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## Organizational Institutions and Their Responsible Behavioral-Cultural Gene Codes and A Measurement for Organizational Efficiency

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### ABSTRACT

This essay has two goals. The first is to classify two different types of organizational institutions from the four-dimensional system-thinking perspective, and to identify the relationship between such organizational institutions and their relevant behavioral-cultural gene codes embedded within their (P-)individuals. Unlike the popular belief that authoritarian or totalitarian institutions are caused by ideologies or created/dominated by tyrannical leaders, the author defines a concept of behavioral-cultural gene code and extends the application of self-organization theory to suggest that behavioral-cultural gene codes carried by the members of the organization are responsible for the formation of, either democratic or authoritarian, institutions. Therefore, transformation of an authoritarian organization into a democratic one, no matter at the level of groups, of business enterprises, or of a government, must start from transforming behavioral-cultural gene codes. The second goal is to define Organizational Friction Coefficient for capturing the characteristics of these two types of organizational institutions, thus adding clarity to the widely used concept of organizational efficiency in the contexts of both business organizations and systems of government.

**Keywords:** *Organizational Friction Coefficient, Cultural Gene Code, Organizational Institution, Organizational Efficiency, Self-organization, Socio-cybernetics, Organizational cybernetics.*

### 1. INTRODUCTION

In December 18, 2008, Chinese top leader HU Jing-tao spoke publicly, while reviewing China's 30-year of reform process, that "we" will absolutely not copy Western political institutional model[1]. In March 3, 2009, the Speaker of Chinese National People's Congress Mr. WU Bang-guo further clarified that "we" will absolutely not adopt the institution of separation of powers into three branches[2]. In my opinion, the term "we" they used here should mean "we the core leaders of CCP," not "We the People." The Chinese leadership's position of insisting on "absolute power" is again declared. In the same time, Chinese people have been suffering a high-level of governmental corruption which leads to a large number of crisis in China's social, economical and political systems. The problem which served as a cause of this paper is that, while Lord Acton's dictum "All power tends to corrupt, and absolute power corrupts absolutely" has been widely accepted by a majority of nations and became a fundamental principle guiding their political behaviors, why is it that there are always a number of ruling groups, such as those in China, North Korea, Iran, and according to a recent report[3], Russia and Venezuela, won't be able to see the rationality of Lord Acton's dictum and insist on absolutism, despotism, autarchy and autocracy? From a socio-cybernetic approach, I invite readers to explore this puzzle. Moreover, while a democratic system and an autocratic system compete in a same planet, which one will

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eventually survive and rein in the long run? To tackle these two related questions, let's review a few useful conceptual frameworks, or theories.

## 2. SELF-ORGANIZATION

I have previously summarized Self-organization Theories of R.W. Ashby[4], of H. von Foerster[5] and I. Prigogine[3] into a more general representation as Eigen-mechanism (EM) which consists of at least one Eigen-loop leading to at least one Eigen-state[6][7]. EM may be considered as another format of causality – instead of Event A causes Event B in traditional sense, while both Event A and Event B are at the same perception scope (e.g., jumping out of the window of a tall building (Event A) causes the jumper to become dead(Event B), or a sperm meeting an egg (Event A) causes the formation of a new life(Event B)), an EM indicates a causal relationship that an agent, or an operator, functioning at micro level or on the elements of a system, repeatedly, causes (after enough time is allowed) the formation of some kind of organization at macro-level or of the system. (See [6][7] for detail examples.) This is another way to view self-organization. I would like to invite the reader to pay more attention to the principle that in every specific EM, or in every scenario of self-organization, an Organizational Seed, or alias “agent,” “operator,” “unchanging laws”, “structural determinant,” etc. can always be identified. It is based on this principle that one question is raised in our focus: What is the organizational seed for a totalitarian society or an authoritarian organization?

## 3. BEHAVIORAL-CULTURAL GENE CODE

The term “cultural gene code” are being used by a number of scholars writing in Chinese in recent years, and sometimes mixed with the Western term “meme.” Through search engines on Internet no consistent or widely shared definition can be found for these terms, but it looks like “meme” is more focused on the feature of “being duplicable and spreading like virus” while “cultural gene code” is more focused on the feature of “being responsible for what will be growing from it.” I shall use “behavioral-cultural gene code”

in this paper and propose a definition in the light of self-organization theory. **A behavioral-cultural gene code is a piece of theory or principle or value or belief, inherited (without self-awareness) or learned (with self-awareness) from one's cultural surroundings and being used to guide one's behaviors with or without self-awareness** (as “Theory-espoused” or “Theory-in-use” in Chris Argyris' terms), which serves the role of organizational seed in the self-organization processes in human interactions. I use the modifier “behavioral-cultural” to indicate that such codes are not only carrying cultural content (such as legends, role-model stories, religious beliefs etc.) but also having a directive influence in guiding one's behaviors (such as rules of a thumb, hidden voices, self-censorship, priority principles etc.)

For example, if in a group everybody's behavioral-cultural gene code is to believe “all man are created equal” and “respect”, then a democratic organizational structure will eventually be formed. If the code is to believe in ranks, ego-competing, and out-smart each other, then an authoritarian or totalitarian organizational structure will eventually be formed.

## 4. THE FOUR-DIMENSIONAL SYSTEM-THINKING

A more comprehensive way of viewing complex systems beyond only paying attention to the self-organizing phenomena of such systems has been built in recent years[9][8]. Briefly, four-dimensional system-thinking (4DST) suggests the observer to pay attention to four perspectives on the same system in the same time, similar to (the much simpler) space-time continuum used by Albert Einstein (i.e., length, width, depth plus time), the four dimensions in 4DST are (1) structure/form, (2) procedure/behavior, (3) culture/norms, plus (4) Emergence/Eigen-state. The point of this theory is that the fate or the outcome of a complex system (the Emergence), such as a democratic society or an autocratic one, is produced by the intertwining dynamics among the first three dimensions. Fig. 1 identified these dynamics. Emergent status of the whole system grows from these interactions indicated in the

diagram.

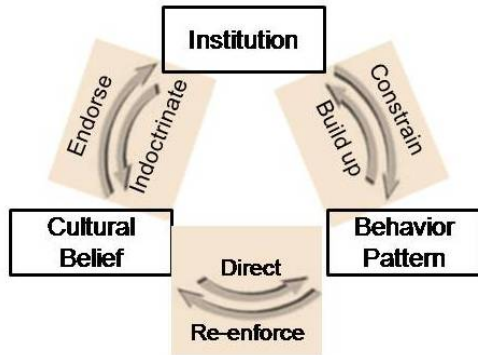


Figure 1. Three basic dimensions in 4DST.

Look at the six arrows in the diagram which represent the six transforming processes, or dynamics, that are going on among our three focuses of our observation:

- 1- An existing institution among a group **indoctrinates** cultural believes to its members;
- 2- A piece of cultural belief of a member **directs** his/her behavioral pattern;
- 3- Accumulated behaviors of the group members **build up** the institution;
- 4- The institution **constrains** the behavior patterns of the members;
- 5- The behavior patterns of the members **re-enforce** their cultural beliefs;
- 6- The cultural beliefs of the members **endorse** the legitimacy of the institution.

From this model, we can see that “Behavioral-Cultural Gene Code” is a concept that tries to capture what’s going on in the above processes 2, 3, 5, and 6. Such codes may not only be carried by individuals but also by “P-individuals” in Gordon Pask’s term, directing actions of groups such as the Party or a culturally bounded group [10]. More importantly, please pay attention to the above six verbs in bold. In different societies these actions may be carried out in different ways. Comparative examples are given in Table 1.

Dynamics	In democratic societies	In autocratic Societies
(1) <b>Indoctrinate</b>	encourage creativity	brainwash & trivialization
(2) <b>Direct</b>	consistent means-ends moral system	inconsistent means-ends moral system
(3) <b>Build up</b>	Consensus On charter or contract	compete for rank and obey the higher
(4) <b>Constrain</b>	rule of law and ethic codes	rule by order and block of information
(5) <b>Re-enforce</b>	be proud or be guilty	loss of integrity
(6) <b>Endorse</b>	appreciate/ participate	submit to/ surrender

Table 1: Comparing six dynamics

These different ways may also be part of the code – thus I use the modifier “behavioral-cultural.” The term “behavioral” here is used in the sense of “purposeful behavior” as classified by Rosenblueth, Wiener and Bigelow in their famous 1943 paper [11].

Here I would like to highlight a particularly interesting point for the second dynamics in Table 1, a piece of cultural belief of a member **directs** his/her behavioral pattern. In the implementation of any purposeful behavior, there are always means-ends layers or feedback loops: in order to achieve a goal **y**, one needs to choose a means **x**, and the means **x** could be viewed as a next layer goal and a next level of means would be chosen, and so on. This process goes on until the original goal at the top-level is achieved. Vladimir Lefebvre’s work on the Algebra of Conscience [9], in which he identified two different ethical systems featured by different Boole Algebra operators under different cultural environment, has shed light here on how a piece of cultural belief directs one’s behavior in different societies. The space limit of this paper won’t allow me to go into details of this point, I need only emphasize that the behavioral-cultural gene codes in different societies differentiate not only in

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their DNA-like contents, but also on the ways that they compute in our cognition systems as revealed by Lefebvre [12].

## 5. CODING DEMOCRACY AND AUTOCRACY

Now with the above conceptual tools let's re-classify two different types of organizational institutions not from their structural/form dimension as most writers did, but from 4DST perspective, paying particular attention to the roles that behavioral-cultural gene codes play in generating these two organizational types.

When a **piece of theory or principle or value or belief** are being widely or universally held among a group, not just in what one says (as theory-espoused) but also actually directing one's actions, decisions and choices (as theory-in-use), then it is a behavioral-cultural gene code. For example, the principle of power corruption I mentioned in the beginning, expressed in Lord Acton's dictum in 1877, is typically such a code. We may see its trace in the U.S. Constitution (1787), theory of tripartite system of Montesquieu (1689-1755), the Bible (about 382 A.D.), and the Constitution of the Roman Republic (509-49 B.C.). Such commonly shared ideas lead to coordination among people and their design of the government.

Let's see another example in China. The belief in absolute power re-presented by the CCP position in 2009 (also shockingly in 1989) mentioned in the beginning of this paper, contains a behavioral-cultural gene code expressed by the Mao's dictum: "Governing power comes from guns." This worship to violence comes from the multiplication of two codes: "To serve the people," (Mao's top motto), as an ultimate glorious goal, and "to use whatever (unethical) means to achieve a glorious goal is necessary and ethical" (Lenin's idea). Their logic: The Party has a noble goal, and in order to achieve such a goal, the Party is entitled to use any means (such as using military force to crack down unarmed citizens and students) at any cost. (It has been estimated that since the CCP took power in 1949, the number of unnatural deaths in China is over 80 million.) The

seemingly glorious noble goal "to serve the people" can be traced back to a famous writer GU Yan-wu, (1613-1682), a scholar and a dissident to the Qing Dynasty. His widely spread quotation was "Every humble man has a responsibility for the rise or fall of the whole land under-heaven." This trace back to a bandit leader SONG Jiang's mission in 1112, "to implement the Tao for the Heaven," to another popular saying by FAN Zhong-yan (989-1052) "to be the first to feel concerned about the whole land under-heaven affairs and the last to enjoy the happiness of the whole land under-heaven," all the way back to central value of the Confucian conceptual system: to learn well so to become government officials to serve the emperor in an authoritarian organization. Mao's directive "to serve the people" leads to the same organizational structure too.

The motto "to serve the people" or the words of GU or SONG or FAN may sound good or at least harmless for Westerners when heard first time. However, Karl Popper had pointed out that absolutism, historicism, authoritarianism and totalitarianism are all related. In my opinion, the Chinese concept of "the whole land under-heaven" and the "Tao" also carry connotation of absolutism and historicism.

In business consulting practices conducted by myself and colleagues in recent years in China, we have observed that at least the following behavioral-cultural gene codes responsible to the formation of an authoritarian company structure: (1) absolute obedience to those higher in rank; (2) constantly compete for ranking; (3) favoritism or "Guan-xi" by all means; (4) manipulating the other by all means; (5) strategy/outsmart each other. These are "theory-in-use" among business leaders and managers, guiding their actions day by day and every day. Very few of companies that we encounter have flat organizational structure and distributed decision making. Most of them are like mini-kingdoms inside which the top boss makes all decisions. These behavioral-cultural gene codes are sharply in contrast with the ones observable in successful U.S. companies: (1) encouraging individual creativity; (2) equality and participation; (3) play by principles not relationships; (4) respect and integrity; (5) be bound by the law and agreed

rules of the game. From the perspective of our 4DST theory, we see the key role of these codes in the formation of the organizational type.

## 6. ORGANIZATIONAL FRICTION COEFFICIENT

Not with cybernetics academics but with organizational development practitioners, I had discussed possibility of creating a measurement to evaluate different types of organizational institutions at all possible levels, i.e., of groups, companies, government agencies and society.[13] This measurement is not based on subjective variables such as people's feelings, political ideologies, cultural values or religious believes, but based on objective, economic concepts such as efficiency. There are two major advantages of adopting this measurement. First, it avoids the ideological blind-spot of those in power within an authoritarian institution. For those truly believe in absolutism, they are totally blind to people's unhappiness and dissent and this measurement may enable them to see things differently. Second, it offers a highlight to guide possible actions of improving organizational efficiency. At least it will be one more tool to capture the characteristics of the two types of organizational institutions.

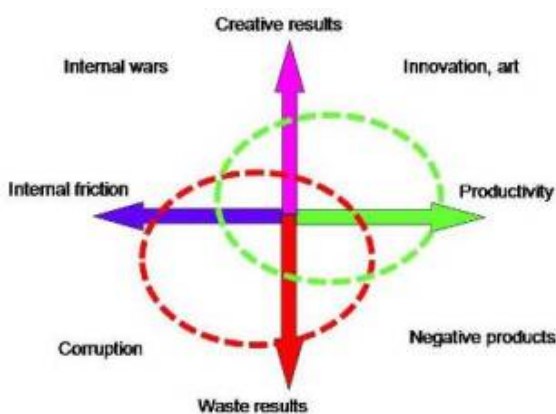


Fig. 2 Four directions of organization outcome

The major supporting argument for authoritarian believers is that their system has a higher efficiency than democracy. “Centralized power makes big things happen quickly” is offer used as a defensive and brain-wash tool. Even Popper

acknowledge this efficiency argument, he only criticizes it as “unreliable.” However, that perception about the efficiency is based only on the possible decision-making speed and (forced) compliance in executing decisions. In Figure 2, I suggest four possible outcomes when people form organizations: They may increase their productivity or their internal fights; they may produce creative results or wasteful results. From my personal experience, an authoritarian organization is more like the lower left circle while a democratic organization is more like the upper right circle. The point is that while authoritarian organization may act faster than a democratic one, they usually cost huge losses of the society through wasteful results, bureaucratic ineffectiveness, corruption, ineffective use of natural resources, exploitation of labor and human lives, not to mention criteria like human rights and happiness.

Thus, if we use the term “inner organizational friction” to summarize the above mentioned losses, then we can define Organizational Friction Coefficient as a measurement in the following:

$$OFC = \frac{Rc}{Rw + Rc}$$

Rw: Resources consumed to accomplish the actual work achieving organizational goal

Rc: Resources consumed for achieving team coordination (team communication cost)

When Rc=0, OFC=0; (highly efficient)

When Rc=Rw, OFC=0.5 (so-so organization)

When Rc>>Rw, OFC≈1 (useless organization)

When Rc=∞ or Rw=0, OFC=1 (like cancer)

As the allowed space of this paper runs out, I invite the reader to try to use this measurement to find the OFC values of the organizations of their interests. Please note that Rw and Rc may be defined as vectors containing a set of different resources. Measuring companies might be relatively easier. A project of collecting relevant data to compare the China and India is being proposed and I would like to invite interested readers for this project.

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## 7. NON-CONCLUSION

It is hard to condense the discussion of the topic in space allowed, and this paper should be read as an unfinished working paper, inviting interested colleagues to join the exploration. The tentative conclusion here is subject to update in near future. At this point I can only say that the popular belief that authoritarian/totalitarian institutions are caused by ideologies or created/dominated by tyrannical leaders might be too brief or not very useful, since they indicate fewer alternatives for people who want to transform them. In this paper I presented a hypothesis that behavioral-cultural gene codes of the members of the organization are responsible for the formation of the type of organizations – democratic or authoritarian. This leads to an understanding that in order to build up a democratic society or a more participatory business enterprise, the dominant behavioral-cultural gene codes must be re-engineered first. A new set of values/ theories/ principles must be adopted first by a majority of members involved, and be applied to their daily actions, then the transformation of the institutions would become possible. Furthermore, the definition of Organizational Friction Coefficient suggests a research direction which may lead to better understanding of organizations, although the initial research project on this coefficient has not been completed yet at this time.

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