The Transformation and Imbalance Effect of Knowledge Structure of the Population in China:

Model Establish and Empirical Analysis[1]

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Abstract: Today, with the increasingly importance of intellectual capital on social economic development, the balance between knowledge structure of the population and social economic structure appears to be particularly important. This paper believes there appears imbalance, at current, in the transformation of China's knowledge structure of the population and this imbalance includes co-existence of both balanced and imbalanced states. The impact of balance and imbalance on potential population social economic structure as well includes co-existence of both positive and negative sides. And the factors generating this situation include process factors and structural factors as well. This paper builds up a series model, tries to analyze the imbalance effect of knowledge structure of the population, and explores the internal transformation mechanism of knowledge structure of the population.
Key words: knowledge structure of the population; imbalance effect; and balance model

If it needs to mention relatively the most fundamental aspect of China's population issue, then the quantity and quality of the population are supposed to be the two primary issues that academic circles have been concerning all the time. China's control on rapidly increasing population quantity in the last century was relatively successful; yet population quality, while has been improved significantly, left us new thinking space. Neither population quality improvement nor social morality retreat is the issue to be discussed in this paper. What concerns in this paper is a new vision differing from the concept of population quality, or the characteristics of knowledge structure of the population that is based on population quality. And it involves both quantity and quality of population, social moral level, and as well the situation of social education course and other related aspects. Precisely, what this paper mainly discusses is the imbalance in the transformation of knowledge structure of the population and its imbalance effect that impacts the potential change of population social economic structure.

1. KNOWLEDGE STRUCTURE OF THE POPULATION: TRANSFORMATION AND IMBALANCE

So called knowledge structure of the population refers to both the population structure classified by the standards of knowledge fields mastered by people themselves (such as physics, mechanical manufacturing, bio-pharmaceutical, information technology, social sciences, and literature and arts) and the one classified by the standards of knowledge levels (such as graduate program, undergraduate program, higher vocational or associated degree program, high school, and middle school, etc). Briefly speaking, knowledge structure of the population refers to the population structure classified by the symbols of knowledge fields and knowledge proficiency. And it takes overall population as its carrier instead of meaning individuals and it talks about overall knowledge fields and knowledge proficiency of society. Knowledge structure of the population is the reflection of social attribute of population and more the characterization of the types of modern knowledge economy and society.

With the constant development of economy and society, overall structure of society is changing accordingly. In addition to social economic structure, this change has demonstrated in knowledge structure as well. In another word, China is presently in the accelerating period of social transformation, knowledge structure of the population in China at current stage, in a certain sense, is as well in its transformation phase. In the process of social transformation, knowledge structure of the population in China is just changing from traditional type modern one. And this change can be briefly summarized into two aspects: from traditional dominance of arts and humanism knowledge fields to modern dominance of science and technology fields; from traditional dominance of private schools, imperial examinations, and social status classifications to modern dominance of vocational education in schools. This change has its specificity that is mainly reflected in the imbalance between knowledge structure of the population and social economic structure; we can get a brief idea of it from the imbalance model of knowledge structure of the population and social economic structure.

In terms of two dimensions of tradition extent and modern extent, the relationship between knowledge structure of the population and social economic structure can be divided into four areas of A, B, C, and D, among which Area A and D belong to balanced areas. The transformation of knowledge structure of the population in China is just in the changing process from Areas A to D, which derives two imbalanced Areas of B and C. Area B and C are just in the so-called transformation phase; and they co-exist in the transformation process of knowledge structure of the population in China. In this paper, the area with traditional knowledge structure of the population and modern social economic structure is comprehended as knowledge structure of the population imbalanced (Area C) while modern knowledge structure of the population and traditional social economic structure is comprehended as knowledge structure of the population balanced (Area B). The straight line running through Area A and D is the balance line of knowledge structure of the population and social economic structure. People, in real life, often comprehend knowledge structure of the population balanced as knowledge structure of the population balance. Balanced and balance are in fact not the same concept, and the balanced is just balance in form instead of in essence.

Knowledge structure of the population balanced refers to the balance state of knowledge structure of the population balanced in form, implying the state of taking the lead in social development. And this super-balance state covers the actually lagging state of social economic structure. The imbalance of knowledge structure of the population refers to the state of structural imbalance and uncertain change generated from knowledge fields and knowledge proficiency in population, which is restricted by social development trends. This type of imbalance and balanced in knowledge structure of the population is introduced by the change of knowledge structure of the population in a society in transition. Knowledge structure of the population develops and changes from one state to another under the impact of one or more factors. In current society in transition knowledge structure of the population develops into the co-existence of both balanced and imbalance. The balanced and imbalance have been reflected in various aspects of structural characteristics of population, such as education level and occupational

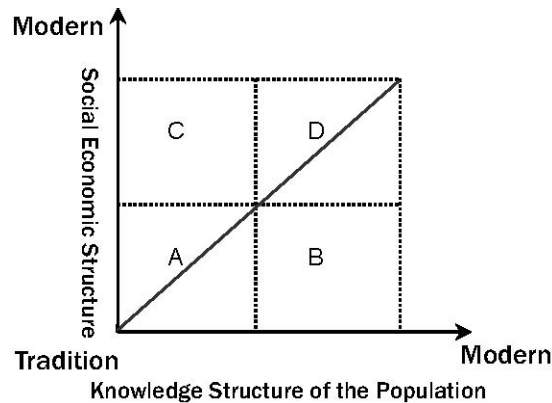structure as well as knowledge and industry type, etc.

Figure 1: Imbalance Model of Knowledge Structure of the Population and Social Economic Structure

The balance of knowledge structure of the population is the balance in overall society that is the best suited for social development. It is impossible for knowledge structure of the population to reach complete balance state and it always swings between imbalance and balanced in order to reach a relative balanced state. Imbalance will introduce negative impacts on society while it could exert certain positive effects under a particular situation. Balanced is also a state of imbalance. Balanced however doesn′t necessarily bring positive effects yet it could be the resistance to reach balance instead. The society objectively needs to break the balanced in knowledge structure of the population to seek a balance state. Please refer the figure to check the details regarding imbalance and balance relation among knowledge structure of the population. In short, the transformation of knowledge structure of the population in China is the change from imbalance to balance state, among which factors affect its transformation include structure factor and process factor. This issue will be briefly explored in the following parts.
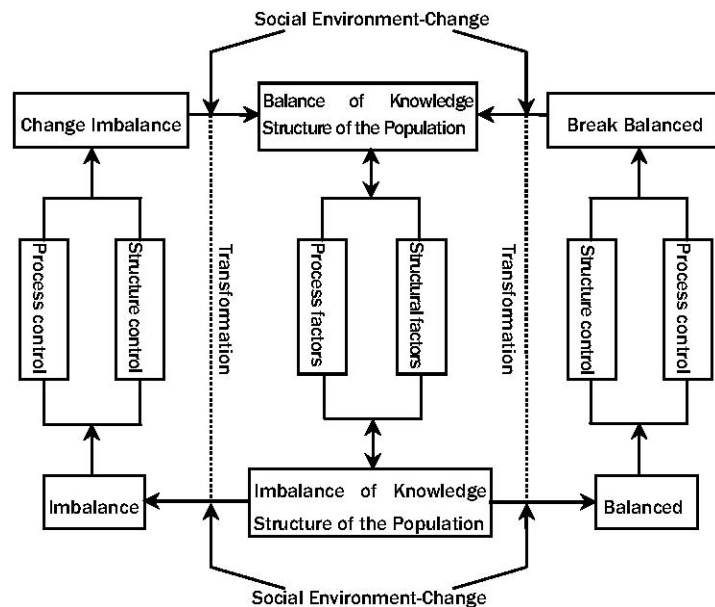

Figure 2: Imbalance and Balance Relation Model of Knowledge Structure of the Population

Overall, the balance of knowledge structure of the population is the state between imbalance and balanced that is suitable for social economic structure and as well social development needs. Structural factors and the factors of the population are both the reason to introduce the imbalance and balanced of knowledge structure the population and the important approach and mechanism for us to use them to change this sort of imbalance and reach the balance state of knowledge structure of the population.

2. THE TRANSFORMATION FACTORS OF KNOWLEDGE STRUCTURE OF THE POPULATION: PROCESS FACTORS AND STRUCTURAL FACTORS

There are two impacting variables of process and structural factors are introduced in above Imbalance and Balance Relation Model of Knowledge Structure of the Population. Process factor refers to unstable change process of the population that normally comes from the influence of occupation changes, migration, and population type transformation, etc. For instance, occupation change of the population changes the knowledge structure of individuals in occupation change with the results of changing knowledge fields and knowledge proficiency of overall population, causing the change of knowledge structure of the population. Structural factor refers to heterogeneous structural factor of the population, normally including age structure, gender structure, marriage and family structure, space structure, and social class, etc. For example, the impact from age structure of the population on knowledge structure of the population is achieved through knowledge composition difference made by different age groups. Different age groups master different knowledge and this knowledge difference is not only reflected in knowledge field structure but also in knowledge proficiency structure. The difference of age structure of the population will lead to the imbalance or balanced in knowledge structure of the population if it reaches certain extent.

How to understand the current transition of knowledge structure of the population in China? The ideal type method is a better method after all. Since the analysis method to use one or multiple dimensions to build up ideal type owes more explanatory power. What is more valuable is that as long as appropriate analysis factors are selected, ideal type analysis method can't become a rigid analysis mode and as well it is able to establish flexible analysis mode with future prediction capability. So-called ideal type refers to an abstract social form or social existence method that doesn't actually exist in real life. Extreme dimensions from above factors are two poles, and we can classify a certain number of ideal class types between these two poles. Ideal society state is likely a pivot while real social state is just one area between these two poles.
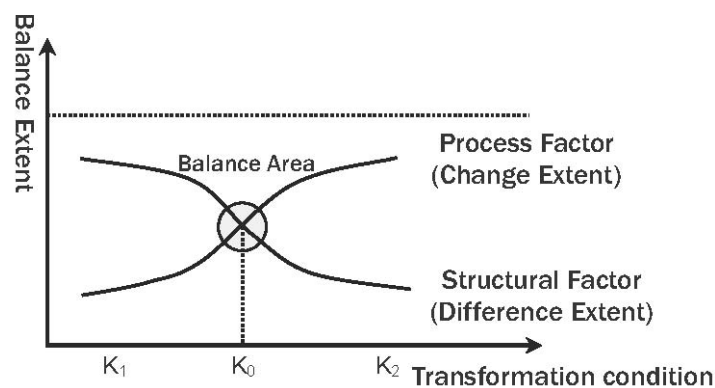

Figure 3: Transformation-Affecting Factor Model of Knowledge Structure of the Population

What we have done is to determine which area within these two poles our own real society locates.

Based on basic method of the ideal type, we choose balance extent and transformation situation as y-coordinate and x-coordinate respectively and build up above Transformation Model of Knowledge Structure of the Population. Since specific function model is more complicated, we here just provide related curve model. From the Model above, we can recognize that the balance extent of knowledge structure of the population is the function of social transformation situation.

First, in terms of process factor of the population, the larger change extent of population process indicates in theory a more open society, corresponding to the higher balance of knowledge structure of the population accordingly, which can be regarded as an increasing function. In real life, however, both the minimum of change K1 (form balanced) and the maximum of difference K2 (structural imbalance) are regarded as imbalance of knowledge structure of the population. This paper briefly elaborates this theory as follows.

The occupation change of the population inevitably generates the change in occupation structure of the population. The change in population education, population distribution and migration, and income and labor market, etc will all cause occupation change of the population. This kind of occupation change in fact is mainly reflected in the change in occupation regions and fields. Yet the change in knowledge structure of the population is as well reflected in occupation regions and fields. Occupational structures in different regions are different; this difference makes population migrate to regions with higher occupational structure, or drives population to regions with lower occupational structure under competition. Migrations among regions makes overall population need to proactively adjust the components of knowledge structure or passively fit new components of knowledge structure in order to suit occupational structure needs in the regions to which the population migrated. Occupational structures in different fields are different as well, which makes occupational structures of the population change among different fields. It doesn't matter to change to lower level or higher level fields, it all requests occupational people to change their previous knowledge structures to suit requirements on knowledge fields and proficiency demanded by new knowledge structure. And this structure causes the changes in knowledge structure of the population as well. Above factors will all generate the imbalance in knowledge structure of the population or maintain a balanced state.

Occupation change, however, will inevitably introduce population migration. The changes in knowledge structure of the population is the results of population migration and population distribution alternation, and one of the reasons of this type of change. The impact from population migration on imbalance and balanced in knowledge structure of the population is huge. In one aspect, population migration makes the population with certain knowledge structures lose relative balance in different regions and fields; and in the other aspect, the tending force of being requested (this request is reflected as disadvantaged groups require establishing a balance state in overall knowledge structure) to reach balanced from knowledge structure of the population itself has been strengthened, therefore introducing the balanced that doesn't fit overall society requirements. Modern migration tends to generate, referring cities, sidelined communities and forms specific knowledge structure of the population in sidelined communities, which objectively makes up the force to cause the imbalance and balanced in knowledge structure of the population. This is just the metaphor of "peacock flies southeast" phenomenon in China. And it is just the most vivid empirical portraiture of "Talent Highland in Yangtze River Delta" and "Labor Highland in Zhujiang River Delta" in current China as well.

In addition, population change includes the changes in reproductive system, death system, and migration of the population, also affecting the change in knowledge structure of the population. And this part will be elaborated here. Conclusively, unstable process factor of the population introduces the driving force for the transformation of knowledge structure of the population, and, off course, imbalance as well.

Second, in terms of structural factor of the population, the larger structural difference of the population indicates in theory more asymmetric society, corresponding the lower balance extent of knowledge structure of the population, which can be regarded as a function. In real society, however, the minimum of change K1 (form balanced) and the maximum of difference K2 (structural imbalance) can still be considered as the imbalance in knowledge structure of the population. This paper

elaborates it as follows.

The difference among different age groups in responding to the appearance of new knowledge fields and constant improvement in knowledge proficiency is tremendous. If this difference in responding the change of knowledge structure reaches to certain degree, there will be imbalance in knowledge structure of the population; while it is still possible to reach the balanced state in knowledge structure of the population by reducing the difference. The gender structure change of the population is also one of the reasons to cause the imbalance in knowledge structure of the population. There is substantial difference in both fields and proficiency of knowledge components between men and women in a society; men's knowledge components are normally higher than women's. There is significant difference in education scope and extent themselves between men and women; and there has always been difference kept in knowledge components in terms of gender so as to fit social development needs. If the change in gender structure moves towards the direction to enlarge this sort of difference, imbalance in knowledge structure will then be introduced. Otherwise, imbalance in knowledge structure of the population will be reflected as a balanced state.

Space structure change of the population is reflected as distribution change of the population and urbanization process of the population. The distribution change of the population and urbanization process of the population cause the space distribution difference in knowledge structure of the population, and this difference could lead to the distribution imbalance in knowledge structure of the population when reaching a certain degree. Population distribution in China is an imbalance state between southeast and northwest; in the process of population urbanization, there is a binary structure of country and city, which had already made up the imbalance in knowledge structure of the population in China itself. If the difference in population distribution or the amount of migration from county to city exceeds a certain degree, there will be imbalance in knowledge structure of the population between different regions or city and county. If this difference is over reduced or moves towards certain opposite direction; it then goes towards balanced. Likewise, social status classification is also in important factor affecting the imbalance in knowledge structure of the population. Social status classification introduces different social classes in terms of economic and social status. Normally higher social classes own higher social status than lower ones, more education opportunities, and more advantages to gain other social resources, generating current or potential difference in knowledge fields and proficiency among different classes. If this difference loses a certain balancing mechanism, imbalance or balanced in knowledge structure of the population will then be introduced.

In addition, factors of the changes in marriage and family system, the changes in marriage and family structure, the establishment of new marriage and family forms will also contribute to the imbalance in knowledge structure of the population. The impact from the changes in marriage and family structure on knowledge structure of the population is normally introduced by mutual influence among family members or the family control on children's socialization process. In short, the influence from heterogeneous population structure on the imbalance in knowledge structure of the population can not be ignored. And there is potential prediction. The factors of population aging, poor-rich polarization, regional imbalances, expansion of single-parent families, and masculine-based traditional thinking, etc in China are exactly this potential imbalance prediction. The pyramid and inverted pyramid structures in the higher education ratio between city and country is the perfect experience to demonstrate this phenomenon.

At last, ideal balance state is neither extreme imbalance nor extreme balanced; and it is rather a converged critical point. In fact, the balance in knowledge structure of the population is just a state between imbalance and balanced as well as to fit social economic structure and address social development needs. We can comprehend this balance state as the areas covered by the critical point (K_0) in real life. No matter the changing condition in transformation or the condition of difference, when $K > K_0$, knowledge structure of the population will be in imbalance; while when $K < K_0$, knowledge structure of the population will be in balanced. It can be recognized from above model that the model is similar to Logistic Curve with the regularity close to ecological balance. Process factor curve can be considered as up-accumulation frequency distribution curve while structural factor curve as down-accumulation frequency distribution one. The minimum and maximum changing conditions don't correspond to balance and balancing critical point is just the place with the largest slope of the two

curves; or K_0 is the average value of both changing extent and difference extent. In this level or close to this level, both the knowledge structure of the population and social economic structure are then in balance level.

3. THE IMBALANCE EFFECTS IN KNOWLEDGE STRUCTURE OF THE POPULATION: THE CHANGES IN BOTH KNOWLEDGE STRUCTURE OF THE POPULATION AND SOCIAL ECONOMIC STRUCTURE

We can clearly recognize from above analysis that the balance in knowledge structure of the population is bidirectional rather than unidirectional. Since it is requested to fit social development as well as balance out with social economic structure. What we mentioned above regarding the construction of linear relationship between knowledge structure of the population and social economic structure belongs to an ideal type analysis, and this linear relationship only belongs to ideal state. In fact both market and social transformation in China cause significant changes in social economic structure and there is as well unprecedented unbalance in knowledge structure of the population. The unbalance in knowledge structure of the population is then reflected in two corresponding concepts: the imbalance in knowledge structure of the population and the balanced in knowledge structure of the population.

3.1 Unbalance Effects and Social Risks

The bidirectional relation of imbalanced and matching knowledge structure of the population indicates knowledge structure falls behind social development; while the balanced in knowledge structure of the population means social development falls behind knowledge structure. The social transition in China is establishing a balanced state in knowledge structure of the population. However, under the impact from both structural factor in the population and process factor, previous balanced state in knowledge structure of the population has been broken and the unbalance in knowledge structure of the population has thereby been generated, and this type of unbalance deviates either to imbalance or balanced. The transformation from traditional society to modern one in China is unable to pass over the unbalance in knowledge structure of the population. In addition, the imbalance and balanced in knowledge structure of the population as well introduces insurmountable unbalance effects. For instance, poor-rich polarization, regional imbalances, and urban-rural separation, make up risks or potential risks in social operation. In short, unbalance effects in knowledge structure of the population have become a major factor to trigger social risks in social transformation. We mainly use social risk probability predicted for future to present this unbalance effect. We assume social risk and balance state in knowledge structure of the population are in inverse relationship with S standing for social risk, then there generates following function: $S = S(T)$ showed as follows.
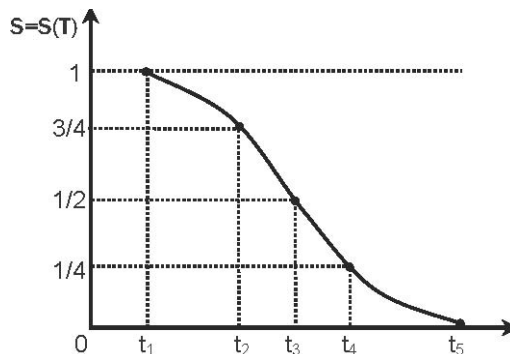

Figure 4: The Relation between the Balance Condition in Knowledge Structure of the Population and Social Risks

When $t < t_1$, S (T) =1, it indicates that society can not in sound operation when balance level of knowledge structure of the population can not reach certain level. When $t_1 < t < t_5$, it indicates social risks are reduced with the increase of the balance level of knowledge structure of the population. When t is big enough or t reaches or exceeds a certain value t_5, S (T) =0, indicating there will be no social risks occur when the balance level of knowledge structure of the population, among which, critical point t_1 indicates form balanced and structural imbalance in knowledge structure of the population co-exist, corresponding to complete unbalance effect; critical point t_2 indicates form balanced in knowledge structure of the population, corresponding to complete balanced effect; critical point t_3 indicates structural imbalance in knowledge structure of the population, corresponding to complete imbalance effect; critical point t_4 indicates the balance condition in knowledge structure of the population with neither form balanced nor structural imbalance, corresponding to relatively realistic balance effect; and critical point t_5 indicates the balance in knowledge structure of the population, corresponding to Absolute theoretical balance effect.

In fact it is impossible for the balance in knowledge structure of the population to achieve absolute balance state. If it were, the social risk possibility in area would then be almost zero. Area $t_4 < t < t_5$ is considered as realistic balance state, in which the social risk possibility is less than 1/4. It is as well impossible for knowledge structure of the population to reach absolute unbalance state. If it were, the social risk possibility in area $0 < t < t_1$ must be 1. We often call the situation of $t_1 < t < t_5$ as unbalance in knowledge structure of the population. However, the destructiveness from structural imbalance is far more severe than form balanced; the social risk possibility for structural imbalance (t_3) is close to 1/2 while for form balanced (t_2) close to 3/4. Based on both the model and the reality in China, China is in the transforming phase from agricultural society to industrial one and as well in the overall environment changing from industrial society to knowledge one, and the potential risks from knowledge structure of the population and social economic society are growing. In some sense, the changes from knowledge structure of the population and social economic society are not only results but also measures. Or, it needs to achieve critical point (t_4) balance between generated imbalance and balanced.

3.2 The Change in Knowledge Structure of the Population

The changes in knowledge structure of the population due to relative expansion or reduction in people-mastered knowledge fields or relative improvement or retreat in people-owned knowledge proficiency, make knowledge structure of the population have resilience. It is affected by following to factors: one is the expansion in overall knowledge fields in society verse relative expansion or reduction in people-mastered knowledge fields; the other is the improvement in overall knowledge level in society verse the improvement or retreat in people-owned knowledge proficiency, or the changes in both breadth and depth. In one hand, with constant economic and social development knowledge scope and field in overall society will be enlarged under the condition of no knowledge handover faults. This however doesn′t necessarily relatively expand people-mastered knowledge fields, and it even could cause relative reduction in people-mastered knowledge fields due to the reasons from human being themselves, introducing a phenomenon of being out of times, or the enlarging distance with emerging and existing knowledge fields. On the other, knowledge level in overall society will be improved with no knowledge degenerating. But people might not reach this depth of knowledge; it therefore doesn′t necessarily relatively improve people′s knowledge proficiency. And it even relatively reduces people′s knowledge proficiency because of the reasons from people themselves, causing a phenomenon of superficiality in knowledge proficiency, or the enlarging distance between high level knowledge and middle-lower level knowledge.

It can clearly be seen that the direct consequence of the resilient knowledge structure of the population causes the imbalance or balanced in knowledge structure of the population in dynamic changes. The development of resilient knowledge structure is rather bidirectional. In one aspect it can strengthen the imbalance in knowledge structure, or places reversed pull on this imbalance thus makes imbalance develop toward balanced. On the other it can as well keep knowledge structure balanced, or places reversed resistance on this balanced and breaks up this balanced. At this time, the imbalance and balanced processes in knowledge structure of the population keep moving under bidirectional effects

from the resilient knowledge structure of the population.

3.2.1 Education Preference and Structural Imbalance in Population Quality

Knowledge structure of the population, to some extent, is one of the results of educational structure and proficiency. Both the educational structure rationality and educational level in a society likely introduce the characteristic of knowledge structure of the population consistent with them. Education is the method of knowledge inheritance; and the implementation of educational course in overall society let knowledge structure of the population be maintained at some extent and as well constantly develop and change. It is reflected in two kinds of changes of knowledge field and proficiency: on the one hand the knowledge fields people themselves master and own keep corresponding scope under education intensifying and as well develop into broader scope based on existing knowledge fields; on the other the knowledge proficiency of the population, under education intensifying, constantly develops in-depth based on existing proficiency. Under ideal condition, education is always able to improve and perfect knowledge structure in whole society. But in general, the development in knowledge field and proficiency of the population created by education doesn′t necessarily reach the original requirements from the society. And realistic condition in general is a sort of unreasonable preference.

Education preference firstly introduces the structural imbalance in population quality. The so-called the structural imbalance in population quality means that the structure of population quality can not perfectly meet overall development needs from the society. In terms of empirical reality of current phase in China, the structural imbalance in population quality in general is reflected in following aspects: the first one is huge class difference in population quality, the second one is regional imbalance in population quality; and the third one is the big generation gap in population qualification. The former two are the horizontal difference in quality structure of the population, and the latter is the historical vertical difference in quality structure of the population. In one aspect, educational resource access has been stratified to certain extent among different social classes, which introduces significant difference in education among different social classes, therefore enlarging the difference in population quality. In general higher economic status corresponds to overall higher population quality, otherwise to lower population quality. In the other, educational quality difference in different regions as well generates regional difference in education, making it natural to bring population quality difference in different regions. While the generation gap in population quality is another situation; the situation itself is not the consequence of education preference, it is created by different education levels in different times instead. We must say it is a historical education preference for the fact that educational mode can not keep generation inheritance to some extent.

Under the situations of education preference and the structural imbalance in population quality, it is inevitable to generate the imbalance in knowledge structure of the population. Education preference triggers the structural imbalance in population quality, while by the time the different in population quality is large enough to introduce the structural imbalance, the knowledge structure of the population will be in imbalance. The imbalance in knowledge structure of the population is the result of social prediction at all; on the contrary a society needs to reach a sort of balance in knowledge structure of the population. However objective result can not be changed, the society therefore has been always seeking an effective mechanism to adjust education preference so as to find the balance in the imbalance in knowledge structure of the population. The imbalance in knowledge structure of the population occurs in the process of education preference and the structural imbalance in population quality, and reaches new relative balance under the action from social balancing mechanism.

3.2.2 The Falling of Traditional Culture the Pressure of Modernization

At any social form, traditional culture influence on current knowledge structure of the population is tremendous. No matter the inertia from disappearing traditional culture or thrust from inheriting traditional culture, all of them will influence existing knowledge structure of the population to certain extent. While inheriting and carrying forward excellent traditional culture, modernization power needs to push a greater part of the traditional characteristics to falling edge so as to meet the objective needs

from modernization. The change in knowledge structure of the population means to seek a juncture meeting the needs from modernization, while separating traditional culture. Prior to finding out this mechanism, it is restricted by two aspects of the falling of traditional culture and the pressures from modernization. Particularly, after the falling of some traditional culture that they themselves were suitable for the atmosphere of modernization, there left a gap or fault in knowledge structure of the population. It is fairly difficult to make up this gap in the process of modernization; the pressure from modernization suffered by knowledge structure of the population in its changes then seems even bigger. Under the double restrictions from both the falling of traditional culture and pressure from modernization, knowledge structure of the population will be relatively in imbalance or strike to seek a balancing mechanism under imbalance situation. In a sense, this is the reason we feel a sort of lost from the blur missing on traditional culture, and also the reason we have questions on the changes in knowledge structure of the population in the process of modernization.

3.2.3 Unfortunate Children in Chinese Families

The pressure suffered by people being educated in families comes from modernization first. The minor children in families suffer the pressures in education process from multiple aspects of families themselves, schools, and society, etc before keeping certain independence in society or schools. The result they strive to fit this pressure is the deformation in knowledge structure of the overall population in society. In real life, this deformation in knowledge structure is caused by multiple reasons.

First, the children in most of families have limited choices in education, and their education rights and choices are inevitably influenced by family members. Paternalism still largely exists in Chinese society, and the knowledge structure of the population in education age is, to certain extent, the consequence of parent choices. In view of assessing knowledge importance, they share homogeneous characteristics, making their choices tend to move to some same directions and therefore causing severe imbalance in knowledge structure of the population. Second, education modes in schools as well have homogeneous features and the talents educated under such modes in general stay at the same knowledge fields and proficiency. They won′t cause internal knowledge structure imbalance; however in terms of overall population, this situation will generate the imbalance in knowledge structure of the population. Third, the increase of uncertain factors in society reduces the safety factor for family children, and family members will confine them in safe environment, which reduces their social interaction opportunities, and lowers the variety of their life, and therefore affects the extent of the knowledge fields or knowledge proficiency they master, eventually leading to the imbalance in knowledge structure of the population.

3.2.4 Knowledge Loneliness verse Knowledge Overspreading

The convergence in people's educational choices has changed in another aspect, which is the imbalance in structural characteristic of knowledge itself taking population as its carrier. It is reflected in two aspects: the first one is the strengthened utilitarianism verse the reduced pursuit of knowledge, which can vividly be described as the loneliness of knowledge; the second one is that the unlimited increase of modern knowledge contents makes unreasonable components in knowledge grow up or makes knowledge generate relative surplus, and in another hand it lacks the reasonable factors from traditional culture that has already been falling down, this phenomenon can be described as knowledge overspreading.

The consequence of knowledge loneliness makes knowledge gradually go far away from tradition and as well lose its original color while knowledge overspreading then makes people confused when selecting and taking in knowledge. The ultimate consequence of knowledge loneliness and knowledge overspreading as well makes the imbalance in knowledge structure of the population. There is a large extent of this sort of imbalance in reality. Knowledge utilitarianism makes people selectively master knowledge based on their own utilitarianism needs instead of the needs from pursuit of knowledge, which must generate certain convergence due to the restrictions from social economic, therefore causing the unreasonableness in people's knowledge structure. The increase of unreasonable components in

knowledge will objectively affect the development of associated knowledge fields as well, therefore weakens the development of knowledge in various fields and multiple levels of proficiency, under which knowledge structure of the population will be imbalanced. This imbalance is reflected more in knowledge aspect.

3.3 The Changes in Social Economic Structure

The changes in cultural structure, in turn, will affect the changes in social structure in various aspects. The imbalance and balanced in knowledge structure of the population, to some extent, is the reflection of the changes in cultural structure, and it has potential and present influence on the changes in social structure. The impact from the imbalance in knowledge structure of the population on social structure is both broad and profound, involving various social aspects of politics, economy, and culture, etc. This paper will focus on elaborating its impact on social economic structure of the population. The social economic structure of the population refers to the population structure established through classifying population into various components based on certain social and economic symbols It in general has main forms as follows: the first is the occupational and industrial structure of the population, the second one is the cultural and educational structure of the population, the third is the social life structure of the population, and the forth is the class structure of the population. The changes in knowledge structure of the population will then constantly and in-depth impact these four aspects.

3.3.1 The Imbalance in Knowledge Structure of the Population and the Structural Changes in Occupations and Industries of the Population

The occupational and industrial structure of the population is established on certain knowledge structure of the population, and it includes two aspects of occupational structure and industrial structure. In terms of knowledge structure of the population, the industrial structure of the population refers to the distribution of the population with different occupational structures in different occupational fields; the industrial structure of the population refers to the distribution of the population with different industrial structures in different industries. Factors such as migration, population distribution, age and gender structure of the population, and the changes in the social and economic status of the population, are also the reasons to introduce this flow. These factors cause the changes in occupational and industrial structures of the population in a direct form. The unbalance in knowledge structure of the population directly acts via these factors. The imbalance or balanced in knowledge structure of the population makes some knowledge-typed people flow to some occupations or industries. In one aspect, there is a large amount of demand on the population with certain knowledge structure in some occupations or industries while just a little amount in other occupations or industries; in the other, the population with certain knowledge structure selectively flow to a certain occupation or industry, making the population distribution in some occupations and industries lose relative balanced state and causing the structural changes in occupations and industries of the population.

3.3.2 The Imbalance in Knowledge Structure of the Population and the Structural Changes in Culture and Education of the Population

People in general just consider the difference in cultural levels of the population when inspecting the cultural and educational structure. The difference in cultural field in face is equally important. The consequence of the imbalance and balanced in knowledge structure of the population is not only the difference in cultural levels but in cultural field that the population belong to. The cultural and educational structure of the population reflects cultural quality situation of the population; and it is one of the important symbols to measure the population quality of a country. The structural factors of the population generate the difference in educational environments and conditions of the population or make them change. And this change causes the imbalance or balanced in knowledge structure of the population with the direct consequence of making the cultural and educational structure change accordingly.

The difference of the population within the cultural fields they belong to is affected by the two process variables described previously: one is the education preference; the other is the falling of traditional culture and the pressure of modernization While making cultural level difference, the education preference generates the difference of the population within the cultural fields they belong to; and population thereby over gathers into a certain knowledge field, making the cultural and educational structure of the population be inclined to a certain aspect. The impact from the falling of traditional culture and the pressure from modernization on the cultural and educational structure of the population is the result that the population itself can not choose in a balanced way. Under the double restrictions of the falling of traditional culture and the pressure from modernization, the spontaneous choices made by the population is unable to keep the balance of knowledge structure of the population in overall society and therefore causes the biased changes in cultural and educational structure of the population.

3.3.3 The Imbalance in Knowledge Structure of the Population and the Changes in the Social Life Structure of the Population

The social life structure of the population is reflected in family and marriage structure and new social lifestyle structure, etc. The family and marriage structure of the population refers to the proportion of population in various marriage statuses in overall population. Yet the family structure of the population refers to the proportion of population in family structures in overall population.

In one aspect, people's educational difference will generate different views on marriage life yet the unbalance in the knowledge structure of the population strengthens this difference, these views are reflected via people's behaviors and therefore cause the changes in the marriage structure in the population. In the other aspect, people's educational difference will also influence their psychological and behavioral patterns in family life; particularly when there is large difference in the knowledge structure of the population people establish various views on family life, and these views will be reflected through people's behaviors and thereby cause the changes in family structure in the population. People's new social lifestyles are formed by the effects of various factors such as external environments in society. The unbalance in the knowledge structure of the population then promotes the formation of new lifestyle to a greater extent. The unbalance in the knowledge structure of the population makes people's comprehension on new lifestyle generate great heterogeneity; they all will seek and fit a new lifestyle within the scope allowed by the social conditions. In general, new lifestyle is more suitable for social development and more favorable for the perfection of individual personality and the needs of self development.

3.3.4 The Imbalance in Knowledge Structure of the Population and the Changes in the Class Structure of the Population

The change itself taken place in the difference in the economic and social status of the population is one of the reasons of transition of the knowledge structure of the population. Yet the transition of the knowledge structure of the population will, in turn, strengthen the level of this difference with the consequence of causing the change in the social classes of the population. The impact from the knowledge structure of the population on the transition of class structure is reflected in two aspects: one is diffusion power in horizontal level; the other is traction in vertical level.

The change in horizontal level refers to the change in class nature for the classes in the same level of the population, or one class does not belong to its original one anymore but belong to another one instead. This situation is more introduced by the change in the knowledge fields of the knowledge structure of the population, and the unbalance of the knowledge structure of the population strengthens the possibility of this change. The population accepting and integrating into the same knowledge field has homogeneity, and they don't necessarily belong to the same class. The homogeneous population however has possessed significant conditions to integrate into the same class, this new class could possibly establish under the action of both horizontal diffusion power and associated factors, and the class structure of the

population will therefore be changed accordingly.

The change in vertical level refers to the change in class level of the population, or one class level does not belong to its original one anymore. This situation is caused by the change in knowledge fields and knowledge proficiency of the knowledge structure of the population. The unbalance in the knowledge structure of the population introduces the needs to vertically flow up for the contact structure of the population, the classes with superior knowledge fields or growing knowledge proficiency request to break original class structure, promoting the formation of new class structure.

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