behavior of children in widely different cultures, and some of the skills that children learn through play are quite superfluous for the culture in which they live. For example, children love to build caves although it is thousands of years ago that humans lived in caves. And even in the most peaceful societies children love to play war. War toys are popular despite parents' and teachers' disapproval. Themes like fighting, hunting, building huts, child care, and sexuality, are so universal in children's play that there is reason to believe that there are instincts or genetic programs behind these behavior forms and that these programs penetrate into the playing behavior.

Homo sapiens is the most flexible animal on Earth, and the ability to adapt to varying environments and ways of life is an important factor in the ecological success of the humans. But flexibility requires learning. A behavior which is controlled only by genes will always be robot-like and inflexible. The more flexible an animal is, the more time it must spend on learning the necessary behaviors while growing up. Humans therefore have an unusually long childhood compared with other animals. The more complicated the society, the more skills the children have to learn, and the longer the period of education.

This brings us back to the genetic *r/K*-theory (see p. 87). A genetic *r*-strategy is a strategy where each individual spends a maximum of resources on breeding as fast as possible and producing numerous offspring, but uses no energy on caring for or protecting its progeny. The opposite is a *K*-strategy, where each individual gets very few young, but spends a maximum of resources on giving each young the best possible conditions. The reproductive strategy of humans is a typical *K*-strategy. The long childhood requires that the parents spend a lot of energy on childcare and education. It has been observed that *K*-selected animals generally play more than *r*-selected animals, in perfect accordance with the *r/K*-theory (Fagen 1981:489).

There is a close connection between the genetic and the cultural *r/k*-dimension here. Humans in regal cultures get many children. The children are set to work from an early age, and also become able to take

care of themselves early. Not so in kalyptric cultures where large families are rare and where the children are cared for by the parents for many years. This difference is also reflected in the different attitudes towards play.

Ariel and Sever (1980) have compared children's play among bedouins and kibbutz children in Israel. The difference between these two cultures is enormous with regard to the treatment of children. Bedouin children get no formal education and are set to work in the household from an early age. The children have no toys, and any kind of play is unwelcome and sometimes punished severely. The kibbutz children, on the other hand, get twelve years of school education. They have lots of toys, their kindergartens are richly equipped, and the adults take considerable care of the children. Not surprisingly, the play of the kibbutz children is much more varied and imaginative than that of the bedouins (Ariel & Sever 1980). These observations are in accordance with the fact that the bedouin culture is much more regal than the kibbutz culture. There is no difference between the predictions of the genetic *r/K*-theory and the cultural *r/k*-theory here, but since the two populations are genetically related, it is concluded that the difference must be due to cultural factors.

It is obvious that children's play reflects the culture in which they live since playing is often an imitation of the adult world. David Lancy has studied children's play in Liberia and found that children learn the behavior patterns of adults in four ways: by watching the adults work, by imitating the activities of adults in their play, by helping the adults, and by direct instruction (Lancy 1977). In particular, children imitate what they have no access to do for real. In the imitating play, children learn the motor and cognitive aspects of those activities to which they have no access in reality. Observations in cultures where from an early age children are set to do housework, show that these children do not imitate housework in their play. There is no reason to play what you can do for real (Storey 1977, Ariel & Sever 1980). But the children imitate what they cannot easily obtain. A very common play theme among the bedouin children in Israel as well as among liberian children is imitation of motor vehicles. Cars and motorcycles are attractive to the children because they represent a rich and privileged way of life which few bedouins have a chance of achieving (Ariel & Sever 1980, Lancy 1977). These observations come from relatively primitive cultures which have contact with a more technologically and economically advanced culture

which may make them atypical because of the dramatic cultural contrasts.

Childishness and play are often associated with fantasy in our culture, but not all children are equally imaginative. Fantasy play is found in cultures which value flexibility, inventiveness and individual initiative, but not in cultures where everything is controlled by fixed systems and strict rules (Storey 1977, Ariel & Sever 1980, Feitelson 1977). There is therefore reason to assume that the function of fantasy play is to learn inventiveness and independent initiative.

Historical studies of the play of american children reveal that there have been considerable changes in the playing patterns during the twentieth century. Formalized and organized group games have dropped in popularity, and singing games have almost disappeared. Informal group activities like swimming, fishing, hunting, sailing, cycling, and roller skating have become more popular, probably because society has become less hierarchical and formalized (Sutton-Smith & Rosenberg 1961). The altered sex roles in the society are also reflected in the play. The difference between boys' play and girls' play has become smaller, but it is remarkable that it is the playing pattern of the girls that has approached that of the boys, whereas boys' play has not moved in the direction of girls' (Sutton-Smith & Rosenberg 1961).

12.2 Games

If you want to compare playing patterns in different cultures, then you may have to classify plays into categories. Caillois (1955) has defined four motifs in play and games: competition, games of chance, imitation, and the element of speed and excitement as is found for example in roller coasters and motor sport. These categories are hardly exhaustive, as you could add motifs like exploration, experimenting, fantasy and creativity. Another dimension in Caillois' classification is a graduation from spontaneous and improvised play to organized and regular playing, i.e. games. Games are easier to categorize and systematize than fantasy plays, imitation, and exploration plays, and it is therefore easier to make cross-cultural comparisons of games than of other kinds of play.

A particular classification system for games, introduced by John Roberts and his colleagues, distinguishes between whether the outcome of a

game is determined by the physical skills of the players, or of strategy, or pure randomness. These three motifs are connected with important aspects of child education and fundamental structural principles in the society, according to cross-cultural studies. Games based on physical skill are most prevalent in societies that attach importance to individual achievements, self-control, and control over the physical environment. Games of strategy represent social complexity, stratification, obedience, independence, symbolic rewards, and psychological control. Finally, games of chance are connected with religion and magic, and the belief that supernatural beings can be influenced through rituals. Apparently, the game patterns of both children and adults reflect sex, class, and cultural differences. The authors explain these observations partially with reference to the theory that the games symbolize intrapsychic conflicts, and partially by assuming that children learn social skills by using the game as a model (Roberts, Arth & Bush 1959; Roberts & Sutton-Smith 1962, 1966; Sutton-Smith, Roberts & Kozelka 1963; Sutton-Smith & Roberts 1970).

At the end of the 19th century, american children were playing various games of skill where the loser was punished. Interestingly, these games have disappeared in the modern society, and have been replaced by games where the winner is honored (Sutton-Smith & Rosenberg 1961). This reflects the fundamental principle in the modern capitalist society where economic rewards to skilful and efficient persons are more important as controlling means than punishment of the lazy and incompetent. It is also interesting to observe that solidaric countries, where competition has little importance, have games where no winner or loser is singled out, but where the process rather than the result is the important thing (Calhoun 1987:60. For specific examples see: Ager 1977, Rosenstiel 1977).

The theories of a connection between playing and social structure have gained wide recognition (Calhoun 1987) despite some criticism (Townshend 1980). Unfortunately, most anthropological studies of play have concentrated on games rather than unorganized play. This probably gives a bias since rule-governed games are more prevalent in societies controlled by complex rules than in societies where flexibility is important. Some of the studies do not distinguish between the games of children and the games of adults, although the latter may have other functions. Similar games may also have different functions in different societies (Lüschen 1970).

12.3 Sport

Sport is a form of game, played by children and adults alike, where the players train physical skills. The distribution of various sports in different countries can best be explained by the theory of culture centers from where new phenomena spread by diffusion (see p. 32).

In the mid 19th century, Great Britain was the leading nation in the world for industrialization and colonization. Britain was also a cultural center for sport. It was here that sports evolved into their modern form with their associations, rules, and competitions. Football or soccer, which was the most popular sport in Britain, spread in the late 19th century to several other countries, followed by cricket, hockey, tennis, rugby, golf, and track and field athletics (Stokvis 1989).

In Germany, gymnastics was part of the well organized educational system, and was promoted with the purpose of strengthening the physical and mental health of the population to the benefit of the industrial development. Gymnastics has spread to those countries which were within the german sphere of influence, in particular the Netherlands, Scandinavia, and Eastern Europe.

Sport in the USA underwent its own development in the 19th century rather independently of Europe. During the 1840's baseball and cricket, which was at least equally popular, were organized in sports associations which laid down the rules of the games. However, the anti-british atmosphere connected with the civil war made cricket less popular because it was regarded as english. But baseball, which was regarded as a typical american sport, soon became the most popular sport in the USA. In the late 1870's, american football was introduced as a variant of the english rugby. Prestigious universities like Yale and Harvard played an important role for the spreading of this game. Basketball and volleyball arose because there was a need for some more exciting activities to put into the already existing gyms. Team handball arose for the same reason in Germany (Stokvis 1989).

From these few cultural centers various sports have since spread far and wide to countries with very different cultures. British sports have spread as far as to Africa and South America, while the north american sports patterns have spread to Japan, France, and Australia (Stokvis 1989).

Various psychological theories have been proposed for explaining the difference between people's sports preferences in different countries. Arens (1978) and Duthie (1980) think that the marked division of labor in american football reflects the industrial society, whereas Calhoun (1987:232) notes the element of territorial war in this game, which he regards as symbolic of the conquest of America. Some researchers think that football is a typical urban sport whereas baseball belongs in the rural districts (Guttmann 1978, Wagner 1988). Such theories have the obvious weakness that they cannot explain why a sport like soccer is the most popular sport in cultures as different as Europe, Africa, and South America, while baseball is more popular in North America and Japan.

History shows that the distribution of sports depend more on political power structures and spheres of influence than on psychological and cultural preferences. Soccer has spread because of the influence of Britain as a leading colonial power. Baseball has spread because of american nationalism. American football has spread because it was played on prestigious US universities. It seems that diffusion is more important than selection for the distribution of sports, and several sociologists have remarked that sport is an autonomous phenomenon which is rather independent of art, religion, economy, or other cultural phenomena (Robins 1982, Bourdieu 1978, Nixon 1982, Lüschen 1967, Maheu 1962).

I would not claim, though, that no selection takes place at all. Comparing the american sports, it is easy to see that not all sports spread equally effectively. The japanese, for example, have accepted baseball but not american football. Basketball and volleyball have been well received by the europeans, whereas baseball is less popular in europe, and american football is very seldom played here. There are two possible explanations why europeans and japanese do not play american football. One possibility is that this game has been deselected because it is too violent (Stokvis 1989). The other possibility is that this game is complicated to learn and requires special equipment that is difficult to obtain, which makes a barrier against diffusion. If the diffusion barrier hypothesis is correct then the europeans would continue to play american football if they had learned it, but if psychological selection is at work here, then the europeans would loose the interest in american football even after having learned to play it. Which of the two possible

mechanisms is more influential here cannot be determined on the existing basis, but the two mechanisms are not mutually exclusive.

If we assume that sport, like other kinds of play, functions as a model for social phenomena or everyday doings, then it should be possible to find connections between sport preferences and social structure. Many sociologists have studied such connections. The relationship between sport and religion is discussed by Lüschen (1967) who notes that the interest in sports is higher among protestants than catholics, especially when it comes to individual sports (curiously enough, he does not mention the low sports activity in muslim countries). Lüschen explains this difference with reference to how much importance the different cultures attach to individual accomplishments, and he finds that competitive sports are more popular in societies where social status depends on individual performance (Lüschen 1967).

This is confirmed by historical studies. In the primitive societies of the past, bodily exercises took the form of rituals, and often with a religious meaning. In the modern society this has changed into a secular sport where competition, quantification, and records have a prominent importance (Guttman 1978; see also Ibrahim 1976). Critics of this characteristic claim that there are also examples of quantification and competition in ancient times, and that there are still rituals in modern sport (Carter & Krüger 1990, Eichberg 1986). Obviously, the technological evolution has had an important influence on sport. Just think of what the invention of vulcanized rubber has meant for balls and wheels, or what modern mass communication has meant for spectator sports and sports journalism (Betts 1953).

A very refined kind of sport was played in the 17th century. Geometrical precision and elaborate formations was a common feature in riding and fencing. This very aristocratic manner was a parallel to the minuets in dance and the baroque in art (Eichberg 1986).

It may seem natural to compare competitive sport with war. In discussions on sport you sometimes hear the hypothesis that sport provides an outlet for accumulated aggressions which otherwise may have found their expression in violence or war. The opposite of this catharsis theory is the hypothesis that aggressive behavior is learned, and that warlike sports therefore are more likely to be found in militant societies. In order to settle this theoretical debate, Richard Sipes has

analyzed the prevalence of war and sports in various societies. He found a positive correlation between war and war-like sports, and on this basis he rejects the catharsis theory in favor of a theory of cultural learning (Sipes 1973, 1975; Hietanen 1982). According to this theory, we would expect competitive sports to be more prevalent in regal than in kalyptic cultures, but it is hard to find support for this claim in modern societies. On the contrary, it is easy to find examples of kalyptic societies where competitive sports are popular and regal societies where they are not. There is therefore reason to assume that competitive sports not only serve as a model for war, but also as a model for economic competition. The reason for the discrepancy with Sipes' statistics may be that his studies are based solely on primitive societies where economic competition is unimportant or non-existent.

While it is difficult to find specific connections between sport and social structure, it is easier to see a connection between the social status of a person and his sporting preferences. Golf and tennis, for example, are typical upper class sports. In general, it has been observed that sports where the player increases his power and reach by means of a tool are mostly preferred by members of the higher social classes who are used to controlling big flows of resources without physical effort. Contact sports and team sports, on the other hand, are more popular among the working classes (Metheny 1968:72, Bourdieu 1978, Sack 1988, Lüschen 1969, Sibley 1988). These observations support the theory that sport functions as a model for the work situation of a human.

When speaking of the function of sport, you must also mention the conscious use of sport for political purposes. Sport has often been promoted with the purpose of raising the international prestige of a country, to improve the health of the population, to control and socialize, to create solidarity and common identity, or to create international understanding (Riordan 1974, 1982; Miracle 1980; Eichberg 1973; Brohm 1976; Hietanen 1982; Whitson 1984).

12.4 Comparison with other cultural phenomena

I have mentioned that playing and other learning mechanisms are necessary for the flexibility and adaptability of the human race. When a playing child imitates an adult, he learns the behavior of the adult, and we may say that a cultural transmission has taken place. Play may also be experimentation and exploration, where the child does not learn from

others but learns to know his physical environment. Or play may be an exercise where the child learns to control his own body. Thus only some of the playing activities of a child are part of the cultural transmission process.

As explained in the previous chapters, religion and art are important transmission channels for cultural information. Comparing play and art as media for cultural transmission, we find some fundamental differences which are worth mentioning. In music, dance, pictorial art, etc., the sender of the message plays an active role. The receiver may sit passively and watch and listen, or he may join in the dancing and singing in a mutual exchange of cultural information. But in the imitative play, the receiver of the information is always the most active part. The adult does not have to do anything special to be imitated by the child. The child may even watch the adult without the latter noticing it, and may later repeat in play what he has seen. The adult may be completely ignorant of what the child has learned from him. You may therefore say that imitative play has the character more of assimilation than communication. Another difference between art and play is that art is a self-contained bearer of information separate from the transmitted behavior, just like the genetic code. But by learning through watching and imitation there is no separate bearer of information.

The message transmitted through art is usually about social structures and interaction patterns. But in play, there is a much broader spectrum of knowledge that is acquired, including individual as well as social skills. Art, music, dance, etc. are therefore mostly social phenomena, whereas playing not always is so.

Returning to the discussion of programmed learning and its degrees of openness (see p. 224), you may say that playing has a significant degree of freedom in the sense that, through play, the child may learn a wide range of skills. On the other hand, playing is not so flexible when it comes to cultural differences. There are significant similarities between children's play in different cultures, and the child often learns skills that he has no need for in the culture in which he lives. Physical exercise or sport, in particular, represents a relatively closed program in this respect. Among the cultural phenomena I have studied, sport is the one that depends least on the social structure. Most sports are immediately intelligible and acceptable to anyone regardless of cultural background. This is the reason why sport is such an effective means of creating

international understanding and cooperation, and of integrating an inhomogeneous population.

As a contrast to play and sport stands *art* as a rather specific communication channel for social structure and interaction-patterns. Art is unsuited for transmitting anything other than cultural information, but has quite wide limits with respect to the possible social structures. Art therefore depends much more on culture than does sport, and this is also true of religious rituals, dogma and myths.

13. DISCUSSION AND CONCLUSION

Let us start by recapitulating the cultural selection model. Just like Darwin's theory of biological evolution, the theory of cultural selection has three basic elements: *innovation*, *reproduction*, and *selection*.

Innovation means any new cultural trait or idea, whether it has arisen by random chance, errors, play, experimentation, religious interpretation of dreams etc., or by intelligent problem solving and rational planning.

Reproduction or transmission is the process whereby people acquire the cultural traits of others. Possible mechanisms of cultural reproduction include imitation, socialization and teaching. The transmission does not only go from parents to children, the model allows any person to reproduce the behavior and ideas of anybody else.

The third basic element is selection. This is the most interesting of the three elements to study, because it is the selection that determines the direction of cultural evolution.

Many different selection mechanisms are at work in any society. The most direct form of selection is the conscious choice by each person about which of the known behavior patterns he or she wants to acquire, and which forms he does not want to incorporate into his repertoire. The conscious selection may also take place at higher levels where the leader of a society makes a choice for his subordinates.

Besides the more or less intelligent choices exercised by humans, a lot of 'automatic' selection mechanisms also exist, of which the individual human is not conscious or is unable to influence. Let me mention some of the most important of these mechanisms:

- People with certain life-styles or attitudes get more children on average than others, and if these life-styles are transmitted to the children then they are likely to spread more than other forms.
- Societies with certain religions have higher chances of winning wars and conquering new land than others, and consequently these religions are likely to spread (see p. 118ff.).

- People with certain ideas or behavior patterns have higher chances than others of becoming leaders, teachers, or idols, and thereby transmitting their behavior patterns to a high number of cultural descendants (see p. 70).
- People who display success or prestige get imitated more than others. This also applies to traits which do not contribute to their success or prestige (see p. 70).
- Economic and other forms of competition may have unintended side effects (see p. 134 and 160).
- A lot of choices and decisions are made in the unconscious mind of humans. Some of these choices are what I have characterized as vicarious selection as, for example, the phenomenon that people have a tendency towards authoritarianism when their society or group is threatened (see p. 98).
- Certain stories or discourses have a particularly high propensity for being told and passed on because they appeal to certain feelings, because they are suited for working through psychological conflicts, because they serve as positive or negative identification models, or because alternative discourses are hindered by cultural taboos or by incompatibility with existing preconceptions. This selection is independent of whether the stories are true or not (see p. 146, 153 and 176).

The unconscious and 'automatic' selection mechanisms are particularly interesting to study because they are not planned and their consequences are not consciously intended or foreseen. The study of such mechanisms can throw light on many societal phenomena which hitherto have been inexplicable.

13.1 Cultural r/k-selection

Most of the previously published models for cultural selection have focused on *mechanisms*. Unfortunately, there are often so many different mechanisms working in parallel and so many unknown parameters that it is impossible to set up a useful mathematical model. I have therefore concentrated on another approach, namely cultural selection criteria. If it is possible to identify a general fitness measure or

selection criterion for a specific cultural system, then it will also be possible to determine the direction of the cultural evolution (but not its speed) even if the selection mechanisms are not known in detail. This is the rationale behind a new model for cultural selection which I have introduced. I have called this model *cultural r/k-selection* because of certain theoretical similarities with the known biological r/K-selection model, which also is based on fitness measures rather than on mechanisms.

The balance between internal and external conflicts in a well-defined society or group is important for the cultural r/k-theory. A society which is marked by severe external conflicts will have to spend much of its resources on strengthening its position in these conflicts. A society which is not capable of this will lose the war to neighboring societies and thereby be deselected in the sense that its cultural characteristics will disappear.

I have defined a *regal* society as a society which allocates a high proportion of its resources to the strengthening of its position in external conflicts. A regal society gives considerations for the community a higher priority than considerations for the individual. Its policy is characterized by a central hierarchical government, strict discipline, uniformity, and a high birth-rate. The ideology, religion, morals, rituals, and art of a regal society will develop in a direction which supports this policy and form of organization.

The opposite is a *kalyptic* society where the external conflicts are minimal and unimportant, and where more consideration is given to the solution of internal conflicts and to making the individual members of the society happy. The obvious example is a society on an isolated island. The welfare of the individuals here is given more importance than the safety of the community, and the population will not accept that the society makes demands on such a high proportion of the resources and on the freedom of the individual as would be necessary in the case of war or threat of war. The kalyptic society is characterized by tolerance, individualism, freedom, and little or no population growth. The beliefs, rituals, art, etc. of a kalyptic society will evolve in a direction which supports these values.

The theory says that a society will evolve in the regal direction if it has the possibility of conquering territory from a weaker neighboring society,

or if it has a risk of losing territory to a militant neighboring society. Contrarily, evolution will go in the kalyptic direction if wars or massive migrations are perceived as unlikely.

You may imagine a continuous r/k -scale where the most regal cultures are placed at one end of the scale and the most kalyptic cultures at the opposite end. This scale may be used for classifying entire cultures as well as subcultures and single culture elements, such as an ideology or a piece of art. But there is reason to warn that this scale is nothing but an abstract construction, and it is hardly possible to assign absolute numbers to the points on the scale. For example, it would not be very sensible to compare the r/k -value of a primitive hunter-gatherer culture with a modern urban culture. It makes more sense to compare the r/k -status of, for example, two different political systems, two religions, or two genres of art.

Cultures placed around the middle of the cultural r/k -scale may be called solidaric. In a solidaric society, much importance is attached to collaboration and community, but the collaboration is based more on voluntariness and mutual advantage than on compulsion and central government. Of course, it is a simplification to claim that solidarity is always highest at the middle of the r/k -scale. If you want a more precise description, then you may define solidarity versus individualism as an independent cultural dimension.

The cultural r/k -scale is not a universal measure for cultural evolution, but only one among many dimensions in the social structure, controlled by cultural selection. You may choose to study other dimensions, such as ecological niche, flexibility versus specific adaptation, conservatism versus innovativism, size of political units, technological complexity, economic structure, division of labor, the relationship between the sexes, etc. I have chosen to concentrate on the r/k -dimension because this factor seems to permeate almost all aspects of cultural life. This makes it possible to disclose connections between different social phenomena that hitherto have been regarded as independent of each other. The cultural r/k -theory turns out to be useful for explaining many phenomena within politics, ideology, religion, art, and sexual behavior - including phenomena which hitherto have been difficult to explain. It is also possible that the theory can be used for predicting future political developments or for steering the social evolution in a certain direction (more about this in chapter 14).

Among the cultural phenomena I have studied, the one that depends least on the *r/k*-factors is sport, and the ones that most clearly reflect the regal or kalyptic values in a society are art forms such as music and pictorial art. A number of characteristics of regal and kalyptic cultural phenomena are summarily presented in table 2 page 102.

13.2 Cultural transmission media

On page 77 I have described why the cultural evolution is much faster than the genetic evolution, and how the cultural mechanism makes possible the evolution of much more complex structures than that which the genetic evolution alone can achieve. The human capacity for culture is therefore a highly effective *metaadaptation*, i.e. a trait which facilitates the evolution of other traits. The evolutionary advantage that the human race has gained over other animals, thanks to this metaadaptation, is so enormous that it more than compensates for the considerable amount of resources spent on the establishment of an effective cultural transmission mechanism - or rather, several cultural transmission mechanisms. As explained in the preceding chapters, cultural traits are transmitted through several parallel channels including imitation, play, socialization, education, religious rituals, and most surprisingly: through art.

I have assumed that art is a communication medium for social instructions and that this communication is mainly unconscious to the sender as well as to the receiver. This is the most important function of art and the ultimate reason why humans have evolved a propensity for producing and consuming art. I am defining art to include music, song, dance, tales, theater, pictures, architecture, body decoration, etc. It may occasionally be difficult to distinguish between art and rituals, but this distinction is not important here since these two cultural phenomena often have the same function.

Art is a markedly social phenomenon, and the instructions transmitted through art are first and foremost instructions about the social structure. The position of the society on the cultural *r/k*-scale is a particularly important piece of information in this respect and is therefore reflected in almost all branches of art.

It is of vital importance for the survival of a social group in competition with neighboring groups that it is able to adjust itself to the optimal *r/k*-

value as fast as possible (see p. 98). It is therefore necessary to have a mechanism which makes it possible to find the optimal r/k -value and transmit this value to all members of the group. The optimal r/k -value cannot be decided by the leader alone because he would have an egoistic interest in making the group more regal. What is needed here is a kind of compromise-seeking negotiation process where every member of the society gives his contribution. I have proposed that the exchange of art is indeed such a negotiation process, and that every individual expresses his or her opinion about the social structure through the personal aesthetic taste. The communal singing, dancing, etc. in a primitive tribe makes up a compromise between the aesthetic tastes of the individual members, and thereby represents the best possible estimate of the optimal social structure. The r/k -value is probably only one of the many dimensions of social structure which may be determined in this way. This negotiation mechanism is comparable to a decision process which Kummer has observed in a group of baboons when 'discussing' by means of movements where to go on a foraging trip (see p. 190).

The reason why I am drawing a comparison with apes here is that I regard this art-mechanism as evolutionary very old. At least older than spoken language. Chimpanzees and other animals do make dance-like scenes and drumming sounds by beating their belly or other objects (see p. 190). Observations of baboons indicate that they have a mechanism for regulating their social structure in order to adapt to changing ecological conditions (see p. 139). Similar mechanisms in humans may originally have evolved as a means for adapting to the *genetic* r/K -dimension, or other parameters of importance for the social structure. This mechanism may later have been further developed to also regulate the *cultural* r/k -dimension.

Various sciences have produced theories about community spirit, national character, collective conscience, the collective unconscious, or other expressions that the members of a society have certain mental structures in common. Such collective psychological phenomena imply the existence of a transmission medium which can communicate mental structures from one human to another. If we reject the possibility that the genes alone can be responsible for this transmission²⁹, then there is

²⁹ . In his theory of the collective unconscious, psychoanalyst C.G. Jung assumed that it was innate (Jung 1969). See p. 193.

reason to assume that art and rituals contribute to such a cultural transmission.

13.3 The pleasure principle

Having attributed a social function to art, we also have found an ethological explanation for the aesthetic taste of humans. Any human who exercises his aesthetic taste by producing art or by choosing between existing alternative pieces of art, thereby unconsciously expresses a message about the social structure as he perceives it or as he wants it to be. This innate ability is part of the human capacity for culture.

It is characteristic of drives or instincts³⁰, that they express themselves by means of pleasure and pain. You may say that the various pleasure-feelings are the psychological manifestations or driving forces of the genes or instincts. Various instincts are expressed in various kinds of pleasure-feelings which we have given different names. The pleasure of eating something nutritious is expressed as: "*It tastes good*". The unpleasure of eating something poisonous is called: "*It tastes bad*". The pain of bodily injury is called: "*It hurts*". The pleasure of sex is called: "*love*" or "*lust*". The discomfort of missing social company is experienced as "*loneliness*". Children's desire to play is expressed as "*It is fun*", etc. etc. Many of the things that we do every day are controlled by inner desires or feelings of pleasure and pain. And behind all these desires and feelings lie the genetic instincts which impel us to do exactly these things.

Recent investigations indicate that the aesthetic preference of humans for beautiful landscapes also has an evolutionary biology explanation. Those landscapes which are perceived as most beautiful are exactly those areas which are most suited as habitats for primitive man (Orians & Heerwagen 1992; Kaplan, S. 1992). Beauty is not an objective characteristic of an object, but lies in the eye of the beholder. Or, as evolutionary psychologists say: beauty is in the adaptation of the beholder. The same is the case when a potential sexual partner or a piece of music is perceived as beautiful. The perception of beauty is a

³⁰ . See note 21 p. 190.

pleasure-feeling which represents an instinctive preference, the ultimate function of which we may not be conscious about.

13.4 Are we slaves of the culture?

Some biologists have provocatively characterized genes as selfish beings having as their sole aim to reproduce themselves, and the body as a machine which only serves as a means for the reproduction of its genes (Dawkins 1976). Using the same argument you may regard cultural phenomena, or their information carriers (memes), as parasites or viruses using the humans as helpless tools for their own reproduction. This metaphor has been criticized with the argument that humans control the cultural evolution by rational exercise of their free will. As I have made evident throughout this book, neither of these opposite standpoints represents the whole truth. The interesting thing is that these two opposing statements, when pinned down to mathematics, lead to exactly the same formula. In fact it is the same phenomenon viewed from different angles: a reductionist biological and an idealist anthropocentric viewing angle, respectively. Many people have a psychological resistance against seeing human phenomena from the biological angle because, in their worldview, humans are conceived as sublime beings exercising a free will, rather than robots controlled by biological processes and random external influences (see p. 9).

There is no doubt that humans often make intelligent and advantageous choices, and the progress of science has made the possibilities for intelligent choices still bigger. On the other hand, we have seen many examples of selections which are unconscious or which have unintended consequences. Unconscious choices are very often rationalized so that people believe that they have made a rational choice (Visser 1994).

Humans are very susceptible to indoctrination and have a pronounced ability to internalize a religion or ideology without being conscious of the choices they make or the consequences thereof. If you ask a deeply religious person why he believes in religion *A* and not religion *B*, then he will probably answer that *A* is the only true religion, or he may say that his parents have taught him so. It is very unlikely that you will get the answer that *A* is the religion which is best adapted to the surroundings in which he lives. The selection of religious dogma is seldom based on a conscious evaluation of the consequences for the individual or for the society as a whole.

Our political, moral, and religious views are controlled to a significant degree by factors of which we are not conscious. One such factor, which is particularly important for the r/k-theory, is the phenomenon that people become authoritarian when their society is in crisis (see p. 97). One of the most irrational products of authoritarianism is witch-hunts (see p. 149). No matter how irrational a witch-hunt is, it may still be functional in the sense that it contributes to the preservation of the existing social structure. Whether this structure is also the optimal for the population (measured in life-quality, fitness, or whatever criterion) is still an open question. Undeniably, a witch-hunt has considerable costs in the way that innocent people are persecuted and punished. The witch-hunts in early modern Europe lasted for several hundred years, and similar phenomena are still evident today (see p. 149ff. and 185). This indicates that humans are not always as rational as they believe themselves.

Even a perfectly conscious choice may have negative consequences. Consider, for example, when fear of war between two countries leads to an arms race which drains both countries of resources and threatens with total destruction. Even though both countries understand the mechanism behind this arms race and its negative consequences, they are unable to stop it as long as mutual trust cannot be established.

Drug addiction is another well known example of how wide a parasitic phenomenon may spread and how difficult it is to stop it despite the most intelligent efforts.

Of course these examples belong to the extremes, and humans are generally becoming better and better at making intelligent and beneficial choices. But we are still far less rational than we want to believe, and the irrational or unconscious choices are the most interesting to study because of their unintended consequences. This is where the cultural selection theory has its greatest utility because it is able to throw light on unplanned phenomena which hitherto have been inexplicable.

13.5 Testability and sources of error

In this book I have proposed several theories and hypotheses, but how tenable are they? Can they be verified?

The fundamental theory is that cultural evolution involves innovation, reproduction, and selection. There are no problems with this formulation: It is obvious; it has been known for more than a hundred years; and it has been examined and verified by numerous examples throughout this time. There may be questions about the relative importance of various forms of selection, but it is beyond doubt that selection is taking place.

Next we have to evaluate the theory of cultural r/k-selection, i.e. the claim that external conflicts can influence the social organization, ideology, religion, etc. of a society in a particular direction, which I have called *regal*, and that the absence of such conflicts or threats will make the evolution go in the opposite direction, which I have defined as *kalyptic*. The possibility of proving such a theory is limited by the difficulties of making experiments with humans. Experimenting with individuals would not suffice. We are talking about groups comprising hundreds or thousands of people and the experiments have to span several generations in order to prove the cultural r/k-theory. Such a giant experiment is totally impossible to carry out, not only for practical and economic reasons, but obviously also for ethical reasons. Animal experiments are a theoretical possibility, but those animals which might be suitable, for example baboons, have such a low degree of culture that the results would tell very little about human cultural evolution.

The only realistic possibility for supporting the cultural r/k-theory is therefore *natural experiments*, i.e. the study of events which already have taken place or which take place whether we study them or not. Human history contains an immensely rich source of events suitable for this purpose, and I have already mentioned several historical courses of events which confirm the r/k-theory. Numerous other historical events and epochs may be taken up and investigated in order to evaluate the r/k-theory. Here is enough work for keeping a bunch of historians occupied for many years. The biggest problem with natural experiments is that there always will be confounding factors for which it is difficult to correct. This is a general problem encountered with any social theory. But in the present case, the correlations are so strong and the quantity of data so big that the possibilities for testing this theory are much better than for many other social theories. The reader may already have relevant examples in mind from his historical and social knowledge. Another way of testing the cultural r/k theory is to make predictions about the future based on the theory and see if the predictions come

true. In fact, the attractiveness of this theory lies exactly in its usefulness for making predictions.

While the cultural r/k-theory is reasonably well founded and testable, we have more serious problems with the most daring part of my theory: the claim that art has a social function which for most people is unconscious. It is obviously not possible to provide a definitive proof or disproof for the existence of a phenomenon which takes place in the unconscious, which is hypothesized to have arisen by biological evolution millions of years ago, and which today has been partially superseded by more effective mechanisms. We have to be satisfied with statistical indications and let the hypothesis stand until somebody else comes up with a better one.

It is a frequently used argument in ethological research that if a phenomenon exists then, according to darwinism, it must have an adaptive function. The weakness of this argument is that non-adaptive characters will always appear with a certain low frequency; that fitness-neutral characters may arise purely by random; that the evolution of adaptive traits may have side effects in the form of non-functional epiphenomena; and that traits which earlier in evolutionary history have been adaptive may survive for a very long time although altered conditions have caused them no longer to be functional. The more elaborate and complex a phenomenon seems, and the more resources it makes demands upon, the more difficult it is to explain it away as a random dysfunction, and the higher is the likelihood that the phenomenon has arisen by a selection process.

And this is exactly the case with the human production of music, dance, and other forms of art. The philosophical claim that art is entertained for its own sake does not make evolutionary sense because the peculiar human affection for art would never have evolved or would have been deselected long ago if it were nothing but a dysfunctional waste of resources. The various forms of art are so elaborate and well developed and claim such a high proportion of human time and energy in all known societies that it cannot possibly be rejected as a non-functional epiphenomenon. Art must therefore necessarily have, or have had, an adaptive function. That this function has something to do with communication seems obvious, and most scholars agree that art is a form of communication. But there is far from agreement about what the communicated message is. The claim that art contains information about the

social structure is based on statistical analyses of the correlation between social structure and artistic style. These statistics prove beyond doubt that there is a connection between art and social structure, but statistics cannot distinguish between cause and effect. So in principle we cannot know whether it is art that influences society or society that shapes the art. Most probably both factors influence each other to a certain degree, but my hypothesis that art may have functioned as a medium for 'negotiating' the social structure cannot be verified by these kinds of statistics. The comparison with the way baboons 'negotiate' where to go for foraging (see p. 190) only proves that such a function is biologically possible, not that it exists in humans.

Above (p. 241) I have described the pleasure principle which says that any feeling of pleasure or pain is related to an instinct or genetically determined function. Since art gives rise to an aesthetic pleasure it must, according to this principle, be guided at least partially by genetically determined inclinations. But we must be careful to avoid a circular argument here: even though the connection between pleasure and instinct is well-known, I would not have formulated it as categorically as here if I did not already believe that art, play, and other pleasurable activities are functional.

Another critical problem is the question of the phylogenetic age of art. I have assumed that basic forms of art - especially music and dance - are considerably older than spoken language. In other words, that art is a more primitive form of communication which has survived beside the spoken language. Of course, such a theory is very difficult to prove. Our ancestors may have danced to primitive rhythm instruments made of wood millions of years ago without leaving any archaeological traces. The theory is based on comparison with the communication forms of other animals, and on the fact that it is very improbable that the primitive form of communication that art comprises would have arisen when a much more advanced and less energy-consuming form of communication already existed, i.e. the spoken language. On the other hand, it is evident that art has developed further and still develops. Such a further evolution has been possible with little or no genetic changes and does therefore not contradict the assumption that art basically is a survival from a more primitive evolutionary stage. You may discuss whether art is a peculiar appendix which has totally lost its function, or whether it still has an importance in modern society. Undeniably, many modern people do attach much importance to art, and when we consider how many

resources modern man spends on music, dance, film, theater, painting, monuments, architecture, body adornment, etc. etc., then there can be little doubt that art still is an important communication form, although disproportionately energy-demanding.

If we want a more precise description of *what* is communicated through a particular piece of art, then we are really on shaky ground, because most of the communication is unconscious to sender as well as to receiver. The study of unconscious phenomena is the domain of psychoanalysis which, as a science, often has to resort to intuition and guesswork. Rigorous testing is not possible within this discipline. Many psychoanalysts therefore have totally ignored the need for testing their theories, which has immensely harmed the entire science of psychoanalysis. In my opinion, this problem has not been taken seriously enough by the psychoanalytical school, and it is therefore with great regret that, in this book, I have had to contribute to the intuitive guessing. Since psychoanalytical science has not developed any general and reliable methods of verification, I have had to resort to other disciplines - most importantly statistical analysis of the connection between social structure and artistic style.

The r/k-status of a culture has influence on many areas of social and private life, including religion, ideology, art, sexual behavior, etc. Changes in the r/k-status of a society are sometimes reflected in these areas faster than you would expect from the immediately obvious selection mechanisms. I have therefore assumed the existence of vicarious selection mechanisms of a psychological nature (see p. 96 and 174). The effects of these psychological mechanisms are that a person who perceives his life situation, and in particular the situation of his group, as threatened and insecure will have a tendency to submit to a strong leader and strict rules of living. In other words, he will develop what social psychologists call an authoritarian personality. According to my theory, this psychological condition not only influences the political attitude of a person, but also his preferences in art and his sexual morals. It is possible to produce statistics which show a connection between the political situation in which people live and their aesthetic taste, sexual behavior, etc., but even if such a statistic can prove that there is a connection, it cannot say anything about the mechanisms behind this connection. A formal statistical proof would require a controlled double-blind experiment as is common in medical research,

but of course such an experiment is as impossible in this connection as it is in other areas of social psychology.

Sources of error

I want to draw attention to certain pitfalls and sources of error for those who might want to work further with the cultural r/k-theory. When using archaeological and art-historical sources, there is a systematic bias of which it is important to be aware: regal cultures generally produce big, sumptuous and ostentatious artifacts made of durable materials, whereas kalyptic cultures usually produce small and simple artifacts made of perishable materials. Therefore, the relics of regal cultures have always attracted more historical attention, while the products of kalyptic cultures either have perished or been overlooked.

When evaluating the r/k-level of a culture you must never rely on a single indicator. A reliable evaluation requires the examination of several factors, such as religion, political and military systems, social stratification, criminal law, human rights, population growth, education, art, sexual morals, suicide statistics, etc. In case of ambiguity or disagreement between these factors, a closer examination is needed. Each of these factors may have sources of error when used as r/k-indicators:

In the case of religion, two countries may formally have the same religion while the population in one country is much more orthodox than that of the other. The political system of a country may not be in accordance with the mentality of the population if the system has been forced upon the country from outside. As an example I can mention the state of Czechoslovakia which had a fairly regal political system forced upon it by the Soviet Union, while beneath the surface the population proved to be quite kalyptic.

Factors like military structure, social stratification, criminal law, and human rights, not only depend on the r/k-level of a society, but also on its general technological, economic, and political levels of development.

The population growth of a country may be considerably larger than expected from its r/k-level if the political and social situations are chaotic or if economic factors motivate a high production of children.

Using art as an r/k-indicator, one must acknowledge that there may be a considerable discrepancy between the official and state-subsidized high

culture which a country proudly presents to the outside world, but which in reality is only cultivated by a small snobbish elite, and, on the other side, the popular music and films which are preferred by the majority of the population. Evaluating the r/k-information of a specific piece of art will always be a subjective judgement, and there are many possibilities for misinterpretation and overinterpretation. Speaking of art, there is a peculiar asymmetry between regal and kalyptic cultures to which it is important to pay attention: kalyptic cultures are tolerant of regal art, while regal cultures are intolerant of kalyptic art. Regal art may therefore be found in kalyptic cultures because of inertia and lack of inventiveness (see p. 197), because of historical and ethnographical interest, or the regal style may be caricatured in a parody with an ironical distance to the style being imitated.

The sexual morals may be a useful r/k-indicator because they can be measured more precisely than art for example, but it is worth noting that the sexual legislation of a country is no reliable measure of the morals that are actually enforced. The legislation in this area is often applied arbitrarily or not followed at all. This is particularly true in former european colonies where the laws in this area are survivals from the colonial rule.

13.6 Explanatory power

While there are aspects of the cultural r/k-theory which are difficult to verify, there is another aspect which makes the theory very attractive, and that is its impressive explanatory power. I have already shown how the r/k-theory may be applied within widely different areas of social science and historical research. This theory can explain such diverse phenomena as the fall of Rome, renaissance witch-hunts, the emergence of rock music in the late Soviet Union, and the resistance against pornography in the USA.

I expect that the theory may be advantageously applied within widely different branches of science, including sociobiology, anthropology, archaeology, political history, art history, sociology of culture, sociology of religion, social psychology, sexology, conflict- and peace research, and futurology. Obviously, it would be quite impossible for me alone to work through all these areas in order to test the applicability of the cultural r/k-theory. And besides, I do not have the necessary expert knowledge. I therefore hope that this book has inspired scientists trained

in some of these disciplines to test the applicability of cultural selection theory within their special field of expertise. I have sketched how it can be done and I am now inviting others to work on within this new paradigm.

14. THE FUTURE

It seems fairly obvious that cultural selection theory and *r/k*-theory has potential applications not only for explaining and predicting the development of a culture, but also for guiding the development in a certain direction. The political consequences of this recognition are so far-reaching that we have to discuss them. In order to avoid compromising the scientific objectivity, I have limited the political discussion to this final chapter.

Generally speaking, we have to analyze the selective forces that shape society and decide which forces lead in a desirable direction and which forces require intervention in order to avoid dangerous developments. A few examples:

Proponents of economic liberalism argue that free competition is the best guarantee of low prices and high quality of all commodities. I agree with this statement to the degree that consumers have the necessary information for making rational choices and are not brain-washed by advertisements. Unfortunately, leaving everything to the reign of the free market forces does not guarantee welfare and human happiness. Many considerations of importance to the common good are left uncontrolled by the selective forces of a free market economy. For example pollution and the exploitation of scarce natural resources. Intervention and regulation is necessary for protecting those considerations that are not automatically controlled by the free forces.

A similar problem exists with democracy. Free elections is the best guarantee against tyranny and political instability, provided that the voters have free access to reliable information about social and political issues. This is the reason why a free press is considered so important in democratic society. Unfortunately, the press is not free. It is controlled by the merciless selective forces of a free market. As explained in chapter 9, the competition for readers and for advertisers favors entertainment and button pushing stories rather than truth, relevance, and detailed analysis of controversial issues. The failure of democracy as we know it! Some kind of intervention is certainly needed.

This chapter discusses some important areas where intervention is needed in order to guide selection in a favorable direction.

14.1 Security policy

A kalyptic society has obvious advantages compared to a regal one. First of all, it gives more freedom and security to the individual. But a very kalyptic country can hardly exist if the surrounding countries are regal. Peace and freedom can only persist if all countries are developing in a kalyptic direction. It would therefore be desirable for the sake of world peace to influence all countries in the kalyptic direction. This may sound utopian, but in fact such a process is already going on. The colonial times are over. The superpowers have reached the limits for their expansion and are now in the process of kalyptization. You may fear that new regal empires will grow up, as has happened innumerable times before in history, but today we have a possibility, which has not existed before, for stopping such aggressions, and that is the effort that the United Nations and other international organizations are making for preserving peace and stopping any attempts at imperialism and aggression. The more effective this peace-keeping effort is, the smaller is the likelihood of new wars. And without the risk of war, every country will be likely to evolve in the kalyptic direction.

It is important to realize that such a peace-keeping effort will only work if it is managed by an international organization. No superpower or world government would be able to fulfill this function without detrimental selection processes jeopardizing the stability of the construction. Only an international organization can ensure peace and the stability of national borders.

Such an organization must, of necessity, have military resources contributed by the member countries at its disposal. The regality of such a 'world police' is a dilemma. If it is too kalyptic it will be ineffective, and if too regal it would provoke revolts or cause a regalization of the countries in which it intervenes. In order to avoid escalating the regality it would often be more appropriate to apply economic rather than military sanctions against an aggressor. Such economic sanctions have already proven quite effective in a number of cases.

The regality of the armed forces may also be a dilemma at the national level. In order for a kalyptic country to be able to defend itself against more regal aggressors, it must necessarily have a military defense force which is more regal than the country in general. This may give rise to various conflicts. Soldiers who have received a kalyptic upbringing may

have problems accepting the regal ideology and discipline that the effectiveness of the military system necessitates. Furthermore, disharmony may arise between army and government, and in the worst case there may be the risk of a military coup.

Stabilizing the borders between nations is probably the most effective means towards global kalyptization, but there are also other possibilities for influencing a country in the kalyptic direction. Of considerable importance in this respect is the human rights movement. Human rights ideology is one of the most effective weapons of kalypticism. Democracy, freedom of speech, freedom of conscience, freedom of association, artistic freedom, fair trial, etc. are principles which effectively limit the possibilities for regal regimes to control the population. Experience shows that the human rights are best secured when monitored by international organizations such as the European Human Rights Commission and Amnesty International, rather than national organs. A national court will always be less objective than an international organization when the legal principles of the country itself are being criticized. History shows that national courts often are compromised for psychological reasons in cases of moral panic and witch-hunts. It is characteristic for a moral panic that those who are most involved in it are unable to see it (see p. 149).

14.2 Population policy

The Earth is overpopulated, and the exponential growth of the population is the greatest threat to world peace and ecological stability. It is therefore absolutely necessary to put effort into controlling the population growth in those countries where it is highest. Compulsory birth control, as we are seeing in China, is a theoretical possibility, but in many cases it will be extremely difficult to carry out. We therefore have to consider other possibilities for limiting the birth rate.

A kalyptization will automatically lead to a decrease in the birth rate, and is therefore desirable for this reason also. As mentioned on p. 136 there is also another mechanism which may reduce population growth, and that is what has been called prestige-giving resources. One such resource is education. If education is the road to status and prestige, then parents will be inclined to have few children and give these children a good education rather than raising many children for whom they cannot afford to provide during a long education. Furthermore, people

will get children at an older age if their own education and career has higher priority. This also reduces the growth rate. A policy which makes education attractive and available to everybody will therefore limit the population growth effectively.

Economic incentives also influence the decision to have children. In societies where children are set to work at an early age it is economically attractive to have many children. It may therefore be necessary to introduce restrictions against child labor in order to reduce the birth-rate. Likewise, it is necessary for society to guarantee the social and economic security of old and sick people in order to avoid the necessity of having children to secure provision for one's old age.

Poverty may, in itself, increase population growth. People who have money may very likely limit the number of their children in order to avoid dividing their wealth (see p. 137). But those who have nothing, the extremely poor, have no riches to divide and may therefore be more inclined to choose an r-strategy. In other words: they will have many children even though they cannot provide for them. We already know the result: slums, famine, and high infant mortality. Even though the poor developing countries are not among the most regal in the world, we cannot ignore the risk of war caused by overpopulation. In order to avoid this we have to set in with considerable effort to create an effective population policy, social policy, and education policy in these countries.

Evidently, in cases of famine or war, people do not take long-term ecological considerations into account. If we leave it to war, famine and epidemics to control the world population, then the ecological resources will be exhausted and it will be impossible to limit the pollution. A kalyptic population policy is therefore also necessary for ecological reasons.

14.3 Immigration policy

Next to war, immigration from regal cultures is the greatest threat against the kalypticity of a society. Massive and homogenous immigration is likely to lead to ghettoization and regalization, whereas a limited and inhomogeneous immigration may lead to kalyptization (see p. 132). It may be quite difficult for a kalyptic country to refuse refugees from a regal area devastated by war. Hospitality is a natural part of the mentality of a kalyptic society, and the miserable fate of the individual refugee makes a greater psychological impression than the abstract

consideration for the receiving country's culture. But, in the long run, a liberal immigration policy is likely to lead to xenophobia and regality, as we see all too clearly in Europe today.

Rather than having a liberal immigration policy, the kalyptic countries need to intervene in the conflicts that cause the refugee problems and help the refugees as close to their home country as possible.

14.4 Economic policy

The highly developed industrial countries can afford a more advanced military structure than the developing countries, and it is therefore necessary to be particularly aware of regalizing mechanisms in the former. Next to immigration from regal cultures, economic recession is a significant contributing factor to regalization. Several investigations have shown a connection between economic crisis and authoritarianism (see p. 97), and possibly the economic crisis in the 1930's was one of the most important factors that caused the second world war (Padgett & Jorgenson 1982, Sales 1973).

The high unemployment in times of economic recession may possibly have a regalizing effect, but if the society as such is stable, then this psychological effect can be alleviated by creating social and economic security for the unemployed. It is threats to the society rather than threats to the individual that causes authoritarianism, and it is therefore necessary to create an economic policy that makes the society resistant to fluctuations in the market conditions. The traditional reaction of politicians to economic recessions is to try to create economic growth and to prophesy that an international economic upturn will be coming soon and solve all the problems. The economy of western society has been marked by growth for so long that it has developed economic structures which depend on growth in order to function. Politicians and economists are seemingly the only ones who cannot realize that there are limits to growth. We need new economic thinking to create a system that does not depend on growth in order to be stable and to create social security.

14.5 Media policy

Thousands of organizations are trying to get our attention every day. Commercial advertisers, political campaigners, religious movements,

humanitarian organizations, newspapers, and TV-stations. The life and death of a soft drink company or a church depend on its ability to win our attention. Those who win in this merciless competition for attention are those who press the most powerful psychological buttons. The newspaper that is able to create a moral panic over a non-existing crime organization will win the competition over another newspaper that reports on declining crime rates. It hardly matters whether news stories are true or relevant. What matters in the competition is whether the news stories are exciting, i.e. whether they push the most sensitive buttons. More research on the societal consequences of this relentless competition for our attention is urgently needed.

The mass media have an enormous power in modern society. As the main channel of communication, the fourth estate constitutes the backbone of democracy. But unlike other branches of government and institutions of power the mass media remain virtually free of external control, and are therefore able to abuse their power (Ericson et al 1989).

As explained on page 161, the news media have a strong influence on the selection of politicians in a modern democratic society. Media skills are becoming more important than political skills in election campaigns. The news media, in turn, are selected by their struggle for survival in a process of fierce economic competition. In order to get advertisement and sponsor money they have to appeal to the largest possible number of readers or viewers. Many newspapers, magazines, and TV stations have found an effective strategy in appealing to the primitive emotions of their audience. For these media, prying into the private lives of famous people, entertainment, lotteries, sex, and horror, have become indispensable ingredients in the strategies for attracting readers and viewers, and hence advertising money.

The conclusion is that the politicians are controlled by news media, which in turn are controlled by advertisers, who may not care about political agendas. The consequence is that some of the most important selection processes in modern democratic society are completely out of control.

Crime and disaster are particularly button-pushing topics that the media use in their competition. The amount of crime reported in the media is hardly related to the actual crime rates, and the types of crime reported are not typical or representative. The population thus gets an

exaggerated and distorted image of crime that generates fear and authoritarianism. Crime news are typically framed as personal stories rather than thematic discussions. The emotional statements of suffering victims are more button pushing than statistics and complex social explanations. This creates a distorted image of the causes of crime. The blame is placed on moral defects in the individual offender rather than on social and structural causes such as blocked opportunities. This again leads to ineffective or even counterproductive crime-fighting strategies (Elias, R. 1993).

The overall effect of the exaggerated media focus on crime and disaster is legalization. In fact, this effect is probably the most important legalizing factor in countries like the USA today, where media competition is fierce and there is little regulation.

Possible remedies may include alternative sources of media funding, and restrictions on advertising and sponsoring (Gaunt 1990, Bagdikian 1983, Weimann & Winn 1994). As new technologies make mass communication cheaper, alternatives to advertisement-based media become more feasible. The best example is the internet. This technology has for the first time in history made freedom of speech available at a price that ordinary people can afford. Keeping electronic media free of censorship and other irrelevant influences should have a high priority if we want democracy to succeed in the future.

14.6 Disadvantages of kalypticity

By now the reader will probably have got the impression that everything which is kalyptic is good and everything which is regal is evil. But can we be sure that a kalyptic world will make people more happy? Unfortunately not. Things are not so simple. Security is not the same as happiness. How can we measure happiness and quality of life and how can we determine whether people are more happy in one society than in another?

Of course there is misery in the most regal societies: war, overpopulation, poverty, famine, epidemics, hard work, slavery, strict discipline, intolerance, injustice, and so on. No human would voluntarily prefer this life. Nevertheless, the regal society has one important psychological advantage: there is always something to fight for. Fighting to uphold

your family or your country gives a meaning to life. There is always a reason to live.

Not so in the most kalyptic cultures, where some people may feel that there is nothing to live for. Everybody is self-sufficient, and nobody needs your help. If you do not feel that life is worth living, then you may as well end it without having a guilty conscience towards others. This experience of meaninglessness and lack of solidarity is reflected in the high suicide rate in the kalyptic countries (see p. 138).

In all societies there are people who, for some reason, feel insecure or have problems controlling themselves. Such people will be attracted by regal movements or institutions which can bring ease to their mind and relieve them of the responsibility for their own life. It may be monasteries, religious sects, political organizations, youth gangs, criminal organizations, demanding and dangerous jobs, military or paramilitary organizations, etc. There will always be different organizations with different r/k -levels filling each their niche. These more or less regal organizations provide an immediate advantage to the people who are attracted by them: the discipline, solidarity and well-defined organization gives a meaning to life and gives comfort for insecure and unstable individuals. It may keep people of weak character away from drug abuse, crime, and social misery.

For this reason there may always be a need for more or less regal institutions even in a kalyptic society. The curing of drug abusers, for example, requires a higher degree of regality than the society may be ready to accept in other connections, because the drug addiction in itself can be regarded as regal in the sense that it deprives the addicts of their self-control. Another area where a certain degree of regality may be needed is, as already mentioned, the armed forces.

How tolerant a kalyptic society should be towards regal organizations depends on various considerations. The regal organization may have an idealistic and socially useful purpose and hence profit from the psychological need of certain people for regality. Other organizations, whose activities are only internal, may be neither useful nor harmful to the surrounding society. But regal organizations may also be harmful to society, for example because of aggressive recruiting of new members, economic exploitation of members, harassment of ex-members,

violence against rival organizations, criminality, and influencing the surrounding society the direction of higher regality.

14.7 Hazards by applying the r/k-theory

The cultural r/k-theory is more suited for comparing different cultures than for analyzing a single culture. Applying the theory in practice entails many sources of errors, as explained on p. 248. Analyzing a single piece of art may involve considerable problems. Misinterpretation and over-interpretation of literature, myths, pictures, etc. is already a well-known problem and the risk of wrong interpretations increases as the r/k-theory increases the need for interpretations.

As long as a theory only has academic interest, there is room for discussion and differing opinions without any harm being done. But if the theory is put into practice, for which the r/k-theory is highly suited, then the consequences of theoretical errors may be quite serious. What if, for example, the theory is used in an international peacemaking effort, and there is an error in the theory? On the other hand, you may say that the risk of unfortunate decisions is much higher if you have no theory at all.

A natural question is whether the r/k-theory can be used by a despot to strengthen his political power. To this I would answer that those means which are mentioned by the theory of regal selection have already been known and applied by numerous dictators through thousands of years. The theory provides better opportunities for seeing through regal means than for inventing new ones. On the other hand, the theory provides new opportunities for those governments who want to promote peace and democracy.

It is easy to imagine that someone will try to influence the r/k-level of a society by controlling the artistic production. Subsidizing certain kinds of art and suppressing others is a well-known political means in regal countries, but is hardly effective in a kalyptic society. There are so many different communication channels, artistic as well as verbal, that any message which wants to be communicated for psychological reasons will always find a way. This is seen today in many democratic countries: the relatively regal *high culture*, which is supported by the state or by the upper class, does not prevent the more kalyptic pop culture from flourishing and spreading (see p. 195).

15. EXPLANATION OF WORDS

The following list explains the meaning of terms used in this book, especially where the meaning may be unclear. The explanations are intended as a help to the reader, not as complete and exclusive definitions. (The problems with precise definitions are discussed in note 12 on p. 93).

Actor, social

This expression is derived from the use of theater as a metaphor for social life. A social actor is anybody who participates in social life, especially somebody who does something significant.

Adaptive

Of a trait which increases fitness. The term may refer to any fitness-measure.

Agenda setting

Deciding which topics to talk about (McCombs 1993).

Alleles

Alternative forms of a gene.

Art

Artifact which is valued for aesthetic or cultural reasons rather than for practical usefulness. This includes song, music, dance, stories, theater, film, pictures, sculptures, monuments, architecture and body decoration.

Authoritarianism

The psychological characteristic of a person who supports strict discipline and finds security in submitting to a powerful leader. See p. 97.

Behavior therapy

Psychotherapy based on learning theory, with the aim of changing the patient's behavior.

Button, psychological

Many memes gain their fitness from pushing the right buttons in our psyche. A button is a metaphor for the psychological mechanisms that make us pay special attention to certain topics, such as sex, opportunities for making easy money, or dangers to children. Some of the most effective buttons are described on page 44. Psychological button pushing is profuse in commercial advertising and political campaigning.

Cantometrics

Systematic, quantitative characterization of song style (see p. 201).

Coevolution

The coupling between two or more evolutionary processes which mutually influence one another, for example between genetic and cultural evolution.

Cognitive therapy

Psychotherapeutic technique attempting to change the conceptions of the patient, based on the theory that irrational beliefs in the patient cause the unwanted symptoms, and that the worldview of the therapist is more true than that of the patient.

Concept

A general idea or notion.

Conception

A way of thinking of and understanding something. A cognitive image. (Note that I am not using the words 'concept' and 'conception' as synonyms. The latter term is used here in the same meaning as it has in compounds like 'misconception' and 'preconception'.)

Confounding

The problem in a statistical analysis that the effect of one factor cannot be distinguished from the effect of another factor because they are both varying at the same time.

Conservatism

A conservative culture is a culture which is intolerant towards new and deviant ideas and ways of life. A conservative culture is more stable than an innovative culture when the external conditions remain static (see p. 108).

Construction

A social construction is a phenomenon as it is conceived in the shared cognition of the members of a culture. Social constructionism is the sociological study of phenomena based on the way they are defined and conceived by the members of the culture in question regardless of whether these conceptions would make sense in the scientist's own culture.

Culture

A coherent pattern of symbols, traditions, ideas, values, norms, rules, and meanings, transmitted and reproduced through non-genetic inheritance, as well as the behaviors and artifacts shaped thereof (See Kroeber & Parsons 1958).

Development

The change of a system through time. The word often implies the conception that the changes will follow a predetermined path. Such an implication is not intended here when the word is used as a synonym for evolution.

Deviance, Deviation

This term is used in the constructionist sense as a name for persons, objects, or actions which a society regards as deviant, unwanted, and dangerous (see p. 143).

Deviantization

The process of defining something or somebody as deviant.

Dysfunctional

Having no function or failing to fulfil the expected function.

Ethology

Behavioral biology.

Evolution

The change of a system through time, usually due to a selection process. The word often implies the conception that the changes will follow a particular direction called progress. Such a conception is contradicted by the theory of the present book.

Explanatory power

A theory or model has explanatory power if it explains observations well and if predictions based on the model are likely to be accurate.

Fitness

Selective value. The relative ability of an individual, a group, or a trait to survive and be reproduced by genetic or cultural inheritance under given conditions.

Framing

Defining an issue within a certain interpretive paradigm, thereby communicating some aspects of an issue more saliently than others in such a way that a particular problem definition, causal interpretation, moral evaluation, or treatment recommendation is promoted (Pan & Kosicki 1993, Entman 1993).

Function

The function of a trait or phenomenon is the effect it has which contributes to the fitness of itself or of the carrying organism. This effect is the basis for the selection process which has been responsible for the evolution and persistence of the trait or phenomenon. The function does not have to be recognized by the individuals affected.

Functional

Having a function.

Functionalism

A school within cultural anthropology focusing on the function of social institutions. See p. 24.

Group

An assembly of individuals tied together by the perception of a common social identity, for example a tribe or a nation.

Group selection

Genetic or cultural selection working on groups rather than on individuals. See p. 86.

Homologous

Of organs having a common evolutionary origin.

Homophobia

Irrational fear of homosexuality.

Host

The person bearing a meme.

Idiographic

Of a scientific method which regards any incident as unique and makes no attempt to systematize or find regularities (opposite: nomothetic).

Incest

Heterosexual intercourse between blood-related persons, such as brother and sister.

Innovation

A newly arisen cultural phenomenon, for example a religious idea, a new fashion, or a new way of life. An innovation may be created merely by chance, or it may be the result of intelligent planning. See p. 65.

Innovativism

Of a culture which is tolerant of new ideas and which shows a fondness of everything new. An innovative culture is able to adapt to changes in external conditions faster than can a conservative culture (see p. 108).

Instinct

Reaction pattern which is controlled to a significant degree by genes rather than by learning. This concept has often been criticized and alternative terms have been proposed. The main problem with the word 'instinct' is that it may have the connotation of a fixed, unconditioned, robot-like behavior beyond conscious control. Such a meaning is not intended here. I will not claim that there is a specific identifiable gene behind every possible instinctive behavioral pattern or that such a pattern is uninfluenced by cultural differences. I am only saying that genes have a significant influence on people's preference for behaving in a certain way under certain conditions.

Institution

A social practice which is regularly repeated, sanctioned, and maintained by social norms, and which has a major significance in the social structure.

Internalization

Learning process whereby an external concept becomes a permanent part of the mental structure of the individual. An internalized norm is regarded as natural and therefore eludes criticism.

Kalyptic

See p. 92.

Laissez faire-policy

The policy of non-interference.

Lamarckian

A lamarckian process is an evolutionary mechanism where acquired traits can be inherited.

Lamarckism

Lamarckism is the theory that acquired traits can be inherited (see p. 13).

Litany

Singing style where the lead singer sings a line which the chorus repeats.

Locus

The specific place on a chromosome that holds the gene coding for a particular trait.

Medicalization

The process of declaring a particular problem a disease and giving the medical profession the responsibility and authority to discuss and combat it.

Meme

Unit of cultural information analogous to a gene. A problem with this concept is that it may imply the belief that culture is controlled by discrete indivisible units (see p. 63).

Meme complex

A bundle of memes being selected together as a package. See p. 73.

Metaadaptation

An evolved trait of which the main adaptive value lies in the fact that it facilitates the evolution of other traits. (sometimes called 'pre-adaptation', but the former term is preferred because a metaadaptive trait is likely to co-evolve with at least one of the traits it facilitates rather than to predate them).

Moral panic

A highly exaggerated collective fear of a real or imaginary danger within society believed to threaten the established social order. The moral panic involves strong emotional reactions and drastic measures to fight the perceived danger. An organized moral panic is called a witch-hunt (see p. 149).

Natural selection

Simple evolution process according to Darwin's model, based on random mutations and differential survival.

Newsworthiness

The selection criterion applied by journalists when judging how interesting they think the readers will find a particular story.

Nomothetic

Of a scientific method which attempts to systematize and find regularities rather than regarding each incident as unique (opposite: idiographic).

Ontogeny

The development of an individual organism.

Over-interpretation

Finding more hidden messages in a text than there actually are. Attaching meaning to details that do not have a meaning. Reading too much into something.

Paradigm

A theoretic tradition or school integrating worldview, axioms, definitions, symbols, methods, and way of thinking into a coherent system (see also: symbolic-moral universe).

Phylogenetics

Genetic evolutionary history of species.

Play

Play is an activity engaged in for the pleasure it gives without any immediate serious aims or ends, especially the spontaneous activity of children and young animals. An exact definition is hardly possible without reference to the assumed learning function or the undefinable feeling of fun. Since play is easy to recognize, the lack of definition is no big problem (see Fagen 1981 and Garvey 1977).

Priming

The way an issue is framed the first time it is mentioned. This influences the way the listener will think about this issue in the future.

Primitive

Original, resembling the life form of primeval man.

Profane

Not sacred.

Projection

Psychological defense mechanism against unwanted internal impulses whereby the person attributes these impulses to another person or group.

r/k-selection, cultural

See p. 91.

r/K-selection, genetic

See p. 87.

Rationalization

Psychological mechanism whereby an action is given a constructed rational reason which justifies it to the actor and hides the true motive. The person is not consciously aware that he is cheating his own intellect.

Reductionism

Attempt to explain all phenomena with reference to one particular paradigm without recognizing the explanatory possibilities of other paradigms. Especially about attempts to explain a complex system by analyzing its isolated constituent parts, as for example when explaining group phenomena with reference to individual psychology.

Regal

See p. 92.

Religion

The part of a culture which relates to the sacred or is given a sacred reason.

Repression

Psychological defense mechanism whereby an unacceptable impulse is rendered unconscious.

Ritual

Stereotypical action with symbolic meaning.

Sacred

I am using a sociological definition of sacredness which is broader than the theological definition. Sacred denotes anything which in the conception of people belongs to a transcendent, invisible world or to invisible, supernatural forces or beings, or which is tabooed and belonging to a dangerous disorder. Sacred beings may be good (God, angels), evil (the Devil, demons), or ambivalent and awe-inspiring (spirits, forces of nature). See p. 178.

Script

The socially learned cognition and production of action. The social script does not only describe roles and actions, but also the motives and feelings that the actors are assumed to have. See p. 177.

Secondary deviation

Deviant behavior and identity caused by the reaction of a person to the social isolation, stigmatization, and oppression to which an original (primary) deviation has given rise. Also called deviancy amplification. (see Lemert 1967:40ff)

Selection

1. Differential survival or differential reproduction.
2. Evolutionary process involving selection.

Selection criterion

A trait that has a major influence on fitness. See page 83f.

Sexuality

1. Inspired by freudian tradition, I am defining the concept of sexuality very broadly, including any emotional attraction between people and any ritual expression thereof, such as hugs or handshakes. It is impossible to draw a precise distinction between sexuality and other pleasurable feelings. See p. 172.
2. In addition, I am using the word in the constructionist sense as a name for anything which is regarded as sexual by the society in question, i.e. anything which is assigned to the same concept category as the reproductive act.

Sociobiology

The biological study of social behavior. See p. 33.

Sodomy

Medieval religious concept including any sexual act which is regarded as unnatural or sinful, including homosexuality, bestiality, and oral and anal intercourse. The word is still used with various meanings in some jurisdictions although it has never been precisely defined.

Stigmatization

Disreputation. Social process whereby an individual or group is branded as deviant and unworthy.

Sublimation

Psychological defense mechanism whereby the aim of a suppressed or repressed instinct is redirected into a more acceptable outlet.

Symbolic-moral universe

A worldview or way of thinking which integrates symbols, meanings, values, motives, and reasons into a coherent system which legitimizes a moral order (Ben-Yehuda 1990). This concept is analogous to 'paradigm', with the difference that 'paradigm' is used mainly about scientific discourses, whereas 'symbolic-moral universe' is used about everyday moral and political discourses.

Taboo

A prohibition which is given a sacred reason.

Tautology

A statement which is true by virtue of its logical form. Circular argument.

Transcendent

Sacred or supernatural. Existing apart from the material universe.

Variation

1. A state of diversity in a population.
2. Fluctuations of a phenomenon through time.
3. The word is sometimes used as a synonym for innovation or mutation.

Vicarious selection

A new selection mechanism partially replacing an older, slower or less effective selection mechanism. The vicarious mechanism has been created by the older mechanism and is leading in approximately the same direction as the old one. See p. 74.

Witch-hunt

See moral panic.

16. LITERATURE

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Cultural Selection

Agner Fog

This book provides an interdisciplinary theory that challenges traditional sociology by its superior ability to explain the irrational or unplanned aspects of culture, and it reveals that our society is not as rational as we would like to believe.

The reader receives a comprehensive overview of cultural selection theory, including the history of the theory and the many different schools of thought, as well as an explanation of the nuts and bolts of cultural selection and the different selection mechanisms.

Furthermore, the author introduces the new paradigm-breaking cultural r/k theory - a theory which reveals causal connections between religion, politics, ethics, art, and sexual behavior; and which can explain such diverse phenomena as the fall of Rome, the advent of rock music in the late Soviet Union, and the antipornography movement in contemporary USA. The attraction of this theory lies in its impressive explanatory power and its usefulness for making predictions.

Unlike some elaborate mathematical treatises, this book maintains a down-to-earth theory with the main focus on the explanation of real world phenomena, including religion, politics, music, art, architecture, clothing fashion, sexual behavior, sport, and play. It thereby provides a solid foundation on which to base further research in many areas of human culture, including anthropology, archaeology, political and religious history, art, social psychology, sexology, peace research, and futurology.

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