



Cultural r/k Selection

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Abstract

A new model of cultural r/k-selection is introduced. This model, which provides a classification of cultural processes based on the factors that influence memetic fitness rather than on selection mechanisms, predicts that cultural evolution will go in different ways depending on the balance between internal and external conflicts of a society. A society dominated by external conflicts or war will evolve in a direction called regal, whereas a society in a peaceful or sparsely populated area will evolve in the opposite direction, called kalyptic. The regal or kalyptic characteristics of a society influence the evolution in many areas of culture, including religion, political structure, art, music, etc.

Key words: r/k-selection, vicarious selection, regal, kalyptic, sociology, religion, art, music, architecture.

1 Introduction

The new model introduced in this article provides a way of explaining important social phenomena based on cultural selection theory. The model is defined in terms of memetic fitness determinants, and some possible mechanisms are outlined. The article finally discusses how the theory can throw new light on human cultural history and contribute to a better understanding of various cultural phenomena, including religion, ideology, art, and music.

It is assumed that the reader is familiar with memetics or cultural selection theory. A popular introduction to this paradigm is given by Lynch [19]. A more thorough description of mechanisms in cultural selection can be found in Boyd & Richerson [5] and Campbell [6]. A more sociologically oriented version of the theory is given by Schmid [30].

The theory presented here is described in more detail in Fog [14].

2 Fitness Determinants

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 *fitness determinants*.

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 fitness determinants is necessary to predict 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 (Abel [1] and ARHP [4]). 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 (Martindale [21]), 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 led to important results in sociobiological theory, and a similar study is highly needed in the area of cultural processes.

A fitness determinant 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 fitness determinants 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 fitness determinant: cheap production. Knowing the fitness determinants without knowing the mechanism, we may predict the direction of evolution, but not its speed.

3 Classification Based on Fitness Determinants

An analysis of the fitness determinants of a system can be useful for predicting the direction of evolution. This approach is particularly attractive when the system comprises so many complex, and possibly conflicting, selection mechanisms that a detailed mathematical modeling is impossible.

One example of a classification based on fitness determinants is the distinction between specific and general evolution as defined by Marshall Sahlin [28]. Specific evolution is the adaptation to a specific niche, while general evolution is the evolution of *adaptability*. Evolution of specific adaptedness may be advantageous in a constant and stable environment, while the evolution of general adaptability or flexibility is required in an ever-changing environment. This distinction between specific and general evolution is applicable to biological as well as to cultural evolution.

Another example is the distinction between r- and K-selection in biological evolution (ALeksic [3], Takada [31], Wilson [32]). If an animal species lives under conditions where resources are ample so that there are good opportunities for expansion, but where there are also considerable dangers such as predators, then it will be advantageous for this species to use most of its resources on breeding as fast as possible and spending few resources on each offspring. This is called *r-selection*. The r is the mathematical symbol for the rate of reproduction. r-selection causes the evolution of small animals 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 under conditions where the population is limited by scarce 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. If the animals under these conditions bred excessively, then they would have insufficient resources for nurturing each young, and they might over-exploit their habitat to the point where the resources were exhausted. K-selection is found in those animals that come last in a food-chain, such as whales, elephants, and humans.

The r/K dichotomy is useful for classifying species according to their reproductive strategy. The term *r-strategy* is used to describe animals that use most of their resources on producing as many young as possible, but do not care for their young. The opposite is a *K-strategy*, which means that the animals produce few young but spend a lot of resources on caring for and protecting their sparse offspring. We may expect a species to develop an r-strategy when reproduction rate is the dominating fitness determinant, and a K-strategy when effective utilization of limited resources is more important.

The selection mechanisms leading to these strategies may be more complicated than this simplistic model indicates. In many cases the mechanisms behind K-selection are not fully understood, although the fitness determinants are.

4 Cultural Selection Models

In cultural selection theory, the number of possible models may be greater than for the genetic processes, because both innovation, reproduction, and selection of cultural phenomena may involve many different mechanisms and transmission media (Findlay [13], Fog [14]). All these mechanisms may interact with each other in so many complicated ways that a stringent quantitative 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 fitness determinants. 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 fitness. This approach is attractive because it enables you to make predictions about the direction of cultural evolution based on incomplete information about the system (Fog [14]). Of course, I do not deny that other classification principles may have valuable applications.

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 (Boy & Richerson [5], Daly [9], Fog [14]) and the reader is warned against expecting too much from the apparent analogy between biological mechanisms and the cultural model presented below. The analogy may be useful as a source of inspiration, and should not be regarded as anything else here when I am introducing what I will call *cultural r- and k-selection*.

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 [15]).

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 will be 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, where discipline and uniformity are regarded as virtues, where martyrdom is the highest honor, and where 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 analogy with genetic r/K-theory becomes apparent when you consider that an r-selected culture spends a high proportion of its resources on winning new territory. Or, to be more exact: The r-memes make their hosts spend many resources on winning new hosts for the same set of memes. The cultural k-strategy implies a different allocation of resources, namely on keeping the hosts you already have by making them satisfied with their society.

The fitness determinant for cultural r-selection may be characterized as military strength and political unification. It is the ability of a culture to spread to new peoples and to withstand the influence from other cultures. The fitness determinant 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 fully as possible can the culture avoid upheavals. The r-selection is determined by the reproduction of culture in space (geographic expansion), the k-selection is determined by reproduction in time (retention).

In order to avoid the impractical r- and k- terminology and to establish a distance from 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 which limits the freedom of the individual members and makes considerable demands on the resources of the individuals 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. I will use the term *regalization* for an evolution in the regal direction, and *kalyptization* for the opposite.

Occasionally, you may observe a correspondence between the strategic implications of genetic and

cultural r/k-selection. In a regal society, the population usually spend a lot of resources on producing many children, but invest little in the individual child. In the kalyptic society, people have few children, but spend many resources on giving each child the best possible education. This is in perfect agreement with the *genetic* r- and K-strategies. This similarity between genetic and memetic strategies is due to the fact that I have classified the evolutionary systems according to fitness determinants rather than selection mechanisms. If two different evolutionary systems have similar fitness determinants, then they are likely to evolve in similar directions, no matter how different the selection mechanisms. The concordance between the two systems is far from perfect, though. If a regal culture expands by conquering new territory for its people, then this is in agreement with a genetic r-strategy. But if the regal culture wins new hosts for its memes by proselytizing, then this is an r-strategy only in the context of the cultural scheme, not the genetic.

Due to the weakness of the analogy, I prefer to regard the cultural r/k-model as an independent theory where the r and k do not have the same meaning as in the genetic model, although the similarity in nomenclature is intended.

6 Mechanisms in Cultural r/k-Selection

As explained above, cultural r- and k-selection may be defined by the fitness determinants or driving forces pushing the evolution in one or the other direction. The most important driving forces behind regalization are intergroup conflicts and other collective dangers, while the driving forces behind kalyptization are 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.

It is important to understand, however, that regalization is also 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 the USA and the Soviet Union was a clear example of such a reaction. This mechanism is an example of what Campbell calls *vicarious selection* [6]. 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 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 evolution. Other threats to the society as a whole may also cause regalization, such as mass immigration, economic crisis and overpopulation.

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 puts the fewest demands on people and gives the highest freedom and autonomy to the individual. You may call this hedonic selection (Martindale [21]). 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 regularization of the society they invade.

Yet 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 the economic growth and technological progress made possible a superior military technology. The result of this selection process is that American and European culture now floods the former Soviet Union, whereas very little culture diffuses 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 explained as a difference in the *reproductive strategies* of their memes. A regal culture is a culture which utilizes a high proportion of the energy and resources of the individual members in the interest of reproducing its memes. 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 hosts 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 meme complex 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 hosts or not.

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 [\[18\]](#), Reynolds &c. [\[24\]](#)).

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 &c. [2]).

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 &c. [10], McCann & Stewin [22], Padget & Jorgenson [23], Rosenblatt [27], Sales [29]).

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 [12]). 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 evolution, 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 may destabilize the ecological balance and lead to famine and mass extinction (Malthus [20]). 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 to maintain 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 [11]), 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.

8 Human History in Light of Cultural r/k-Selection

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. This invention was probably not selected for until an increased

population density made it necessary to produce food in a more intensive manner than simply gathering the fruits of nature (Rosenberg [26]). 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 [8]). 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 [7]).

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.

It is reasonable to assume that the spiral of ever increasing regality was started by an environmental factor, namely the proximity between two areas of very different fertility. The different ecologies of the two areas led to differences in way of life, political organization, and thus also a difference in social identity. The border between the two areas inevitably invited conflicts between the two quite different groups.

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 everything has a limit. 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 now has 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, and the rest is split up into smaller states.

History shows numerous 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 split up into smaller states. 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.

9 Regal and Kalyptic Cultural Products

The results of cultural r-selection is very evident in the area of religion. The most regal societies usually develop a monotheist religion with a powerful and punishing high god. Several meme theorists have demonstrated the suitability of religions for controlling a population (Lynch [19], Richerson & Boyd [25]), and monotheist and pantheist religions are particularly effective in this respect. The image of God as a supreme ruler is a psychological projection screen which legitimizes the undivided power of a monarch. In times of kalyptization, the god becomes imagined as more merciful, and the religion puts less emphasis on extreme punishments like purgatory and hellfire.

The regal characteristics of a society are also very conspicuous in its architecture. Powerful kings and religious leaders advertise their power by the building of ostentatious palaces, cathedrals, and monuments with the most costly and profuse ornamentation (Kempers [16]). This richness of ornamentation is repeated in painting, music, and other branches of art. The preferred music style of a culture has been found to be highly correlated with the social structure (Lomax [17]), and this correlation is particularly striking when we look at the regal/kalyptic characteristics of a society. Big orchestras and choirs led by a single conductor or master, producing highly embellished music, are characteristic of a regal culture,

while kalyptic cultures prefer a music where accompaniment is equally important to the melodic voice, and where the musicians appear to be equal (Fog [14]). The preferred styles of art, music, etc. are the ones which are psychologically most congruent with the social structure.

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 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*", and thereby provide a convenient classification scheme for cultures or cultural products. 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. I have observed that many aspects of culture are connected to this cultural r/k-scale (Fog [14]), although no large scale statistics have been made yet.

[Table 1] 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. The reader is referred to (Fog [14]) for a more detailed discussion of how the r/k-dimension is reflected in different areas of culture.

	Regal	Kalyptic
Religion	Monotheism. ascetic, puritan.	Animism, polytheism, atheism, 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, witch-hunts.	Decentralized government, democracy, tolerance, peace.
Art	Finical, perfectionist. Patterns with strict geometry. Perpetual repetition of small details. 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, rhythm varied, imaginative, often improvised. Broad repertoire of text themes.
Dance	Organized, restrained.	Unorganized, hilarious.
Dress	Decent, tidy, uniform. Strongly 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.
	Strict sexual morals. Stereotypical sex roles. Sex is only for	Liberal sexual morals. Sex regarded as having several purposes. Flexible, individual, pleasurable

Sexual behavior	procreation. Procreation is a duty. Children are regarded as asexual and ignorant. Contraception and abortion illegal. Early marriage. High population growth.	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 1. Typical characteristics of regal and kalyptic cultural products.

Generally, you should expect different aspects of a culture to be in reasonable agreement with regard to cultural r/k-status, but it is unlikely that you will find perfect agreement. A complex culture may have political fractions, subcultures and institutions with very different r/k-status. For example, there may be a rebellious subculture which supports more kalyptic values than the mother-culture and is aiming at influencing the mother-culture politically, or just creating space for an alternative life-style. You may also find religious sects which are more regal than their surrounding culture. Religious belief may be a more important part of personal identity than nationality to the sect members, and the regal activities mainly take the form of relentless efforts at gaining new proselytes. Other organizations may have the r/k-ideology which best suits their function, be it economic, military, correctional, or other institutions.

Another reason for lack of consonance between different aspects of a culture is simple inertia. Old art genres which fit the r/k-status that the society had several generations ago may be kept alive side by side with more modern genres. Magnificent old buildings are not torn down just because their architectural style is out of fashion.

10 Conclusion

The theory of cultural r/k-selection throws new light on important aspects of cultural life, including religion, ideology, art, etc. This new model has the potential for providing causal explanations to many cultural phenomena which hitherto have been difficult to explain and for suggesting causal connections between phenomena which previously have been regarded as independent. The attractiveness of this model lies in its usefulness for explaining historical developments as well as for predicting future changes, even when the knowledge of the selection mechanisms is incomplete.

The cultural r/k-theory resembles genetic r/k-theory in many ways, but it is definitely not a perfect analogy, and it should be regarded as a theory in its own right rather than an analogy.

The cultural r/k-theory is only in its infancy. The possibilities of applying the methods discussed here to a diversity of cultural phenomena opens up a whole new range of topics for future research.

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