

# ***Cultural Habitus, Poverty Traps and High Incidence of Esophageal Cancer—Based on A Field Observation in Linzhou, China***

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**Abstract:** In the paper, the human behavior risk factors of esophageal cancer will be summarized and sorted out, Linzhou, a high-incidence area of esophageal cancer in northern China, is regarded as the field observation object for the study, and it is hoped that the reasons for many risk factors continuously existing in high-risk areas are explained by Bourdieu's habitus theory, meanwhile, the existence and prevention of esophageal cancer in Linzhou was described correspondingly, and the economic and cultural background behind it was tried to explore. As an epitome of major prevention and control of diseases in rural areas of China, the study can be an effective supplement to anthropology and epidemiology in the field.

**Keywords:** Medical anthropology, Epidemiology, Esophageal cancer, Linzhou of China, Habitus

## **1. Introduction**

In 2018, the global cancer research data showed that the incidence of esophageal cancer ranked seventh among all types of cancers, and the mortality rate reached sixth [1], occurred frequently in men and the elderly increasing from 40 years old and reaching peak when aged 75 [2]. In recent years, the incidence and mortality of esophageal cancer standard age has generally kept a decline trend [3]. But due to the intensification of the world's aging society, the number of morbidities as well as deaths is still continuously rising [4]. Among them, influenced by the improvement of economic level and medical and health conditions, developed countries tend to be stabilized, and the incidence of esophageal cancer in partial areas has reduced [1,5], however, the incidence and mortality of esophageal cancer in developing countries generally still hold an upward trend [4]. Asia accounts for 75% of esophageal cancer morbidity cases, among them, China has the highest incidence burden [6], occupying about half of the total new esophageal cancers globally [7]. In China, the central and northern region is most severe, showing high degree of regional aggregation [8], especially at the intersection of Shanxi, Henan, and Hebei, and the incidence of esophageal cancer is in an irregular concentric distribution with high middle and constantly decreasing periphery [9]. Linzhou of Anyang city studied in the paper is centered in the concentric circle.

From the perspective of medical anthropology, the occurrence of diseases is the combined effects of biological, environmental, social and cultural factors etc. [10] In the context of anthropology, "risk factors" are gradually used to identify the impact of human behavior on diseases [11], although there

is still no definite conclusion about the carcinogenic cause of esophageal cancer, however, it is clear that it is diversified by multi-factorial effect including geography, gender, economic level, ethnic genes, histology, etc. [4,12]. For environmental factors, drought [13], water quality [14], urbanization, air pollution, etc. can influence the occurrence of esophageal cancer [15], except genes and natural environment, human behavior is also one of the keys to the pathogenesis of esophageal cancer, and the epidemiological studies have provided its sufficient evidence, for example, the significant harm of smoking and alcohol habits [16,17], excessive intake of pickled products [18-20], the living habits of high-temperature fast food [6,21,22], staple foods centered on wheat and corn [12], and related to obesity, vitamin deficiency, and health status [7,9,23]. Meanwhile, the incidence in rural areas is higher than that in urban areas<sup>7</sup>, and individual's socioeconomic status, living quality, and nutritional level have influenced the onset risk of esophageal cancer [2,8,13,24].

Esophageal cancer is the most common cause of death in Linzhou, in a survey, it accounted for 16% of the area's population cause of death and 65% of all deaths from cancer with obviously low in the south and high in the north distribution [25], since 1959, the esophagus problem in the area has been highly attached great attention by the government. The prevention and treatment of key diseases has been deployed locally, and the high incidence as well as mortality of esophageal cancer have been alleviated to some extent along with the improvement of economic conditions and nutrition and medical conditions in Linzhou area. Many scholars have carried out explorations from many aspects for the high incidence of esophageal cancer in Linzhou, such as water source, diet, living conditions and health [9,26,27], some geographical factors explain the high incidence of esophageal cancer in Linzhou [28]; Study the relationship between the nutrition intake and the risk of death from esophageal cancer of Linzhou patients etc. [29], but aimed at the high incidence of esophageal cancer and changes in the incidence of Linzhou, currently, the academic explanation is mainly limited to epidemiology and medical treatment without overall description of the economic and cultural background behind it. In the paper, selected a case village in Linzhou, took field observation data as the research basis, and tried to adopt anthropological methods to explain deeper issues such as economic and cultural issues related to esophageal cancer in China's rural society represented with a village in Linzhou, which can be an effective supplement to current research in the field.

The holism principle of field observation has been repeatedly emphasized, in the study, important information and opinions on health issues can be obtained by key ethnography methods, and many anthropologists focus on the social problems that diseases bring in their research, for example, the relationship between disease and social culture as well as the complex reasons for the interaction of multiple factors [30,31]. Meanwhile, the noteworthy is people's attitudes towards diseases in a specific cultural environment, and culture can shape people's powerful explanations of diseases, closely related to the occurrence, manifestations and treatments of diseases [32-34], and can dialectically express the relationship between culture and disease treatment [35]. Moreover, the collective environment has psychological moderating effect on diseases [36], especially in villages with a high incidence of diseases, the socialized life of villagers also requires researchers to obtain information by participation. It forms certain requirements on its process of researcher's, including the attention to thematic structure, interpreting the attributes and qualities they endow diseases and symptoms by eliciting people's special cultural vocabulary and terminology, meanwhile, the relationship between the research object and the society as a whole should be established, and combining them by understanding [37].

The high incidence of esophageal cancer has a long history in Linzhou, and the documents can be traced back to the Qing Dynasty, named "pour food" and "choking food" to describe its onset status by the folks. Patients often have fish gall bladder during onset in order to relieve their pain but cannot get effective treatment, from 1959 to 1982, there were 19,378 cases of esophageal cancer recorded in Linzhou area, and the local saying "you can eat grain but not wheat" is a proper description of survival

duration after the onset of patients. The village selected in the study is located in Lijia Village, Yuankang Town, South of Linzhou City, 20 kilometers away from the downtown and it covers more than 1,000 people. Esophageal cancer has a high incidence and it is typical, and the author has established stable connection assisted by local medical units, which meets the basic requirements of field observation. During eating and living with villagers, except guest observation and unstructured interviews with ordinary villagers, multiple authoritative persons in the village were selected, such as village committee cadres, old doctors, clinic staff, for more in-depth semi-structured interviews. Carry out case tracking of a 69-year-old patient Guo with esophageal cancer after recovery, obtaining a large amount of first-hand field data including the social life, cultural habits and economic conditions of the villagers. In addition, the abundant local county records can provide powerful guidance and supplements for the study, among which the historical contents such as financial and economic history, disaster records, cultural changes can be used as the powerful basis for discussion.

## **2. Bourdieu's Theory of Habitus**

As an important part of Bourdieu's practical sociology, the field-habitus theory is a kind of objective relationship network can exist among various things, and the whole society can be regarded as a large field, which is composed of multiple small fields such as economy, politics, culture, rights and other small fields. Each field has its own rules and logic [38]. Under the premise of the current epidemiological research results, the occurrence of esophageal cancer is clearly influenced by various living habits. Bourdieu used the conception "habitus" based on the insistence of social reality and the duality of individuals to describe the reality that the subjectivity of the individual and the objectivity of the society permeate each other, believed that the objective structure has a subjective result [39]. Bourdieu defines "habitus" as a durable and transferable endowment system in which villagers with a high incidence of esophageal cancer internalize their living objective conditions and life experiences in an unconscious way, finally, leading to the formation of "risk factors" that cause the disease, meanwhile, "habitus" enables to generalize its basic "genesis frame" to all areas of life by similar transformations [40], including behavior, thinking, diet, etc., forming vertical and horizontal transmission with a stable structure of existence in epidemics high-incidence areas. The concept of "habitus" can fit individual behaviors with the objective social reality generated by the esophageal cancer diseases, providing a good theoretical framework for the study.

## **3. Habitus and Natural Conditions**

As a set of profoundly internalized dominant tendencies that lead to behavior, "habitus" is a kind of structure with structural capabilities, and its production is the result of specific social conditions [39]. Linzhou is located at the eastern foot of the Taihang Mountains in North China, belonging to warm temperate sub-humid continental climate with four distinct seasons and clear distinction between dry and wet seasons. It was named due to abundant forest vegetation in ancient times. However, because of immoderate logging, the mountain soil is exposed with serious phenomenon of bare hills, in addition, caused by natural geographical factors, the drought problems in some areas of Linzhou is severe, and there are even stories of villagers committing suicide because of overturning buckets, in the 1960s, the people of Linzhou overcame difficulties to build famous artificial water canal "Red Flag Canal" for solving water problems. Meanwhile, the natural disasters occur frequently, since the hundred years of county's records, disasters such as locust plagues, droughts and floods, wind and thunder have been continuous, for example, the statistics of rainstorm alone have occurred 45 times within 29 years, and severe droughts can occur in 1 year or 30 years for the interval. For example, wheat and corn are the most major crops in the area. Influenced by unstable natural conditions such as droughts and floods, the most major agricultural economy in Linzhou for long time has almost

"relied on weather", which also makes people form the habit of not eating grains in season during the historical development and try their best to store food for guaranteeing the ration crisis that cannot be stabilized in a bumper year. For vegetables, due to lacking water resources, vegetables and other cash crops are rarely planted. Seasonal vegetables such as radishes and eggplants can be planted in rainy summer, but due to the drought in winter, the harvestable radishes are often made into pickles in vat for consumption when vegetables are lacked in winter and spring, named "old vat dishes" by the locals.

The village in the case is located in a plain, surrounded by mountains in the west, and more than ten waterways in the south, during the flood season, the water flow is abundant in the rainy season, however, in the non-rainy season, still face the problem of drought. There is a large pond with diameter about ten meters in the center of the village for water supply during the drought. The water in the open pond is hard to flow, and easy to accumulate impurities and bacteria with poor quality of water, it was abandoned after the popularization of wells about 20 years ago. The diet of the villagers is simple and fast in the village, in morning and evening, basically, porridge, and noon is the main meal, generally, rice and noodles alternate. For each meal, supplemented by seasonal vegetables and the "old vat dishes" named by the locals. The practice of lunch is uniform in the observation with two stoves cooking rice and vegetables respectively, and the bowls are large, after food are done, they often place vegetables on the staple food, which is convenient for them to be served directly by putting one bowl together. In the village, squat and chat with neighbors when eating by the side of road, the phenomenon of fast food with hot meals and is still very common in observation with large local temperature difference between day and night, and rural residents have early daily routine, so they do demand fast hot meals to warm up. Due to lacking of vegetables, and difficult to afford it every day for high price of meat and eggs, locally, rarely have stir-fried dishes served on the table, and all three meals a day can be easily picked up and create conditions for fast food. If you rush to the busy farming season or engage in all kinds of construction-based labor and are eager to work, it is easy to directly get rewards such as physical comfort and time saving in the habit of hot meals and fast food. The biological nature of the human body adapts to it, and the digestive tract gradually accepts high-temperature diet, which further consolidates the habit of hot meals and fast eating as well as squatting habit, making the digestive tract bend. The long-term stay of high-temperature food also increases the damage to digestive tract. It is common for rural residents not to take shower for long time and the dental kits are obviously not used for long time, the teeth quality of villagers is generally poor, after middle and old age, the quality of teeth declines faster and even they fall off. Not enable to chew food, which causes large particles of residue more easily damaged to the digestive tract.

In Bourdieu's social practice, the family field is the main place for capital transmission, and its resources are passed from parents to children in order to ensure the social reproduction of the family and its members [41], similarly, the family also serves as a transmission place of multi-cultural habits. After his wife died many years ago, Uncle Guo lived with his son, daughter-in-law, and two granddaughters, diagnosed with esophageal cancer two years ago, after timely treatment, he gradually improved better. In his daily life, started at 6 o'clock in the morning, after getting up, he simply took morning exercises in the yard, and was never observed the habit of oral cleaning. Afterwards, made simple breakfast for the family, mainly corn meal or millet porridge with some pickles. Drinking steaming porridge quickly in cold morning does have good warming effect. The most important lunch of the day was usually cooked by his daughter-in-law with two stoves cooking rice and noodle staple food and vegetables simultaneously, after the completion, the meals were placed in the same larger bowl to bring outside, and they were eating while chatting with the neighborhoods, if there is excess leftover at noon, it will be put in the refrigerator for dinner by heating with porridge. It was observed in summer, thus seasonal vegetables can still be commonly used in the three meals, however, in autumn, "old vat dishes" will be used often to replace seasonal vegetables enriching the dining-table.

During the observation, it was found that hot meals and fast food are still a common phenomenon in Uncle Guo's home, during his recovery, he ate slightly slower than he did before the illness. However, brother Guo still has fast eating habit, and the steaming and freshly cooked gruel can be quickly finished by Brother Guo by spinning the bowl, when asked if he knows such habit is related to esophageal cancer, brother Guo smiled and just replied that he was used to it, faced with the esophageal cancer which mostly occurs in the elderly, young people like brother Guo can't directly realize the fear it brings, and it's surprising that uncle Guo's 9-year-old granddaughter could finish such a bowl of hot porridge very quickly, which made us worry about it. In such a field of family culture, habitus generates in socialization, by experience, habit or gentle repetitive actions, as unconscious social conditioning instead of deliberately indoctrinating [42]. The country's temperature is cool at around 7pm, after dinner, uncle Guo's family will set off to the small square centered in the village, and children often play there, and the elderly often play cards or chat with cigarettes in their hands sitting together under the lamp. The villagers have few options for entertainments, and such activities are enough to relax the villagers who have worked hard all day. Uncle Guo, who suffered from esophageal cancer, is still enthusiastic about such collective life of the village. His favorite entertainment is playing cards, and such activity often lasts from 7 pm to 10 pm, and the villagers in the square will successively go home after 10 p.m. Uncle Guo's family often returns home that time, after his son's family settled down, uncle Guo living alone in the other room will start his own leisure time, he bought many vacuum-packaged instant chicken thighs and beer, even though experienced esophageal cancer, still retains the habit of drinking. Night time, getting a piece of chicken thighs, opening a can of beer, and turning on the TV for random program, it should be the most pleasant time of the day.

It can be seen that habitus reliably reflects the objective conditions that it originally formed from, producing consistent thoughts, perceptions and behaviors [41]. The specific natural environment of Linzhou determines the types of staple foods, the quality of water, and methods, diet and eating habits, and has maintained their continuity from generation to generation, as Bourdieu believed: the objective structure tends to produce the subjective tendency of structured production, and the subjective tendency of the production structured behavior in turn tends to reproduce the objective structure [39]. It makes Linzhou people's habitus of forming risk factors related to esophageal cancer disease more stable and structured.

#### 4. Poverty Traps and Habitus Changes

Economic status is directly relevant to health status, sanitary conditions, living habits, etc., and it is an unavoidable topic when discussing diseases. In economic activities, construction is the most famous industry in Linzhou, and the people of Linzhou have a long history of exporting labor as the construction industry. There are sayings about the export of construction labor in Linzhou, such as "a brick knife and two hands, betraying labor everywhere", "a hundred thousand troops going to the Taihang". According to local documents, Linzhou craftsmen participated in constructing many famous buildings such as the Summer Palace in Beijing and the Wild Goose Pagoda in Xi'an, as well as the construction of major projects such as the "Red Flag Canal" since the founding of the People's Republic of China, which makes Linzhou has cultivate a large number of skilled construction workers. The construction has also become the most major industry for the people in the region except agriculture. However, going out and working in the construction industry is also a forced choice because the local economic income cannot be guaranteed in Linzhou and monotonous agriculture cannot support the burden of individual, family and urban development. Poverty has been a mountain that can not be moved away by Linzhou people. Since history, the people of Linzhou have always been severely exploited by the rulers, and the tax records have contained the tax laws from the Qing Dynasty to the Republic of China. The taxation of various items even can reach over ten, and the

local economy of Linzhou has been struggling to maintain for long time even the situation of collapse. With the establishment of new China after the liberation, the society tended to stabilize, and the economy of Linzhou got certain improvement. Local financial documents show that the industrial output of Linzhou before the founding of the People's Republic of China only accounted for 0.1% of the total, and agriculture was the most major source of income. After the founding of the People's Republic of China, enterprises (mostly, construction industry) and industry and commerce (especially after 1959) have developed rapidly. Meanwhile, agricultural taxation will be gradually reduced from 11.5% until abolished. The support of the national poverty alleviation policy and the development of various economic forms have made Linzhou's economy develop to a certain extent, but on the whole, it is still at a relatively low level.

The main source of income of the villagers is agricultural planting and income of young and middle-aged laborers going out for work, and each household has a small amount of arable land, only three to four mu with main crops corn and wheat. The average annual harvest per mu is about 2,000 yuan, but influence by various natural disasters, it cannot remain stable throughout the year. From the observation, each household's farmland close to the water source will reclaim a small piece of land for planting seasonal vegetables, because of the high water consumption and the high cost of pumping irrigation from pumped wells, it is impossible to further expand the planting area and only meet their own consumption, like common Chinese grass-roots villages, the agricultural planting in Lijia Village is mostly undertaken by the elderly, and the young people basically choose to work outside in the provincial capital Zhengzhou or the neighboring province Shanxi, mostly, construction industry. Basic education is still very weak, Lijia Village and several surrounding villages concentrated on building a primary school in the original temple, and the faculty are mainly the recruited special post teachers, barely take on the educational tasks of local young children with low age, for joining the junior high school, need go to a market town five kilometers away. The villagers' education level is low, and few young people pass the college entrance examination to enter into universities. Influenced by local customs, the villagers undertake considerable economic pressure, based on local customs, if a young man of marriageable age wants to successfully marry a local woman, he need purchase a real estate in the county as well as send costly betrothal gifts from over one hundred thousand yuan to hundreds of thousands of yuan. To help young people successfully get married and have children, the older generations often need use up their savings and have debts to barely meet the large funds required for marriage, and it is almost also the main economic expenditure for local family in their lives. Under such huge economic pressure, the villagers will inevitably compress all other expenses in life, and frugality and economy are the most easily observed quality of life for them, and this is all reflected in their daily habits. The village is quite representative in Chinese rural areas and it is difficult to change the status quo by education input talents, transforming the economic structure etc. The villagers are more like falling into a trap of relative poverty that can only guarantee basic living, in Bourdieu's theory, poverty has continuity as social reality, because the structural disadvantage of class can be internalized into a relatively persistent tendency that can be passed among generations by socialization and produce self-defeating behavior. It makes it difficult for such villages in Linzhou to easily improve the economic level to free from influence on esophageal cancer incidence by the risk factor of insufficient quality of life.

The cost of a local esophageal cancer treatment operation in Linzhou is basically within 20,000 to 40,000, after the reimbursement by medical insurance, the amount that the patient need undertake is generally less than 10,000, but it is still a large expense for the villager like the Lijia case. Uncle Guo had symptoms of difficulty in swallowing two years ago, after the initial screening at the village clinic, he was sent to Linzhou Cancer Hospital, diagnosed with esophageal cancer and performed the surgery timely, in the past two years, he has recovered well. Uncle Guo farmed the family's 3 mu of land before his ill, and he can earn nearly 10,000 yuan in harvest. His son, Guo is 36 years old and works

in construction at Shanxi, returns to the village on holidays and weekends with 5,000 yuan per month. The daughter-in-law stayed in the village to take care of Uncle Guo and raise two children. Uncle Guo, who slowly recovered after the operation was no longer able to continue farming, suggested by the village cadres and doctors, he raised black goats on the hillside three kilometers west of the village and went to the sheep housing twice every morning and afternoon to herd the sheep. The flock was from four to over ten now with three to four sold annually, and each sheep can have an income of about 2,000 yuan, which not only performed moderate labor conducive to physical recovery, but also relieved the financial burden of the family in some degree. Uncle Guo loved tobacco and alcohol very much before his illness, especially the amount of alcohol consumed daily was quite staggering. From Uncle Guo, he usually drank twice a day before his ill with more than half a catty every time and it is a blend of industrial alcohol that badly damages to the body.

Every year, when it is International Health Day in April 7 and having other propaganda work requirements, the village will conduct propaganda on the prevention of esophageal cancer, which includes the attention of eating habits, eating less pickles, and keeping clean etc., but during the interviews, it is found that such propaganda does not significant effect on an area where esophageal cancer has long existed in people's lives, however, various related diet and hygiene habits have not been significantly changed, and all kinds of risk factors for esophageal cancer still commonly exist in the daily life of villagers by observation, because habitus resists changes. In the theory of habitus, as the primitive socialization has more power than subsequent socialization experience to shape the internal tendency, when the habitus encounters a new situation, there is certainly a continuous process of adaptation, which is often very slow and tends to perfect rather than change the initial tendency. The process of gradual improvement is just in the generational change, and the younger generation changes the original living environment due to migrant workers with the gradual realization of the popularization of network information, accepting changes easier in lifestyle.

## 5. Supplement and Discussion

In general, it was found that the risk factors brought by the social life habitus have not been significantly alleviated in the field observation, and the improvement of medical standards and the lifestyle of the community may be its potential factors. As the country attaches great importance, Linzhou has gradually established the village-township-city three-level screening and on-site prevention and control system since the 1960s. The village clinic mentioned in the case is responsible for the front-line screening and prevention publicity, and its main work is preliminarily diagnosing the villagers with suspected diseases for registration to ensure that the patients are sent to Linzhou City for treatment as quickly as possible. With the continuous improvement of tertiary prevention and treatment and better treatment methods, the statistics in recent years have shown that the early diagnosis rate has reached over 90%, and a lot of macro efforts have been made, for example, improving water quality, adjusting agricultural fertilizers to supplement the lack of elements, etc., esophageal cancer is no longer as scared as it once was. Moreover, esophageal cancer is a common disease in Linzhou and there are hundreds of residents who die of esophageal cancer every year, so that it is rare among the local population to hear that "there is no relative who had esophageal cancer." For example, Lijiacun is such a community that has common memory with its villagers knowing each other and owning the same economic and production forms as well as strong sense of cultural identity. In the long history of Lijia Village, suffering from esophageal cancer has become the common memory of the village residents. Almost every family suffered from esophageal cancer or the inheritance of stories, and the suffering experienced by new patients will no longer be a personal matter but shared by the entire village. The intensive social communication strengthens the villagers' real life, meanwhile, it has also brought the convergence and stability of habitus, weakened the fear

of serious diseases such as esophageal cancer, and diluted the villagers' vigilance against the disease from heart.

Take Lijia village in the study as an example, many villages in China have experienced poverty for long time in history, after the founding of New China, they became victims of overall economic development in the industrialized era. In the new era, caused by extremely dependent on traditional industries and the long-standing trust in small-scale peasant economy, it is difficult to get on the fast train of wealth growth. The trust in the small peasant economy makes it difficult to take the fast ride of wealth growth, instead, became a digester of the products of economic expansion with heavier economic pressure. In despite of the general upward trend of the economy and the support of national policies, and efforts have been made in water quality transformation, fertilizer transformation, toilet revolution, road hardening, etc. have improved the quality of production and life of the villagers to a certain extent as well as the prevention and control system, and the promotion of publicity work. But it is difficult to quickly improve the risk factors of esophageal cancer in people's life and behaviors, just like showed in the habitual study, current status of risk factors is separated from macro efforts such as policy and medical treatment, and can only be achieved in intergenerational studies, but only can be gradually realized in generational change. The characteristic local housing structure helps us glimpse the habitual change a little, and the brick houses built by the villagers consist of the front yard and the main body of houses, faced with south, the house is a long cuboid from east to west with the same house divided into two houses of east and west, and each has two same gates, separated by a wall in the middle of the house into two small households. However, they almost present the characteristics of the two eras, and one of the households living in the older generation still basically retains the relatively backward furnishings, but as various household appliances are popularized in the countryside, basic facilities including refrigerators, televisions, etc. are basically kept. For another house, the younger generation live there with various more modern furnishings, relative to the other side of the house, the quality of life is higher. It is exactly the manifestation of the intergenerational changes in the village, and the young laborers like Li have broadened their horizons due to migrant workers, and the young who can be observed in the village can also use smartphones to receive undifferentiated internet information input, as the main carrier of new things, the younger generation has brought fresh blood to the conservative and stable countryside, and many cultural and life habits of the new generation have also been changed therewith. The younger the population, the greater the acceptance of such improvements, and they are the promoters and beneficiaries in the improvement process. Esophageal cancer disease is featured with being easily acquired by the elderly, with the improvement of current relatively young population's behavior as well as quality of life, as time goes by, when the age of the improved younger population constantly increases to the old age when esophageal cancer easily occurs, both the incidence of standard age and the total incidence decrease are inevitable. In this regard, sustainably social and economic development, adequate opportunities for young people, and further improvement and popularization of education are necessary prerequisites for the improvement of the incidence of esophageal cancer and diseases that have behavioral risk factors like esophageal cancer.

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