International Journal of Humanities and Social Sciences

MARCH 2024 VOLUME4 NUMBER1

CONTENTS

Diagnosis and Preventive Measures of Respiratory Diseases in Chickens

Hao Caihong

Branch of Animal Husbandry and Veterinary of Heilongjiang Academy of Agricultural Sciences，Qiqihar 161005,China.

Abstract: Respiratory diseases are a common infectious disease in the process of daily raising chickens. Its prevalence has a certain impact on the growth performance and production performance of chickens, but there are many infectious factors that cause it, and the clinical manifestations can be very serious. It is of great significance for the rational treatment of respiratory diseases, because it can control the spread of disease in time, reduce the economic loss of chicken farm, should implement disease isolation, regular vaccination, maintain good ventilation conditions, to ensure healthy growth. It can improve the disease resistance of chickens and improve the economic benefits of the breeding farm. Is a common poultry disease. Poultry respiratory diseases occasionally outbreak, Newcastle disease, highly infectious, Newcastle disease, light avian flu, mycoplasma disease, rhinitis, nasal chronic bronchitis and other respiratory diseases are not seasonal, the treatment of chicken respiratory diseases is not correct, making countless chicken respiratory diseases in trouble. This paper explores the clinical manifestations and prevention strategies of respiratory diseases in chickens, as chicken farmers face increasing economic losses due to the occurrence of large-scale poultry corpse destruction events.

Keywords: Chicken; respiratory diseases; Differential diagnosis; Prevention and treatment

1. CHICKEN NEW TOWN EPIDEMIC

Chicken respiratory tract disease is the most common infectious disease in poultry. When cough, asthma, runny nose and other symptoms appear, it will lead to poor growth and development of chickens, decreased production capacity, and affect the production efficiency of chickens after the disease. Agricultural chicken aggregation, leading to the occurrence of chicken respiratory tract infection, there are many pathogenic factors, such as excessive feeding, pathogen invasion, bacterial infection, etc., and it is difficult to understand the clinical symptoms of chicken caused by these various factors, can be effectively treated.respiratory disease. In order to control the speed and scope of disease transmission and reduce economic loss, this paper introduces the differential diagnosis and prevention measures of chicken respiratory diseases in detail, providing constructive guidance and useful reference for farmers.

There are many factors that cause chicken respiratory diseases: viral diseases, mycoplasma, bacteria and fungi, blood parasites, feeding and so on.

Prevention factors, etc. Different pathogens cause different respiratory diseases in chickens, requiring different prevention and control measures.

Respiratory diseases caused by viruses

1.1Respiratory diseases caused by viral pathogens, namely NDE, with short course, rapid breathing, elevated body temperature, worsening mental status, reduced feed intake, cyanosis of COcomb, pale green feces, reduced laying rate of laying hens, and absence of hens during examination. The original sac was filled with fluid, the small intestine mucosa was ulcerated, the lungs were black and congested, the tracheal mucosa was congested, and part of the reproductive system was also affected., Causes yolk peritonitis, Newcastle disease commonly known as chicken fever or Asian chicken fever. Poultry Newcastle disease is an acute suppurative infectious disease caused by avian Newcastle disease virus infection. Newcastle disease happens every year. Although it can occur through chickens, mostly in cold periods or changeable weather periods, all age chickens are affected, but 20 to 30 days of age chickens are the most susceptible, the highest fatality rate. Sick chickens are mainly manifested as respiratory distress and neurological dysfunction. The main sources of Newcastle disease are sick chickens, infected chickens, their feces, oral mucus, etc., which are kept in the chicken house with sufficient dry temperature and good ventilation system. Chicken production environment, "" to maintain the production environment. To ensure stability, try to control or reduce the external pressure stimulation to the colony. The daily feed for chickens should be fixed to reduce or avoid the discomfort caused by changing the feed at will. It is strictly prohibited to feed moldy and deteriorated feed to raw chickens. According to the needs of different development stages of chickens, to ensure that the nutrition of chickens is comprehensive and balanced. Due to the lack of green feed in spring, vitamins and trace elements can be intentionally added in order to ensure that the intake of nutrition is not lacking. Feces and secretions. Feed, drinking water

equipment, environment, dust and other diseases contaminated by the virus can spread diseases through the gastrointestinal tract and conjunctiva. Viruses can be transmitted through the air and food, and disease can be transmitted through humans, vehicles, animal feed, insects, rodents, and infected birds.

1.2 Clinical symptoms of the chicken

The incubation period of NDV is 3 to 5 days, and the onset time is about 1 week. They stretch their necks, open their mouths to breathe, lose their appetite, develop loose stools, and may eventually die. The effect of the drug treatment is still unclear, and the sick chicken is gradually dehydrated. Autopsy revealed foci of bleeding in the duodenal mucosa, anterior and posterior inguinal lymph nodes, ileum and rectal mucosa.

1.3 Preventive measures

The prevention of the chicken epidemic is an important and complex work, among which the six links of feeding management, epidemic prevention, disinfection and cleaning, vaccination, disease treatment and real-time monitoring are the top priorities. Only the combination of the six links can effectively prevent the chicken epidemic. To improve the overall health index of the farm flocks, Feeders should strengthen the feed management, Improving the poultry house environment, Improve the quality of hygiene, Implement a balanced and reasonable feed nutrition collocation, Exit from the external vehicle, Implement closed feeding management, Promote the separate feeding mode of young chickens and chicks and adult chickens, Fully implement the prevention and control, epidemic prevention and disinfection systems, Avoid the breeding of other bacteria and microorganisms and establish a scientific and reasonable poultry farm vaccination system, According to the chicken breed, the chicken age, Around antibody quality, vaccine type, and degree of disease risk, Targeted for optimal dose matching, Provide effective vaccination routes to a detailed screening, Immune management by adhering to routine immunization during prophylaxis, Timely adjust the immunization schedule according to the epidemic situation and the immunity of the chickens, It can effectively improve the immune capacity of the chicken flock.

2. CHICKEN RHINITIS

Respiratory diseases caused by mycoplasma, bacteria or fungi, hemozoa, etc. Simply introduce the respiratory tract disease caused by mycoplasma, bacteria or fungus, hemoplasma, namely rhinitis. Inhaled laryngotracheitis and respiratory droplets, it is easy to cause infectious rhinitis. After development, it can also cause secondary infections, such as infectious laryngotracheitis. This disease usually has an incubation period, manifested as elevated body temperature, noticed decreased intake, nasal fluid flow, cough, mucus outflow from the mouth, sick chickens are reluctant to move, rooster swelling, and diarrhea is yellow-green. Avian infectious rhinitis is an acute and chronic respiratory disease caused by Haemophilus parafylinum found at autopsy. Chickens can occur at all ages, with old chickens and newborn chicks being particularly susceptible. About a month of chickens have developed a small amount of immunity. Chickens over 1 month were also susceptible, with each individual being susceptible. Different constitution, the clinical symptoms after infection are also different.

2.1 Clinical symptoms

The symptoms of this disease are mainly manifested in the respiratory tract, the symptoms are the initial clear liquid outflow from the nostrils, gradually condensed into a semi-solid dry cough, runny nose, etc. Young chickens are immature and adult hens are immature. Less eggs are laid, the rooster's whiskers often swell, and the secretions condense in the throat and suffocate.

2.2 Preventive measures

This disease is greatly affected by the bad air outside world, so the farmers must strictly control the environmental quality of the chicken house. In winter, the harmful gas in the chicken field can be effectively discharged, and the appropriate heating and ventilation equipment can be reasonably installed to ensure the appropriate temperature and purify the feces in time. Purify the air of the poultry farm and disinfect the chickens. Do even better to reduce the dust in the air. Strengthen the disinfection and cleaning of drinking water equipment. Must implement the prevention and control system, such as changing clothes, bathing, changing shoes, according to the needs of cleaning and disinfection work

Importantly, disinfection must be completed before entering the poultry environment, and chickens must be disinfected immediately after cleaning and disinfecting the poultry environment. The sick chicken area in the poultry breeding environment is a seriously polluted area, so the cleaning and disinfection personnel should pay attention to cleaning and disinfecting the sick chicken area. Therefore, thorough cleaning and disinfection measures are necessary and effective measures to prevent this disease.

3. INFECTIOUS LARYNGOTRACHEITIS IN CHICKENS

Chicken infectious laryngtracheitis is caused by chicken upper respiratory tract infection by infectious laryngtracheitis virus, belongs to type 2 infection. The main symptoms of sick chickens are cough and difficulty breathing. In the early stages of the disease, nuclear inclusions appear in the diseased cells.

3.1 Clinical symptoms

There will be a lot of chickens dying at first. Sick chickens can have a translucent runny nose with

conjunctivitis, followed by a cough and wheezing.3.2 Precautions

4. AND ESCHERICHIA COLI DISEASE IN CHICKENS

In order to prevent and control avian infectious laryngotracheitis, the breeder should disinfect the feeding equipment and feeding environment in time. Pickled chickens should be raised separately and mixed with other chickens. The eders must be strictly managed. When the flock arrives, keep an eye on the flock. If one chicken is infected, prevent other healthy chickens from being infected. To prevent the disease, the farm quarantined the cured chickens, as they need to be detoxification and disinfected. Check-up regularly to prevent disease recurrence. Chickens can produce a strong immunity after natural infection. Regular vaccination is necessary to prevent disease.

Coli disease in chicken is a general term for a class of diseases caused by some pathogenic serotype strains of Escherichia coli. Colerichia coli can occur in the whole year, and any breed of age and sex can be sick, which has a serious impact on the chicken industry. Escherichia coli disease is sensitive to common disinfectants and sensitive to antibiotics and sulfonamides

resistance to drugs.

4.1 Clinical symptoms

The symptom of this disease is diarrhea, and the sick chicken appears in the form of soft stool excretion, and the late mortality rate is very high. If the onset of avian E. coli disease is early, it will die within 2 days, and the disease lives longer, and the chicken will die after about 10 days. The specific symptoms of chicken disease are a drop in body temperature and abdominal swelling. A gentle tap makes a sound, and a gentle shake makes a running sound. The sick chicken developed diarrhea and shortness of breath. The chicks presented with acute sepsis. External adverse factors and other diseases exacerbate the situation of Escherichia coli disease in chickens. The mortality rate and excretion rate of adult chickens increased significantly after infection, which has a significant impact on egg production.

4.2 prophylactico-therapeutic measures

The outbreak of colicacterhia coli in chickens is related to external adverse effects and pathogen infection. In order to prevent this disease, it is necessary to strengthen feeding management and improve the feeding environment of chickens. Doctors in charge of epidemic prevention are doing the work. Carry out the work according to the actual situation of the chicken farm. Epidemic prevention requirements of breeding farms. In order to effectively prevent chicken Escherichia coli, the sanitary disinfection of laying period is strictly implemented. Escherichia coli in chickens can be prevented by drugs, but Escherichia coli in chickens is resistant to drugs. Unless the targeted drugs are selected, the treatment will not be effective, and the cost of raising chickens will increase. At present, China has developed a vaccine for avian Escherichia coli disease, which is widely used in production.

5. POULTRY CHOLERA

Poultry cholera, also known as avian Pasteuellosis or avian hemorrhagic septicemia, is a disease caused by Pasteurella infection. Avian Pasteellosis presents as septic manifestations, with very high morbidity and mortality, which can be either benign or chronic. Yes, but the incidence is low.

5.1 Clinical symptoms

Avian Pasteulosis can be divided into three types: the most acute, acute and chronic. Death occurred at home on day 2. At present, the most common form of pasteulosis in poultry is the acute form, in which chickens are inattention, crouching, standing, symptoms such as frequent diarrhea, thin excretion, heterochromatic feces, elevated body temperature, dyspnea and so on. Chronic type is not only the cause of chronic attacks, acute attack chickens may also die or recover. The main symptoms are pneumonia, gastroenteritis, respiratory tract inflammation, etc., and they can survive for about 30 days.

5.2 Prevention and control measures to prevent Pasteulosis in poultry include veterinary quarantine personnel, improving and improving the epidemic prevention system in poultry farms, strict prevention and management of Pasteulosis disease in poultry, and doing a good job in the prevention and control of Pasteulosis disease in poultry. When poultry pasteuulosis occurs, treatment requires adequate dosage and scientific and reasonable treatment. The eders should continue the medication for 3 days to prevent recurrence of Pasteurella in poultry.

6. SCIENTIFIC FEEDING MANAGEMENT AND STRENGTHEN QUARANTINE WORK

Reasonable control of the density of chickens, to ensure the right amount of exercise. By improving the ventilation of the chicken house, ensure the air circulation in the chicken house, prevent the chicken disease due to the high ammonia concentration in the chicken house, and replace the pad material regularly to prevent the pad material from getting damp and produce chicken disease.toxic gas., turn outside in. Clean the poultry house regularly to prevent fecal parasites and the causes of chicken disease; replace them regularly; adopt scientific and reasonable feeding methods to meet the needs of chickens; conduct regular quarantine of different aged chickens to eliminate sick chickens in time, effectively control the epidemic progress and prevent sick chickens from entering the market. Seriously ill chickens should be treated harmlessly and discarded randomly. To prevent the spread of the disease.

7 SUMMARY

To sum up, the chicken respiratory tract disease has caused certain losses to the poultry industry, and

there are many factors causing this disease. Find the disease in time, effectively control the development of the disease, and give appropriate nutrition. But this is the premise, completes the breeding environment and enclosure health disinfection is the basic measures, vaccination is the primary measures, strengthen the disease detection, is an important measures to ensure the healthy growth of chickens, improve the resistance of chickens only minimize the occurrence of respiratory diseases, to ensure the sustainable development of poultry industry, improve the economic benefits of poultry industry.

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Philosophical Implications of Rule of Law in a Comprehensive Manner from the Perspective of Natural Law

Yanwei Zhang

Yunnan University of Business Management, Kunming 650221, Yunnan, China

Abstract: Natural law originated in ancient Greece, through its logical evolution in classical, modern, and contemporary periods, has played a significant role in the development of human history and the advancement of civilization. Starting from the concept of natural philosophy, natural law believes that the inherent laws of things or their natural essence constitute the law, becoming the ultimate goal of substantive law and guiding human society towards truth, goodness, and beauty. This paper makes an examination of its fundamental spirit, offers significant insights for the construction of rule of law in China today.

Keywords: Natural law; Developmental history; Rule of law construction

1. HISTORICAL EXAMINATION AND VALUE PURSUIT OF NATURAL LAW

Natural law is considered the ultimate standard of right and wrong, the exemplar of an upright or nature-conforming life. It provides a potent stimulus for human introspection, a touchstone for existing systems, and a justifiable reason for both conservatism and revolution. The western veneration for the rule of law has its roots in the orthodoxy of such an ethical concept as natural law. Natural law stands as the foundation of jurisprudence and originates from deep-seated ethical demands within human hearts, playing a role in evaluating, guiding, and regulating real legal relationships[1].

Natural law acts as both a measure of justice and its safeguard. In real practice, to test if something or an action is fair and just, comparing it with positive law isn't the only standard. More crucially, it is whether it conforms to nature. That which conforms to nature is, therefore, natural and just, which distinctly sets it apart from substantive law[2]. Generally, substantive law carries the whims of some legislators to some extent. This arbitrary nature is something that cannot be changed with specific operational means. Hence, its justice remains to be further verified.

Natural law is universal and constant, encompassing the ethical value judgment of justice and reflecting people's relentless pursuit of justice. It guides substantive law. Whether in terms of spatial or temporal effect, positive law only applies to specific people in specific regions and times. For instance, Roman civil law was only applicable to Roman citizens within the Roman Republic. In contrast, natural law transcends time and space, applying universally regardless of race, gender, wealth, or intelligence - true for both now and the future. Under the compassionate gaze of natural law, all real-life disparities are smoothed out. Justice doesn't shift with time or space; it perpetually overlooks human actions[3].

Although Natural Law has experienced ups and downs, it remains evergreen and its underlying concepts and spirit continue uninterrupted to this day. Natural law profoundly influences Western legal thinking and legal culture, culminating in a rule of law concept that places Western jurisprudence paramount. Guided by this principle, laws that align with human development are universally respected and effectively implemented. It can be said that natural law influences or limits the direction and fate of Western rule of law, endowing it with spiritual power[4].

Justice and goodness are moral ethical affiliations in natural law thinking and are also the ethical pursuits in the construction of rule of law and the judicial system in contemporary China. A study of the Western tradition of natural law reveals that law is not just a collection of countless commands and rules but also embodies ethical aspirations from the human heart — justice and goodness. China has a history spanning over five millennia, but rule of law has not been the main theme of social development. The governance by individuals dominated Chinese history for thousands of years. Whether it's the Confucianism that spanned the entire feudal society, the legalist thinking praised during the Qin Dynasty, or the Taoist thinking of the Western Han Dynasty, all are rooted in governance by individuals, indicating a lack of fertile ground for nurturing a rule of law culture in the traditional sense[5]. Since the reforms and opening up, constructing a socialist rule of law society has been prioritized. Establishing the concept of rule of law and realizing governance by law and ethics are our current significant historical missions. Implementing the rule of law in China, a vast territory lacking a traditional rule of law concept, is not something that can be achieved overnight. It is a grand project involving politics, economy, culture,

and other areas, requiring a fundamental shift in mindset. Constructing a rule of law society necessitates robust systemic safeguards. While we should draw from advanced legal systems, we shouldn't merely transplant systems but understand and incorporate the values and notions behind them, else we'll only scratch the surface. Hence, referencing the fundamental ideas behind the Western rule of law tradition, especially natural law, greatly benefits China's rule of law construction[6].

Western natural law doctrine emerged before the advent of modern nation-states. Starting from the concept of natural philosophy, it perceives nature as the law, or the intrinsic laws of things, or their natural essence. This endows natural law with ontological significance, making it the ultimate goal and intrinsic logical requirement of other norms, guiding individuals and societies towards goodness. Laws should align with human nature and ethical demands, which is vividly expressed in the Western attitude towards natural and positive law. In the West, differentiating between natural and positive law is part of their intellectual and cultural tradition. Even though various natural law theories have appeared in Western intellectual history, all natural law scholars advocate a dualism of law, positing that there exists a law in human society that transcends and operates independently of governmental authority, above the enacted laws[7]. This duality indicates that natural law is a priori, possessing eternity and universality, and holds a superior status. This set of supreme, universally valid, and objective legal principles supports and guarantees positive law, validating and ensuring the effectiveness and authority of laws enacted by legislative bodies, courts, and other entities. This principle emphasizes the value, position, and function of law in society while acknowledging the imperfections in positive law and state authority. It posits that authority doesn't inherently grant legitimacy and identifies a dialectical relationship between law, rights, and power, where the foundation and value orientation of law and rights are justice and equality. Consequently, both positive law and state power must adhere to natural law, implying that any social norm is bound by ethical and moral principles[8].

Exploring the value foundation or ethical dimension of human law not only possesses philosophical significance in terms of ultimate pursuit and spiritual care but also carries the practical attribute of social institutional construction. Law can only realize human freedom and equality under the guidance of justice and ethical values. An approach that entirely rejects the ethical values of law is extreme; a legal norm that loses the restraint of justice and ethics, relying solely on coercion, cannot establish a normal and effective legal order. Law is not always in accordance with the objective laws and requirements of justice. Natural law plays a demonstrative and

guiding role before the establishment of laws, and afterward, it serves as a standard of review and judgment. Although it does not participate in specific judicial practices, it evaluates real laws from the higher realm of the human soul and guides human behavior.

2. HISTORICAL REVIEW OF THE RULE OF LAW CONSTRUCTION IN OUR COUNTRY

Traditional Chinese legal concepts and current rule of law concepts are two different notions. Examining our traditional legal concepts helps us identify our shortcomings and promote the construction of the rule of law. "Establishing the rule of law is a prerequisite for China's modernization, and clarifying why ancient Chinese legal studies couldn't turn China into a rule of law society is a precondition for it..." The traditional Chinese legal concept significantly differs from the legal notion under the Western natural law tradition. The deficiencies of our traditional legal concept mainly manifest in:

Firstly, in terms of the essence of law, the traditional Chinese legal concept pays excessive attention to the voluntarism of law while neglecting its objective regularity. From previous discussions, we can see that in Western natural law theory, law is the inherent attribute of things. It is not subject to human will and is an objective law that exists inherently within things. Everything evolves towards its final attribute. The characteristics of natural law set a high standard for evaluating real laws. However, in the consciousness of many Chinese people, they tend to think that the law equates to punishment; "breaking the law" means "going to jail", which is related to the traditional Chinese concept that law is punishment.

In ancient China, the function of law was very singular. It was a means for emperors to rule the people, merely an authoritative command attached to punishment, possessing strong voluntarism. "Shuowen Jiezi" explains that the words 'punishment' and 'law' are interchangeable. In ancient China, the core of the law was punishment, and a private law system never emerged within traditional Chinese legal concepts. Most regulations were mandatory prohibitions or commands, which were not the basis or source of rights but an extension of the emperor's absolute power. This kind of law could not genuinely constrain the emperor, the state, or the government. This emphasis on the subjectivity of law, stressing its instrumental value, overly relied on authority, lacking its independent value. Therefore, it inevitably lost its independent status, let alone the scrutiny and judgment of other matters[9].

From a value perspective, this emphasis on the voluntarism of the law is also an overlooking of the justice of the law. It only values the reality of the law, rarely judging the good and evil of the law from a value perspective. Although traditional China also emphasized the importance of law, the law referred to here was just the actual law. There was a lack of

rational reflection and guidance on the ideal value of the law, leading to a lack of pursuit of ideal values beyond real law with "justice" at its core. In contrast, the Western discussion on natural law centered around "justice" forms an essential feature of its legal thought. It was the pursuit of the ideal value of the law that prompted the revival of natural law after World War II. Influenced by many factors, "stopping chaos" and "managing the masses" became the core values of our traditional legal concept, rather than constructing a just social order. This is a significant reason for the punitive nature of traditional Chinese legal concepts and a vital reason for the long-term lack of healthy development of traditional Chinese legal thinking and systems[10].

Secondly, in terms of the content of the law, the traditional Chinese legal concept prioritizes obligations, emphasizes strict punishment over the well-being of the common people, and overlooks the rights of individuals. Western natural law emphasizes that the law should guarantee and realize human natural rights, playing a fundamental role in recognizing, allocating, maintaining, and safeguarding rights. Roman private law was formed on this basis, creating a comprehensive system. The private legal system in the West after Rome also revolved around the various rights of individual citizens.

Ancient China lacked the concept of individual rights. The relationships between people in society were based on blood or quasi-blood ties. According to Confucian views, one's body and skin come from their parents, so the ethical morality of "filial piety" tied by blood becomes the core of establishing an individual's status in society. The so-called "rulers act as rulers, officials as officials, fathers as fathers, sons as sons" means relationships were defined by blood ties, thus emphasizing an individual's duties. Therefore, traditional Chinese legal concepts lacked rights awareness, emphasizing that law was a tool to maintain the power of the ruling class. The controlling and suppressive functions of the law were extensively manifested, which resulted in the development of a penal system in ancient China and a tendency towards severe punishment.

Of course, acknowledging the flaws in traditional Chinese legal concepts, which have become obstacles to today's rule of law, doesn't mean they had no merits or positive influences. In fact, throughout the history of Chinese thought, many progressive legal thoughts emerged. These thoughts constitute the positive aspects of Chinese culture. For instance, Han Fei's "Law as the Basis", Guanzi's "All Follow the Law", and many thinkers mentioned "Equal Punishment for All" and "Governing by Law". Although these ideas were not dominant and didn't become mainstream in traditional Chinese legal thinking, they influenced the development of legal concepts to some extent, preventing them from turning extreme.

By the end of the 20th century, China proposed governing the country by law and building a socialist rule of law nation. Subsequently, this strategy was written into the constitution. Undeniably, until the early 21st century, China remained an authoritarian feudal country lacking democratic and rule-of-law traditions and theoretical support. The rule of law awareness among the people was still weak, posing a significant barrier to moving towards a society governed by the rule of law. There are many reasons for this outcome, but the backwardness of traditional Chinese legal thinking is one of the significant factors. In this context, Western natural law thinking provides valuable insights for constructing China's modern rule of law and serves as an essential reference for our rule of law construction. Therefore, studying and drawing from Western natural law ideas, combined with China's local resources, offers special insights into enriching and updating our rule of law concepts and building a society governed by the rule of law.

Justice is the ultimate concern of the law. If the law wishes to gain widespread respect, it must use this ultimate concern as its foundation. Only by doing so can society achieve stability and harmony. Natural law studies and focuses on uncovering those eternal human values that lie behind the law. Influenced by the concept of natural law, the notion that justice is the highest pursuit of the law has become a commonly accepted societal belief. The pursuit of justice has never ceased, touching upon all aspects of social life. Some scholars argue that justice is not just a term exclusive to ethics. Indeed, from the development of natural law, it's evident that the notion of justice originated from the praise of the virtues of heroic figures. The evolution of the form of justice reflects people's understanding of nature and humanity. Justice stems from human rationality, representing an intrinsic moral analysis of the law and the rational ideal of seeking the ultimate good. It is a product of human rational activity, and its value lies in clarifying the purpose and fundamental qualities of the law.

3. THE IMPLICATIONS OF NATURAL LAW FOR CHINA'S RULE OF LAW CONSTRUCTION

China's legal tradition is different from the West. In the West, where the concept of natural law emerged, a dualistic view of law was formed: atop positive law exists a natural law, unswayed by human will, with justice as its main thread. The former is guided by the latter. This metaphysical value embodies humanity's aspiration and pursuit of the "good". China did not adopt this dualistic view but rather embraced a monistic perspective. This singular view can easily lead to the law becoming merely a tool for rulers, overlooking the intrinsic value of the law. The purpose of natural law is societal, not individual, prioritizing public happiness during its formulation.

Laws that only reflect the will of a minority do not meet the standards of justice. Evaluating the law through the lens of natural law not only prevents blind worship of positive law but also constantly raises the bar, pushing the law towards an ideal state. Therefore, promoting the value of justice is crucial in China's rule of law construction[11].

Since the beginning of China's reforms and opening-up, the country has experienced rapid material and cultural development. With the prosperity of the socialist market economy, people's awareness of their rights has significantly increased. At this juncture, the justice objective of Chinese law requires state institutions to be based on public welfare and rational arrangements, ensuring that everyone in society can get what they deserve, enjoy the social rights they are entitled to, and bear the social obligations they should carry. Therefore, the essence of justice lies in the fair distribution of social resources and benefits. If the distribution is unfair, the enthusiasm of social workers will be greatly undermined, detrimental to societal stability and growth. From ancient Greece's distributive justice to Rawls's theory of justice, Western natural law provides a wealth of intellectual resources that China can draw upon. Thus, the construction of China's rule of law concept requires not only legislation but also further exploration of the metaphysical value behind the law [12].

The legitimacy of the origin and source of the law is key to whether the law can achieve a paramount status. From its inception, Western natural law thinking posited that the law is an objective rule not subject to human will. This objective rule is sacred and immutable, which grants the law a transcendent character and attributes from the outset. In Western societies shaped by the spirit of natural law, the law holds a fully independent status[13].

In contrast, in our traditional legal conception, the association of law with punishment implies that the law has a dependent nature, occupying a utilitarian position, and bearing strong subjective willfulness. Indeed, laws require creators and executors, but this doesn't contradict the objectivity and independence of the law. When the state or legislative bodies enact laws, they don't arbitrarily craft them based on personal whims; instead, they are constrained by objective laws and judged by social justice[14]. In China's traditional culture, the law has long been an appendage to politics, with local administrative organs also taking on judicial functions. The law's heavy reliance on politics led to a complete loss of its inherent justice and rationality. Even now, for many people, the law doesn't represent human rationality or a safeguard of rights, but rather a synonym for punishment and suppression. The law lost its essential connection to human reason and justice, becoming merely a method of exercising worldly power. Meanwhile, Western natural law's emphasis on the objectivity of the law and its wariness of the law's subjectivity is actually a caution against man-made rule. Such caution is precisely what's lacking in traditional Chinese legal thought, where introspection is absent and corruption thrives[15].

4. CONCLUSION

Rule of law is not just governance by law; it demands that the referenced law is "legitimate." Enacting and possessing just laws are the prerequisites and foundation of the rule of law. Without good laws, there is no basis for rule of law. The concept of natural law provides us with a benchmark. If a law merely represents the will of a few, contravenes standards of justice, and tramples upon people's rights, it's not a "good law." It lacks the legitimacy that defines law. People have the right to reject laws that grossly violate morality. The logical premise of natural law is a priori and self-evident, giving it unique abstractness. Throughout different epochs, due to the eternal values natural law seeks, it continually evolves to address society's pressing issues, granting it lasting superiority over other ideologies.

Philosophers have used the theory of natural law to affirm the rationality, legitimacy, and necessity of states and laws, rectifying and limiting the injustices, unfairness, and irrationalities present in current legal and political systems. They promote the establishment of a social and political order aligned with objective laws and human nature - justice and goodness, guiding society and individuals towards righteousness, ensuring societal stability and long-lasting governance. As the ethical value basis of positive law, natural law helps guide humanity in recognizing and realizing its societal value, pursuing a harmonious social order of justice and goodness. Ancient natural law thinking holds significant referential value for today's legislative and judicial practices in China and is crucially instructive for our country's socialist rule of law construction.

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Random Forests: Applications in Credit Prediction

Zeng Zengfeng[1], Zeng Lingmin[2]
[1]THE PEOPLE'S BANK OF CHINA FUJIAN PROVINCIAL BRANCH, Fuzhou, Fujian, China
[2]ZHANGPU RURAL COMMERCIAL BANK, Zhangzhou, Fujian, China

Abstract: With the continuous development of Internet finance, the credit system has already become a core component of the financial market, and the credit quality of customers at financial institutions has attracted significant attention.Currently, as a data-driven machine learning algorithm, random forests provide a new mechanism and platform for applying artificial intelligence technology in the financial industry. This article utilizes random forests for data mining of bank historical loan data. On one hand, data preprocessing techniques such as handling missing data and encoding variable values are employed, while L1 regularization is used to avoid overfitting, thus forming a new training dataset. On the other hand, by observing the learning curve, it is found that there is neither overfitting nor underfitting, achieving a credit prediction accuracy of 90.7%. The model demonstrates strong robustness and generalizability. It can be seen that the application of random forests and its credit forecast have broken through the dilemma of credit forecasting and effectively improved banks' ability to manage credit risks.

Keywords: Machine Learning; Random Forests; Credit Forecast; Credit Risk

1 INTRODUCTION

In recent years, artificial intelligence has made important progress in perception, and it has gradually approached the level of human beings. In terms of voice, image, data processing and other aspects, the efficiency and effect of artificial intelligence processing have surpassed humans. With the significant improvement in artificial intelligence's ability to understand data, express knowledge, perform logical reasoning, and engage in independent learning, the rapid development of financial digitalization will further enhance the construction of the banking credit system.[1]

Machine learning is an important branch in the field of artificial intelligence. It is a way to simulate human learning process through computer programs. Machine learning can be applied to various classification and regression issues, such as predicting market transactions, predicting user purchase behavior, and customer credit scores.[2] At present, commonly used machine learning algorithms include random forests, logical regression, decision trees, and support vector machines. Among them, random forests are an integrated method based on decision-making trees, which aims to predict and classify by building multiple decision trees.

Each decision-making tree random sampling training sample and classification characteristics to ensure that the characteristics of each decision tree selection of random forests integration are different, effectively improving the robustness and generalization of algorithms in credit prediction.[3]

Credit forecast refers to the use of data mining and statistical analysis to predict the credit status of individuals or enterprises. In the banking industry, according to the personal credit forecast tasks of historical loan data, random forests can predict the following two aspects of credit by analyzing information such as customer information, historical transaction data, and personal financial status. On the one hand, predict whether the borrower can return the loan on time and whether it will breach of contract, etc. as the basis for the bank's lending; on the other hand, it can automatically detect and identify fraud transactions to prevent non-performing loans and possible risks and losses, prevent financial risks to enhance financial risk management[4].

2 METHOD

2.1 Random Forests

Traditional decision-making tree models will cause excessive fit. The random forests is an integrated classifier composed of many decision trees. Each decision tree is randomly selected to build a tree based on the characteristics. The final result is voted or an average of the results of all decision trees. Random forests can overcome the overfitting problems of the decision tree and reduce noise interference and abnormal values.[5]

The basic steps of random forests are:

First, random sampling. From the training concentration, the samples are randomly selected to generate a new sample set to train each decision tree. In this way, different decision trees can build a tree based on different samples to increase the diversity and robustness of the integrated model.

Second, random selection features. On each node, randomly select several features to build trees instead of using all features to build trees. This can increase the difference between the decision tree and reduce the possibility of overfitting.

Third, the establishment of a tree based on the characteristics of the decision tree randomly selected in the previous step. Each decision tree contains a root node and several internal nodes and leaf nodes. [6]Decisions are made by constantly dividing the data into different categories or determining a value.

Fourth, integration. Integrate all the decision trees and use a voting or calculation average method to obtain the final result.

2.2 Advantage

In the field of credit forecasting, random forests can solve problems such as small samples, large number of features, and imbalanced data. At the same time, in the financial market with relatively large noise, it can also achieve significant results, so it is very suitable for application scenarios for credit forecasting. The advantages of random forests in the field of credit forecasting are mainly in the following aspects:

First, the accuracy of credit forecasting is high. Through adaptive learning algorithms, random forests can avoid overfitting and perform well on noise data sets. At the same time, it can effectively deal with the abnormal values and imbalances in the data.

Second, credit forecast is strong. The model of random forests is not affected by group points, and does not require strict processing and zoom in data. It can be predicted well for different types of datasets[7].

Third, credit predictive noise is stable. In random forests, each sub-tree can adapt to different data sets and features. During the training process, the appearance of special circumstances such as noise will not affect the entire model.

Fourth,credit forecast processing high-dimensional data. With a large number of features, random forests algorithms can also process high-dimensional data. It effectively increases the diversity and generalized performance of the model by random selection of features and samples[8].

3 PROCEDURE

3.1 Sample Selection

The importance of random forests judgment features. Random forests is an algorithm that obtains the explanation of data set classification or regression by evaluating the importance of evaluation. In bank credit forecasts, random forests can evaluate the importance of different features by calculating the contribution of each feature to the predictive effect of the model. Feature importance assessment can help banks better understand the meaning and role of each feature, and can be used to help business personnel better formulate strategies and decisions.[9] By analyzing the importance of characteristics, you can find the interrelationship between some decision-making factors, thereby optimizing the model and credit risk control strategy of credit scores. In addition, the use of random forests models in credit forecasts can also be used for feature selection, dimension reduction and model optimization. Therefore, the characteristic importance evaluation of random forests is a very important link in the process of bank credit forecast modeling[10].

Table1 Feature Attribute

Variable Tag	Variable Explanation
AGENT	Customer Channel
IS_LOCAL	Whether the Customer is local
WORK_PROVI_NCE	Work City
EDU_LEVEL	Educate Level
MARRY_STATUS	Marital Status
SALARY	Income
HAS_FUND	Presence of A Provident Fund
STATE	Account Status
CURRENCY	Currency Type
OPENDATA	Account Opening Date
GUARANTY_TYPE	Type of Guarantee
HOUS_LOAN_COUNT	Number of Personal Housing Loans
COMMECIAL_LOAN_COUNT	Number of Personal Commercial Loans

After the characteristic importance analysis, we carried out feature selection, 1999 data, including 13 feature attributes and classification tags as data construction random forests models.According to the relative importance of features in the data set, the importance of these features above has been treated at a native process, and its sum is 1.0.

Table 2 Proportion of Feature Importance

AGENT	0.342737
IS_LOCAL	0.326589
WORK_PROVINCE	0.078860
EDU_LEVEL	0.071994
MARRY_STATUS	0.053206
SALARY	0.037821
HAS_FUND	0.034273
STATE	0.027993
CURRENCY	0.019745
OPENDATA	0.005388
GUARANTY_TYPE	0.001289
HOUSE_LOAN_COUNT	0.000107
COMMERCIAL_LOAN_COUNT	0.000001

3.2 Data Processing

(1) Handing Missing Data

In real data, data samples may be missing one or more values due to various reasons. This is mainly due to statistical errors in the data collection process, common measurement methods are not applicable to certain features, or some data is not filled in during the collection process. However, the most common missing values are null values in the data table, or placeholders like NAN.

If we ignore all missing values, most computing tools will be unable to process the original data or get some unpredictable results. Therefore, before doing a deeper analysis, we need to effectively process these missing data. [11]Here are some methods for processing missing data:

1) Delete Features or Samples

Deleting features or samples with missing values.This is the easiest way to remove features or samples that contain actual data from the dataset. However, there are certain drawbacks to this method,

such as the possibility of removing too many samples, resulting in unreliable results. On the other hand, if too many feature columns are removed, there is a risk of losing valuable information that is necessary for the classifier to distinguish between categories. In summary, it is not feasible to delete the sample or the entire feature column in the dataset, as too much valuable data will be lost.

2) Interpolation Techniques

Using different interpolation techniques, missing values are estimated from data from other training samples in the dataset. The most commonly used of these is mean imputation, replacing missing values with the corresponding feature mean.

(2) Category Data Processing

For personal credit, there are one or more feature columns of category data, and they are divided into nominal features and ordered features. For ordered features, the values of the categories are ordered or sortable.

1) Mapping of Ordered Features

To ensure that the learning algorithm can use ordered features correctly, we need to convert the category string to an integer.

2) Class Code

Machine learning libraries need to require class labels to be encoded as integer values, class labels are not ordered, and it doesn't matter which integer value they are given to a particular string class marker.

(3) Training Datasets and Test Datasets

If you want to divide your dataset into training and test datasets, try to retain valuable information that will be useful for training machine learning algorithms. For this reason, we generally don't allocate too much data to the test dataset. However, the smaller the test set, the less accurate the generalization error estimation will be, which needs to be weighed when dividing the dataset.

(4) Scales the Value of the Feature

Scales the value of the feature to the same interval. Decision trees and random forests are the few machine learning algorithms that don't require feature scaling, but for most machine learning and optimization algorithms, scaling the values of features to the same interval can make them perform better. There are two common ways to scale different features into the same interval: normalization and normalization. In this research, we use a normalization method, which scales the value of the feature to the interval [0,1], which is a special case of min-max scaling.

(5) L1 Regularization

L1 regularization is used to promote sparsity in the data..L2 regularization as we know it is a way to reduce the complexity of the model by increasing the penalty for large weights. In this research, L1 regularization is used, for L1 regularization, the sum of squares of the weights is simply replaced by the sum of the absolute values of the weights. Unlike L2 reg-

ularization, L1 regularization generates sparse eigenvectors, and most of them have a weight of 0. When the high-dimensional dataset contains many irrelevant features, especially when the irrelevant feature data is larger than the sample size, the sparsification of weights can play a great role, and L1 regularization can be regarded as a feature selection technique[12].

4 EXPERIMENTS AND RESULTS

If a model is excessively complex relative to the training dataset, characterized by an excess of degrees of freedom or parameters, it runs the risk of overfitting.Such a model would likely exhibit diminished capacity to generalize effectively to new, unseen data.In general, collecting more training samples can help reduce the degree of overfitting of the model. However, in practice, collecting more data comes with significant costs or is simply not feasible.
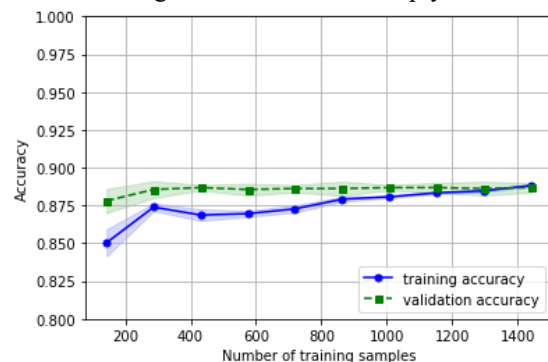

Figure1:Accuracy Rates at Different Data Volumes

From Figure 1, it is evident that beyond 1200 data points, the training and validation accuracies stabilize and become consistent, with a gradual increase that eventually plateaus. This suggests that the dataset of 1999 instances utilized in our research is adequate for our purposes.
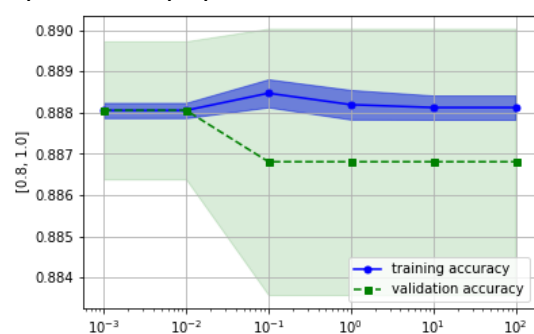

Figure 2: Training Set Accuracy and Test Set Accuracy

Here, the correctness of the training set and the test set is used to determine whether the random forests algorithm is overfitting or underfitting. [13].It can be seen from Figure 2 that there is a relatively small gap between the training accuracy curve and the validation accuracy curve, indicating no overfitting phenomenon.

After the feature importance analysis, we carried out feature selection, and 1999 data, including 13 feature

attributes and classification labels, were used as data to construct a random forests model, and we could achieve a credit prediction with a correct rate of about 90.07%.

5 CONCLUSION AND DISCUSSION

5.1 Conclusion

This research mainly uses the random forests model for credit analysis and prediction:One advantage of choosing a random forests is that it does not need to consider the choice of parameters and does not need to prune the random forests, which is due to the robustness of the ensemble model to noise. In practice, the parameter we really care about is the number of decision trees needed to build a random forests. Overall, the number of decision trees is large, but the overall classification performance of random forests is better, but it also increases the computational cost. To do this, we adjust the number of decision trees according to the needs of the actual data table[14].

Ultimately, we achieved a good predictive model, with an accuracy rate of 90.7%.

5.2 Discussion

(1)The random forests model algorithm assigns equal weight to each eigenvalue, which may increase the interference from some eigenvalues and affect the decision-making performance of individual decision trees.

(2) The method of simple majority voting is mainly to use all the decision trees in the random forests to participate in the final voting decision, what method can be considered to optimize the random forests, the optimal combination rules of all trees should be designed, and the choice of which decision tree is more effective tree weighted voting method for decision-making, which is an algorithm method worth studying.

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Application Analysis of Volume Balance in College Piano Education

Weina Hua

Philippine Christian University Center for International Education, Manila, 1004, Philippines

Abstract: In the piano education in colleges and universities, the traditional teaching mode based on knowledge transmission can no longer meet the learning needs of students, and teachers need to explore a more efficient teaching mode. Based on the artistic characteristics of the piano, starting from the volume balance, to understand the important role of the volume balance education for students. Combined with the actual situation of students, we analyze the key factors that may affect the balance control of piano volume, and apply diversified teaching strategies. For example, guide students to correctly deal with the relationship between the two hands, strengthen the strength control and guidance, organize students to conduct timbre perception training, guide students to try both hands independent practice, and provide professional piano performance guidance for students. Make students feel the pertinacity of piano education, strengthen students's ability to control the piano volume balance through multiple ways, make students master the basic volume control method when playing the piano, improve students' artistic expression ability, so that students have a more comprehensive cognition of the piano. So as to improve the effectiveness of piano education in colleges and universities, so that students can have a better development in the piano field.

Keywords: college; piano education; volume balance; performance

1. INTRODUCTION

Volume balance is the essence of piano art, involving the control of strength, the grasp of music dynamics, timbre processing and other aspects, reflecting the students' understanding and application of piano ability. However, in the current college piano education, the content of volume balance education is relatively insufficient and has not been paid full attention by teachers. Therefore, it is necessary to explore the role of volume balance in piano education in colleges and universities, study how to penetrate the volume balance education for students in piano education, improve students 'ability to control the volume, and promote the continuous improvement of students' piano foundation.

2. THE IMPORTANCE OF STRENGTHENING VOLUME BALANCE EDUCATION IN COLLEGE PIANO

2.1 Improve students' musical performance

In college piano education, strengthening the training of volume balance is crucial to improve students' musical expression. As the soul of performance, musical expression is the key factor to measure whether students 'piano playing can touch people's hearts. The control of the volume is a powerful tool to shape the music picture and convey the emotion. Through the fine control of the strength of the notes, students can more accurately present the emotional ups and downs of the music, so that the audience seems to touch the pulse of the music. Volume balance education can enable students to adjust the priorities of the piano through volume control, and describe the three-dimensional sense of music in the process of playing. The subtle treatment of weak sound can create a quiet atmosphere; the timely outbreak of strong sound can instantly ignite the mood of the audience. How to change the volume of the piano is a bridge of the emotional flow of the music, which can make the music change dynamically and ensure the vitality of the piano music. In addition, the control of the volume balance can exercise the students' music perception. On the basis of understanding the music score, according to their own understanding of music, flexibly adjust the volume, in order to achieve the best artistic effect, so as to promote the improvement of students' music performance.

2.2 Ensure the clarity of the music structure

The musical structure, like the framework of architecture, is the cornerstone of piano music, which determines the coherence of music. Volume balance, like the ruler in the hands of an architect, is an accurate tool for building a music mansion. In complex music, different parts, melodic lines and chords all need to be distinguished through clever adjustment. Proper volume balance allows each independent musical element to be properly displayed, like a distinct picture scroll, allowing the audience to clearly distinguish the main line and secondary line, main tone and harmony, and then understand the architectural intention of the music. For example, in polyphonic music, by controlling the volume of the main melody and accompaniment, the theme can be distinct, and the harmony is rich without chaos[1]. Moreover, volume balance is the key to revealing the changes in musical dynamics. For example, the gradient from weak sound to strong sound can attract the attention of the audience, highlight the turning point of music, and make the music structure more

distinct. Therefore, in the piano education in colleges and universities, the volume balance guidance for students is helpful to improve students' playing skills, make students grasp the music structure through volume adjustment, present a music feast with clear structure for the audience, and lay a foundation for students to learn more difficult piano knowledge in the future.

2.3 Promote the harmony and unity of music

The volume balance of piano education in colleges and universities helps to promote the harmony and unity of music and create the harmonious beauty of piano music. Volume control can make all the parts of the music complement each other and form an overall harmony. In piano performance, the volume of each note has its special meaning, and the notes are interwoven to form a three-dimensional music space. If the volume is not handled properly, it may lead to the music structure chaos, destroy the overall harmonic sense. For example, the volume balance between the main melody and the accompaniment can not only highlight the theme, but also ensure the foil function of the accompaniment, while enriching the music content and ensuring its harmony and unity[2]. The contrast of strong and weak sounds, can guide the audience's mood, so that the music ups and downs orderly, to achieve dynamic harmony. In addition, the mastery of volume balance can help students understand the style characteristics of the work style, so that the music style is accurately reflected, so as to enhance the inner unity of music. Based on this, the emphasis on volume balance in piano education in colleges and universities can make students learn how to find a balance in the sea of notes, achieve a harmonious relationship between part and the whole, strengthen students' cognition of piano, and make students better realize the harmony and unity of music in the process of piano performance.

3. THE FACTORS AFFECTING THE VOLUME BALANCE IN THE PIANO PERFORMANCE

3.1 The left and right hands

In piano playing, the left and right hand disharmony is a common problem that leads to an unbalanced volume balance. For the performance of piano works, the left hand is generally responsible for the output of rhythm, bass, harmony and other changes, while the right hand is responsible for playing the melody part. However, if students fail to reasonably control the playing methods of the left and right hands, such as the left hand accompaniment is too prominent or the melody of the right hand is submerged, the music will lose its due sense of hierarchy[3]. In addition, in complex polyphonic works, the volume contrast between the main melody and harmonic lines is not handled properly, which may lead to auditory confusion and make the musical elements that are supposed to coexist in conflict. Such disharmony between the left and right hand reflects the lack of

deep understanding of the piano, or the failure to be strict with themselves in daily learning, and the lack of control over music, which limits the improvement of students' learning efficiency.

3.2 Poor intensity control

In the piano education in colleges and universities, it can usually be found that students fail to control the strength reasonably, resulting in the imbalance of piano performance. The strength can be controlled by the intensity of students' key touch, which is the key element of music expression and directly determines the loudness of the notes. If the students can not accurately control the intensity, it may lead to some notes are too strong or too weak, so that the music is no longer natural and smooth, destroying the original volume balance. For example, the uneven strength of continuous notes may make the melody lines intermittent and lack of coherence; in the music section with strong contrast, if the strength is improperly controlled, the weight contrast may be too abrupt, making it difficult for the audience to feel the due tension[4]. In addition, the poor control of strength may lead to an imbalance of piano harmony, making some parts too prominent, while others are hidden, especially in multi-part music, easy to affect the overall harmony of piano music.

3.3 Failing to use the timbre properly

Tone color refers to the sensory characteristics of sound, and beautiful timbre is the goal that students need to pursue when learning the piano. However, in the actual teaching, some students fail to use the timbre reasonably to lead to the volume imbalance, which makes the uncoordinated volume difference between the notes[5]. If excessive emphasis on bright timbre may make some parts too prominent, break the original balance, while ignoring the use of dim timbre may lead to some parts to be diluted, appear too soft. When playing the music segment with rich dynamic changes, if the timbre conversion is not natural, the volume will appear stiff, which will affect the emotional transmission of the music. In addition, for polyphonic music, if the timbre choice between the parts is not appropriate, the volume of one part may be covered by other parts, losing the due independence. Thus affect the students' control effect of the volume, can not play beautiful music through the piano.

4. GUIDING STRATEGY OF THE VOLUME BALANCE FOR STUDENTS IN UNIVERSITY PIANO EDUCATION

4.1 Handle the relationship between the two hands correctly

In college piano education, teachers should understand the importance of correctly handling the relationship between the two hands to improve students' ability to control the volume and balance. Correct handling of the relationship between the two hands requires students to have a deep understanding of the harmony, rhythm and structure of the music.

Help the students to learn to analyze and adjust the volume of the left and right hands in the process of practice, to promote the students to better understand the internal logic of the music, and to improve their music analysis ability. Make the students through correctly handle the relationship between the two hands, gradually form with their own characteristics of the performance style[6]. In addition, volume balance is a basic skill that students need to master to learn the piano. Through systematic piano education, students can strengthen the cognition of the relationship between the left and right hands, so that the operation between the left and right hands is more coordinated, and gradually improve students' ability to control the volume. Promote the improvement of students 'professional performance quality, and lay a foundation for students' future career development.

The teacher can guide the students to divide the music into different parts, focusing on the volume control of the left and right hands respectively. For example, make the students first practice the left hand to the rhythm, bass, harmony and other control part, and then gradually add the right hand, guide the students to adjust the volume balance. During the practice, teachers can encourage students to use the recording equipment to record their own performance. When the performance is completed, it can help students find their own deficiencies in volume balance by playback the recording, so as to make targeted improvements and promote the improvement of students' independent learning ability. In addition, teachers can play the playing videos of professional pianists for students to imitate their volume processing methods and learn the control skills of the left and right hand relationship. And for students to simulate different performance situations, such as solo, accompaniment, ensemble, etc., so that students master the ability to maintain the volume balance under different music background, improve the students' performance level.

Figure 1 Handling guidance of the two-hand relationship

4.2 Strengthen the intensity of control and guidance

Strength control is one of the core elements of musical expression, which directly affects students' ability to grasp the dynamic changes of piano notes. By strengthening the strength control and guidance,

students can better control the volume, improve the sense of music levels, enhance students' artistic expression, so that students can express delicate emotions through the piano. At the same time, the strength control involves the technical aspects of the strength, speed and endurance of the fingers[7]. Through intensive training, students can improve the flexibility of finger operation, reduce the difficulty of students' performance, and make students better express music art. And through the strength control training, promote the cultivation of students' comprehensive music ability. In the process of learning control, students can feel the structure of the music, harmony and emotional direction, and promote students to have a deeper understanding of the piano. Through good strength control ability, students can better coordinate with others in the process of participating in group performance.

In the piano education in colleges and universities, teachers can guide the students to mark the strength in the music score, such as strong, weak, gradually strong, weakened and so on. Help students to learn the meaning of the relevant markers, so that students can apply it in practical practice. Through repeated practice, help students to gradually master the volume control under the markers of different strengths. Subsequently, the teacher can guide the students to separate the melody line and accompaniment in the music and practice their volume performance at different strengths. By comparing the melody line with the accompaniment volume, the students can understand how to balance the strength of the two hands and ensure that the melody line is clear. Students are also encouraged to listen to different styles of piano works, so that students observe how professional players deal with intensity changes to achieve volume balance. For example, analyze the conversion between strong sound and weak sound, guide students to gradually absorb playing skills through imitation, and promote the cultivation of students' volume balance ability.

4.3 Conduct the timbre perception training

Tone color is an important part of musical expression, which is closely related to the volume. Different timbre can produce different volume effects, such as deep timbre is often accompanied by a larger volume, while bright timbre may be relatively soft. Through the training of timbre perception, students can understand the mutual influence between timbre and volume, so that students can naturally adjust the volume when playing to achieve the volume balance[8]. When students can distinguish between different timbre, they will be more sensitive to detect the subtle changes in the music and improve their sensitivity to the volume. Make the students consciously pursue the volume and harmony when playing, and make the music more infectious. And through the timbre perception training, help students learn how to use music to express emotion, so that

students can adjust the volume by changing the timbre at an appropriate time, and better interpret the emotion of music. So as to achieve the volume balance, enhance the three-dimensional sense of music.

Table 1 Guidance on intensity control

order number	Training content	objective	Methods and steps	Expected effect
1	perception of dynamics	Cultivate students' sensitivity to strength	Explain the relationship between strength and volume	To improve students' understanding of the relationship between playing strength and volume
2	The strength is uniform	Improve students' consistency of strength in continuous notes	Select the appropriate track and conduct intensity training section by section	Students can maintain a strength balance between the notes
3	Strength change	Dynamic changes in learning strength	Imitation the teacher's strength change, according to the emotion of the music	Students can use strength changes to express their musical emotions
4	Music analysis	Analyze the strength change pattern in the music	Understand the strength indication of the music notation, and apply the correct strength approach	Students can understand and apply the role of strength in music

The teacher can guide the students in specific combination exercises of timbre and intensity, such as finding the appropriate timbre transition from weak to strong changes, or changing the timbre while keeping the volume stable. Through the scientific and effective training mode, make the students realize the relationship between the timbre and the strength, and guide the students to consider the volume balance when adjusting the timbre. Then, the teacher can let the students try to play the same melody in different tone ranges, and feel the change of timbre and volume in the high and low tones areas. Make the students learn how to use the timbre change to adjust the volume, improve the students' volume balance ability. And the teacher designs the contrast timbre exercises for students, such as playing bright and deep notes at the same time, requires students to maintain the overall volume balance at the same time, let the two timbre coexist harmoniously. With the help of teachers, the students can understand how to analyze the balance between different timbre, and enhance the students' ability to control the volume in the actual performance.

4.4 Try practicing independently with both hands

Due to the particularity of piano performance, the division of labor between the left and right hands is different. Through independent practice with both hands, students can focus on the movements of each hand, including the strength and speed of touching the key, which helps students independently control the volume of the left and right hand. In complex piano music, the left and right hands often need to undertake different melodies or harmony parts. Through independent practice, students can balance the volume of each part, so that the overall music is more coordinated. And encourage students to accurately control the volume of each note, students can more accurately control the volume of each note, enhance the students' musical expression[9]. In addition, in the actual performance, students may encounter various unexpected situations, such as temporary volume changes, coordination with other instruments, etc. Through independent practice with both hands, students can adapt to the volume change faster, so that students can maintain a good volume balance in solo and ensemble, and promote the improvement of students' piano professional piano quality.

Based on the actual situation of the students, the teacher can decompose the complex music into the separate control part of the left and right hands, and let the students practice separately, with the focus on mastering the volume of each hand. After proficiency, the left and right hand exercises are gradually merged, so that students can pay attention to the volume balance of both hands at the same time. Through many exercises, students' good control of the volume balance is gradually improved. Subsequently, teachers can design practice tracks with obvious intensity contrast for students, such as Beethoven's

variations, asking students to use different volumes on different combinations of notes. By increasing the difficulty of practice, students can learn to adjust the volume flexibly and improve the coordination of both hands. In order to further improve students' ability to control the volume, teachers can encourage students to close their eyes during practice and rely entirely on hearing to judge the volume balance. By repeatedly listening to your own performance, you find that the volume is unbalanced and adjust yourself. So as to help students to establish the internal standard of volume perception, enhance students' self-correction ability.

Figure 2 Tonic color perception training topic

Figure 3 Practice independently with both hands

4.5 Instructhe students to play

In the piano education in colleges and universities, teachers should strengthen the performance guidance to students and help them understand the overall structure of musical works. Through the scientific guidance made by teachers to students, students can accurately grasp the volume balance, and make it matches with the atmosphere, emotion and dynamic changes of music. Performance instruction usually involves the understanding of timbre, dynamic hierarchy and musical lines, and is an important factor affecting the balance of piano volume[10]. Teachers can provide professional advice to help students identify and correct volume control problems and improve their professional skills. At the same time, in stage performances, volume balance is essential to convey the beauty of the music. Through the performance guidance, teachers can help students to adjust the volume in the actual performance environment, ensure that every note and every chord are properly presented, improve students 'performance ability, and play an important role in

students' future career development.

Teachers can guide students to deeply understand the dynamic markers in the music score, such as f (forte), ff (fortissimo), p (piano), pp (pianissimo), etc. By analyzing the relevant markers, students can know when the volume should be reduced, when the volume should be increased, and keep a good volume balance during the performance. Subsequently, the teacher can apply the stratified practice method. Guide the students to break down a track into different parts, and then conduct volume balance training respectively. First focus on the bass part, maintain the appropriate volume, and then gradually add the middle and high voice part, adjust the volume proportion of each part, to ensure the clear coordination of each voice, cultivate students' volume control ability. In addition, teachers can organize students to play a four-hand ensemble exercise. Exercise the students' volume balance ability, so that the students can keep the volume consistency with others in the process of cooperation. Guide students to adjust the volume when cooperating with others, to achieve a harmonious and unified performance effect, promote the further improvement of students' professional ability, so that students have a good teamwork ability.

Figure 4 Piano performance instruction

5. CONCLUSION

To sum up, volume balance is the key content of piano education in colleges and universities, which plays an important role in improving students 'piano playing ability and promoting students' piano level. Through the volume balance guidance for students, students can keenly perceive the volume change of the piano, improve students 'understanding ability of the piano, and meet students' learning needs. Based on this, it is necessary for teachers to conduct volume balance education for students, which is the direction of the piano education reform in colleges and universities, and can promote the continuous improvement of the quality of piano education in colleges and universities.

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A Visual Analysis of the Foreign Nietzsche Study in 2000-2023 Based on Citespace

Li Wenjie[1], Yang lan[2]
[1] Guangzhou Guangjiafu Supply Chain Management Co., Ltd , Guangzhou, Guangdong, China
[2] South China Business College , Guangdong University of Foreign Studies , Guangzhou, Guangdong, China

Abstract: Nietzsche As a famous thinker in the history of western philosophy, his thoughts not only left a deep imprint on the later development of existentialism, but also involved in the fields of deconstruction, postmodernism, hermeneutics and other fields. Based on this, this paper takes 847 research documents related to the Nietzsche field included in the Web of Science core collection database from 2000 to 2023 as research samples, and uses the scientific knowledge mapping method to sort out the research hotspots and evolution process in this field. The study found that the number of highly cited documents in the Nietzsche field is more, and the degree of cooperation between the literature is relatively high. The research content mainly focuses on N ietzsche's criticism of traditional philosophy, N ietzsche's relationship with other philosophers, various kinds of doctrine and related disciplines. Research hotspots include politics, philosophy, ethics, genealogy, education, etc. At the same time, Max and other hot spots have been continuously concerned recently. In terms of keyword evolution, keywords appeared after 2005, and the number of keywords appeared each year is relatively average.
Keywords: Deleuze; Ethics; Subjectivity; Capitalism; Critical theory; Science

1 INTRODUCTION

Nietzsche Considered one of the most important philosophers at the end of the 19th century, his ideas had a profound influence on modern culture and philosophy. Nietzsche's ideas include the concept of superman and the supremacy of will, the concept of pessimism, the criticism of traditional morality and religion, and the criticism of truth and language. Nietzsche's works are considered to be an important part of modern thought and one of the important objects of study and discussion by contemporary philosophers. In recent years, the research on Nietzsche has gradually attracted wide attention from academic circles and accumulated fruitful research results. For example, Berry (2023) re-examined Nietzsche's criticism of compassion [1], Meredith (2024) discussed Nietzsche's criticism of power [2] et al.

However, there are few studies on the fields related to Nietzsche from the perspective of scienttrics. Therefore, in order to further explore the current research in the field of Nietzsche, grasp the field of the dynamic, based on the scientific knowledge mapping method, using CiteSpace, information visualization analysis software, through the 2000-2023 Web of Science database about "Nietzsche" related academic literature, explore the research hotspot and evolution trend, in order to provide reference for future research in the field of Nietzsche.

2. DATA AND METHODS

2.1 Data source

This paper takes the Web of Science English database, with the largest number of papers in the world, as the main data source. In order to improve the accuracy and authority of the literature, this paper searched "Nietzsche" as the subject word in the core collection database of WOS, and the time range was selected from 2000 to 2023. Through screening, 847 valid articles containing information about the author, keywords, abstract, and date of publication were obtained. The search time was on May 10,2024, and the final pure text format was exported. Based on this, the visual map of the Nietzsche research field.

2.2 Study methods

This study mainly explores the development of Nietzsche research field. The formation of scientific knowledge graph is mainly based on metrology, and its theoretical framework involves a very wide range, including library information science, bibliomeometry, etc. Scientific knowledge graph takes knowledge domain (knowledge domain) to show the evolution and structure of a discipline or field, which can make scientific knowledge more obvious and intuitive; at the same time, we can understand the relationship between each knowledge group, it is this complex knowledge relationship that contains the generation of new knowledge. One of the most popular tools for scientific knowledge mapping is the CiteSpace. CiteSpace Is supported by the university of Dreel professor Chen Chaomei and its research team development based on the visual analysis of the J ava running environment software, its basic purpose is through different angles such as keywords, the author and institutions to identify scientific literature and visual analysis, can help scholars summarized different schools, different perspectives of academic literature, presents the structure of scientific knowledge, correlation, evolution and differentiation, etc. By using the software with version number CiteSpace5.5.R2 as an

analysis tool, this paper mainly visually analyzes a series of basic information such as literature citation, keyword hotspot, keyword evolution and emerging words, so as to explore the forefront of scientific research in the field of Nietzsche research.

3 RESULTS

3.1 Literature was co-cited

Co-citation analysis means that if two documents appear in the reference of the third cited literature, the two documents constitute a co-citation relationship. The co-citation relationship of literature will develop with the change of time. Literature co-citation network research can explore a certain one, and the development of the research field is in the evolutionary dynamics. Therefore, this paper uses C itespace visualization software to map the literature of Nietzsche (see Figure 1) to reveal the academic community of the research field and the key literature that has made important contributions.
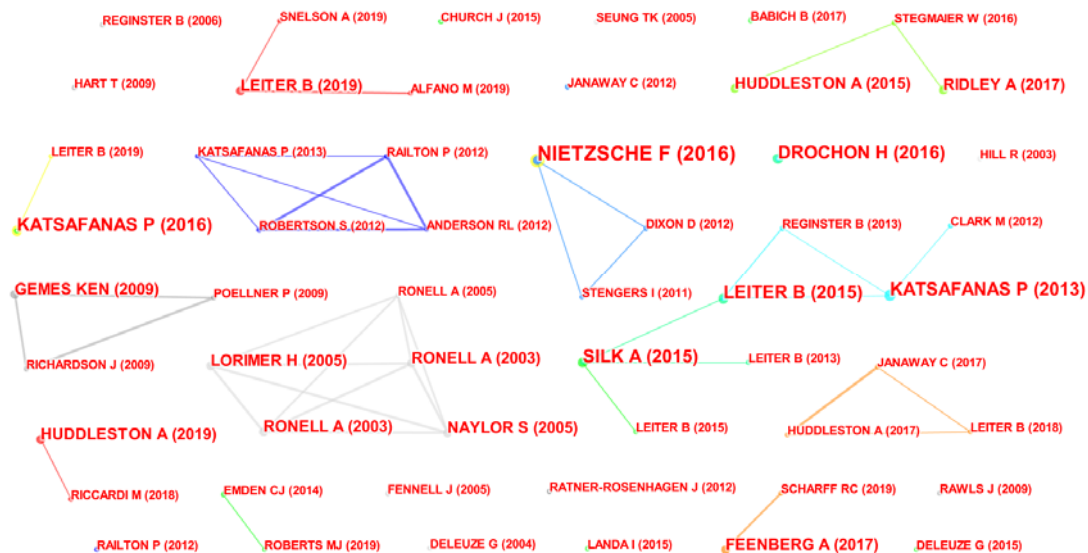

Figure 1 Literature co-cited knowledge map

As can be seen from Figure 4, there are 65 co-cited authors in the study on nietzsche, with a high degree of coincidence between documents, and a wide range of co-cited network. At the same time, 12 academic research communities were formed among the articles, among which the group centered on literature Leiter B (2015) was the largest, including 7 cited articles. The literature explains Nietzsche's astonishing idea of "being the innocent" and partly defends its importance that no one is morally responsible for what they do and that many of the alleged reactive attitudes are wrong [3]. Next by LORIMER H (2005) and RONEL LA (2003), consisting of 5 documents. The rest, however, were small groups and consisted of four or fewer articles.

In terms of the total citation frequency, the top of them were NIETZSCHE F (2016), LEITER B (2015), HUDDLESTON A (2017), HUDDLESTON A (2015), KATSAFANAS P (2016), SILK A (2015) and DROCHON H (2016) with the total citation frequency of 6 or more. Among them, HUDDLESTON A (2017) explores a central concept in Nietzsche's work. Health includes some core signs such as resilience, discipline, vitality, a certain positive condition of the will to power, a certain tendency to integrate, etc. It may be understood as a formal or dynamic term, related to the human will to power or the unity of the human drive of [4]. HUDDLESTON A (2015) believes that Nietzsche, as a critic of morality, and some scholars have misunderstood Nietzsche's interpretation of this moral system. At the same time, the literature puts forward another explanation, namely Nietzsche against the expressive characteristics of moral value itself, because we see in Nietzsche's works is a central critical style, especially in his criticism of morality, involving the interpretation of social and cultural phenomena, like explain the text or art, its purpose is according to the significance or importance of [5].

3.2 Analysis of research hotspots

Key words are the core summary of a literature. The analysis of key words can understand the research topic of the target literature. However, the keywords listed in the same literature must have some association, which can be expressed by the frequency of co-occurrence. Generally speaking, the more frequently keywords appear in the same literature, the more important the role of keywords in the literature. The common word analysis method is to reflect the strength of the correlation between keywords through the co-occurrence of vocabulary pairs or noun phrases in the statistical literature, and then determine the research hotspot, composition and paradigm of the discipline or field represented by these keywords, and analyze the development process and structural evolution of the discipline field horizontally and vertically. Therefore, based on Citespace

visualization software, based on the method of keyword co-occurrence network, the Nietzsche research field (see Figure 2) and the keyword frequency statistical table (see Table 1).

Figure 2 Keyword co-occurrence knowledge graph
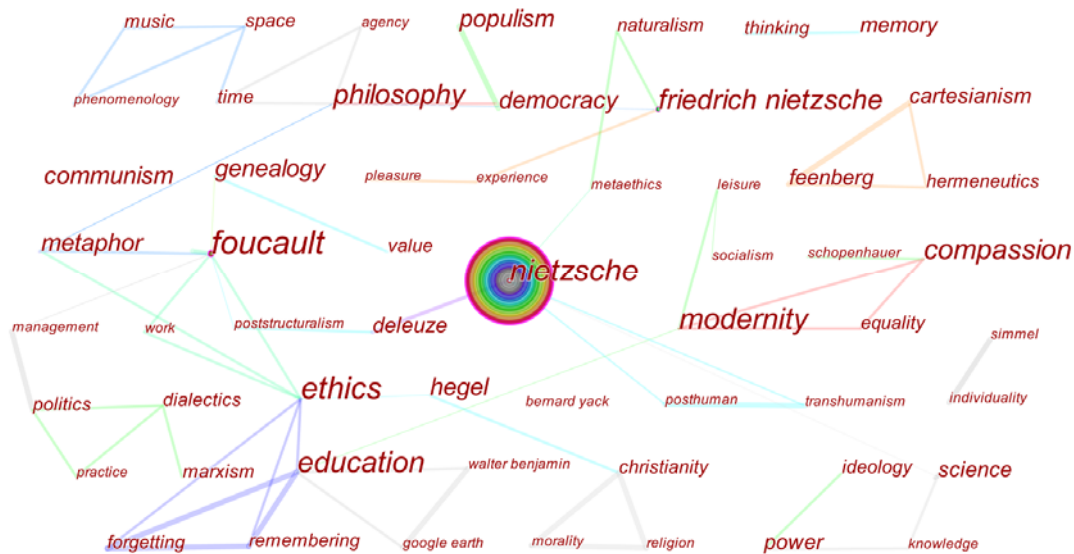
(1) According to Figure 2,117 nodes appeared in the Nietzsche research field, with 166 connections between the nodes. Among them, the node of the main search term Nietzsche is the most prominent in the map, with a maximum frequency of 502 times and a centrality of 0, and first appeared in 2016. His negation of traditional values, his criticism of rationalism, his attack on religion, and his profound insight into the nature of human nature have all had a profound influence on modern thought. Nietzsche is a famous philosopher and linguist. His negation of traditional values, his criticism of rationalism, his attack on religion, and his profound insight into the nature of human nature have all had a profound influence on modern thought.

(2) Keywords about the relationship of Nietzsche with other philosophers such as Foucault, Marx, Deleuze, Kant, Heidegger, etc. Nietzsche's famous saying "Death from absolute knowledge" profoundly influenced Foucault's view of Nietzsche and lasted for nearly 20 years. During this time, Foucault continued to use Nietzsche as a model [6] for his main philosophy and methodology. And Marx as one of the greatest revolutionaries and scientists in human history, in the understanding of modern is, and Nietzsche, there are many differences, such as Nietzsche the whole culture is based on the economic base in maintaining the indispensable role of all culture, on the contrary, Marx is more attention to the fate of civilization [7].

(3) Key words related to the subject include philosophy, genealogy, aesthetics, sociology, moral psychology, etc. Nietzsche The core of philosophy is

the will to power. He put forward the superhuman philosophy of active action, believing that the will to life is low, the essence of life is the will to right, and the will to right is the origin of the world. Nietzsche The philosophical thought retains the commitment to the concept of truth [8].

(4) The key words about all kinds of doctrine are: capitalism, nihilism, naturalism, postmodernism, transhumanism, marxism and so on. Thoughts and beliefs with complete systems can also be regarded as different ways to achieve different goals. Some scholars point out that Nietzsche's political philosophy is obviously elitist and anti-democratic, so it is by no means a "social criticism" of the inequity and exploitation characteristics of modern class society [9].

(5) The key words about Nietzsche's criticism of traditional philosophy include: critical theory, dialectics, resistance, resentment, tragedy, etc.

3.3 Keyword time evolution analysis

Keyword timeline knowledge graph is based on the clustering of keywords, each type of keywords from left to right before and after the time of occurrence, and the keywords contained in each cluster are below the cluster name. In the keyword timeline knowledge graph, the size of the node indicates the frequency of the occurrence of the keyword, and the year of the node indicates the time when the keyword first appears. Because this paper uses Citespace visualization software to generate cluster-based keyword timeline knowledge graph (see Figure 3), which can more intuitively understand the hotspot evolution process in the Nietzsche research field.

Table 1 Keyword frequency statistics

Order Number	Keyword	Frequency	Centrality	Order Number	Keyword	Frequency	Centrality
1	Nietzsche	231	0.49	16	Science	9	0.13
2	Friedrich Nietzsche	30	0.21	17	Capitalism	9	0.21
3	Foucault	23	0.24	18	Nihilism	8	0
4	Politics	15	0.01	19	Subjectivity	7	0
5	Philosophy	14	0.48	20	Heidegger	7	0.12
6	Ethics	14	0.41	21	Freedom	6	0
7	Genealogy	13	0.17	22	Metaphor	6	0.21
8	Education	13	0.21	23	Illness	6	0
9	Deleuze	12	0.07	24	Value	6	0.12
10	Modernity	11	0.2	25	Ressentiment	6	0.22
11	Marx	11	0.14	26	Ideology	5	0.06
12	Power	11	0.13	27	Sociology	5	0
13	Aesthetics	10	0	28	Naturalism	5	0.05
14	Kant	10	0.16	29	Culture	5	0
15	Critical Theory	9	0.36	30	History	4	0
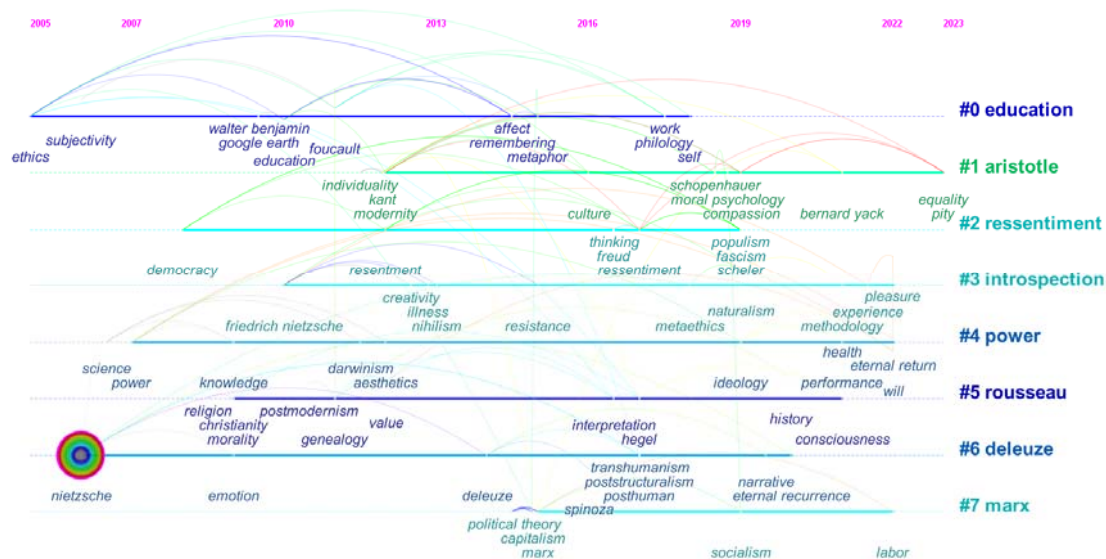
Figure 3 Keywords, timeline knowledge graph

According to Figure 3,8 clusters were generated in the Nietzsche research field, which also represented 8 research directions: # 0 education, # 1 Aristotle, # 2 ressentiment, # 3 introspection, # 4 power, # 5 Rousseau, # 6 Deleuze, and # 7 Marx. The above clusters are mostly related to philosophers. The module value Q size of the cluster is correlated with the density of the nodes, because Q=0.7425 is greater than 0.7, indicating that the network structure is more effective and can be used for scientific cluster analysis. The average profile value S size can be used to measure the homogeneity of the clusters, with S=0.5039 greater than 0.5, indicating high homogeneity and better division of different clusters.

From the perspective of the time distribution of keywords, the keywords were concentrated after 2005, and the keywords that appeared each year were relatively average. Cluster # 0 education contains the most keywords with 12. The early keywords are subjectivity and ethics, and then gradually evolved into google earth, education, self and other research fields. If there is an ethical reflection on which concepts are used, it must be Nietzsche, where Nietzsche takes more seriously than most people what concepts a person should live on. However, Nietzsche evaluates concepts in two very different ways: one is to look at the effect of the concept, but rather to see what the concept expresses [10]. Cluster

1 Aristotle contains a total of 10 keywords, among which, the keywords developed from individuality, modemity and other current bemard yack, equality, py. Both Nietzsche and Aristotle have exerted important effects on social psychology. In the highly competitive social world, there is a Nietzsche paradigm based on the premise of "will first", but also a Aristotle paradigm [11] with "prosperity" as the key feature, and morality and truth as its important basis. The research content of cluster # 2 ressentiment is mainly changed from democracy, resentment to thinking, populism and fascism.

3.4 Keyword occurrence analysis

Keyword emergence refers to the keywords that appear very frequently in the literature in a short period of time. The red lines form from the beginning to the end of the keyword emergence, indicating the importance and attention of the keywords in the research field. According to the change of the emerging words, we can further judge the frontier and trend of the research field. Therefore, this paper uses the Citespace visualization software to generate the keyword occurrence knowledge map in the Nietzsche research field on the basis of keyword co-occurrence, as shown in Figure 4. In the keyword emergence knowledge graph, the longer the outburst length, the longer the keyword heat lasts; the higher the emergence intensity (Strength), the higher the heat of the keyword during the outburst period.

Top 21 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2005 - 2023
ethics	2005	1.8354	2005	2010	
politics	2005	2.8968	2005	2007	
nietzsche	2005	2.0193	2006	2008	
subjectivity	2005	2.3718	2006	2011	
power	2005	2.0567	2007	2009	
science	2005	3.0766	2007	2012	
illness	2005	1.9271	2013	2018	
nihilism	2005	2.952	2013	2015	
deleuze	2005	1.9176	2014	2020	
philosophy	2005	2.4888	2015	2018	
metaphor	2005	2.2533	2015	2018	
sociology	2005	1.874	2015	2018	
culture	2005	1.7527	2016	2019	
education	2005	3.0016	2017	2018	
capitalism	2005	3.1544	2018	2019	
metaethics	2005	2.0091	2018	2019	
kant	2005	1.6192	2019	2021	
ideology	2005	2.2023	2019	2021	
marx	2005	2.6909	2019	2023	
naturalism	2005	2.2023	2019	2021	
critical theory	2005	3.1414	2019	2020	

Figure 4 Keywords appear knowledge grap

h

Figure 4 shows the 24 keywords that are most cited from 2005 and 2023. In the figure, the red part of the time period clearly shows the starting and ending time and the evolution of keywords. In terms of duration, the emergent word Deleuze lasts the longest, spanning 70 years, indicating that this emerging word has become a hot topic in 2014 and has lasted for a long time in the research field. As a French postmodern philosopher, his philosophy inherited both Spinoza and Nietzsche, and inherited the concept from other thinkers such as Artaud. Next, the emergent words ethics, subjectivity, science and illness. The duration of the remaining emerging words is within 5 years or less. Marx, which has appeared in 2019, is still a hot topic in the recent Nietzsche research field. From the intensity of

emergent words, the overall intensity of emergent words is low. The emergent word with the highest intensity is capitalism and the intensity is 3.1544. The second most prominent word is critical theory, which is 3.1414. In Nietzsche's critical theory, there is both a criticism of one-dimensional mass culture and a kind of alienation theory, which is closer to Marx's critical of capitalist alienation than commonly thought. The remaining emergent words with intensities exceeding 3 include science, education.

4 Conclusion

This paper is based on scientific knowledge map analysis method and CiteSpace visualization software, the Web of Science database theme "Nietzsche" in the literature literature cited analysis, keyword co-occurrence network and evolution analysis, emergent detection analysis, combing the forefront of the field of the frontier and development, to provide reference and reference for the future research in the field, the research conclusion is as follows:

(1) Among the cocited documents, the number of highly cited documents is large, and the degree of cooperation between highly cited documents is high, forming a tight and mature cooperative network in part. The literature with 6 or more cited frequency include NIETZSCHE F (2016), LEITER B (2015), HUDDLESTON A (2017), HUDDLESTON A (2015), etc. The above documents are important documents in the field of Nietzsche research, which also reveals the academic perspective of Nietzsche research field to a certain extent.

(2) In the research hotspots, the research hotspots in the field of Nietzsche take Nietzsche, politics, philosophy, ethics, genealogy, education and other keywords as the main line. The research contents mainly include N ietzsche's criticism of traditional philosophy, the relationship between N ietzsche and other philosophers, various kinds of doctrines and related disciplines. In the keyword cluster, there are 8 clusters related to philosophers, including # 0 education, # 1 Aristotle, and # 2 ressentiment. The clusters are linear arrangement, and the connection is relatively close.

(3) In terms of the evolution of research hotspots, the number of keywords that appeared was less before 2005, but it began to increase after 2005, and the number of keywords that appeared each year was relatively average. New keyword N ietzsche first appeared in 2000. In terms of sub-clustering, the earlier keywords in cluster # 0 education include subjectivity, ethics, etc., which gradually evolved into google earth, education, self and other research fields over time. The earlier keywords in cluster # 1 Aristotle are individuality, modemity, etc., which are then transformed into the study of bemard yack, equality, py and other contents. In terms of emerging word keywords, Deleuze, ethics, subjectivity, science and other emerging words lasted for a long time, all for more than 5 years. However, capitalism, critical

theory, science, and education were higher, all greater than 3.

4.1 Based on the analysis of the relevant research progress in the Nietzsche research field, future research in this field should focus on the following points:

(1) Cross-cultural and interdisciplinary research. With the development of globalization and the improvement of interdisciplinary research, future research in the Nietzsche field may need to talk about and compare Nietzsche ideas with other cultures and disciplines based on cross-cultural and interdisciplinary perspectives.

(2) The application of Nietzsche's ideas in the contemporary research. As an important thinker in the history of western philosophy, Nietzsche's thoughts involve many fields such as religion, morality, modern culture, philosophy and science, and they have a far-reaching influence on the development of contemporary society and culture. Therefore, in the future, more attention should be paid to how to use the ideas of Nietzsche to solve practical problems such as moral dilemmas and cultural conflicts.

(3) Nietzsche The deepening and expansion of philosophy research. With the deepening of the study of Nietzsche's philosophy, the future research can continue to explore the inheritance, development and criticism of Nietzsche's philosophical ideas in modern philosophy. Especially in the context of post-structuralism and post-modernism, how to re-examine Nietzsche's philosophical thought will be an important research direction.

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An Overview of Usage-Based Language Acquisition

Zeng Xinyi
Northwest Normal University, Lanzhou, Gansu, China

Abstract: Langacker, a cognitive linguist, proposed a usage-based model and referred to cognitive grammar as a usage-based theory. The use-based model of language acquisition considers language as an integral part of cognitive ability and posits that language knowledge is acquired through specific language use in conjunction with general cognitive abilities. This paper provides a concise introduction to the usage-based language acquisition and presents this view from both domestic and international perspectives.
Keywords: Usage-based; Language acquisition; Construal; Cognitive linguistics

1. INTRODUCTION

The usage-based language acquisition is grounded in usage-based linguistic theories. These theories do not refer to a singular framework but encompass several linguistic theories that share a common foundation, such as cognitive linguistics and construction grammar.[1] They conceptualize linguistic knowledge as an aggregate of symbolic units organized in specific structures, such as the interplay between various forms and meanings. Furthermore, these theories view linguistic knowledge as a composite of symbolic units arranged according to particular structures, exemplified by the blending of different types of forms and meanings, each with varying levels of complexity and abstraction. The usage-based language acquisition contrasts sharply with Chomsky's theory of linguistic talent. Chomsky posits the existence of an innate mechanism within the human brain dedicated to language acquisition, using this concept to elucidate the process. In contrast, the usage-based theory of language acquisition contends that no specialized innate mechanism exists for language acquisition. Instead, it proposes that language acquisition, similar to acquiring other knowledge and skills, relies on the general cognitive abilities inherent in human beings.[2]

2. DEFINITIONS OF USAGE-BASED LANGUAGE ACQUISITION

In 1987, Langacker proposed a "usage-based model" drawing from linguistic theories such as cognitive linguistics and construction grammar. Langacker (1987) defined the essence of the usage-based model as emphasizing the real-world application of the language system and the speaker's knowledge thereof. This encompasses the entirety of conventional linguistic knowledge possessed by the speaker, regardless of its integration into a broader theoretical framework. The usage-based model places significant importance on the practical utilization of the language system and the speaker's familiarity with its application. The grammar encapsulates all established linguistic conventions within the speaker's repertoire, irrespective of their compatibility with a more generalized approach. This perspective rejects reductionism in favor of a comprehensive examination of linguistic structure through a network of explicit schemas that prioritize lower-level schemas. Langacker's interpretation of usage-based model essentially aligns with the principled methodology of cognitive grammar. He characterizes cognitive grammar as a usage-based model of linguistic structure, emphasizing a universal approach that is expansive, non-reductive, and bottom-up. This stands in contrast to the foundational principles of economy, reduction, and generation espoused in generative grammar.

Bybee (2008) states that a usage-based view of language acquisition views language as a continuum of linguistic units ranging from the concrete to the complex, with vocabulary and grammar in the traditional sense of the word being on this continuum, with knowledge of language as a combination of various types of forms and meanings, and with language being developed primarily in the context of communicative use.[3]

According to Tyler (2010), usage-based linguistic theories are grounded in five fundamental concepts: (1) Language primarily serves the purpose of communication. (2) Natural language use is always contextual and influenced by factors such as the relationship between the speaker and listener, which impacts word choices. (3) The acquisition of language occurs later in life, without an innate language acquisition mechanism. (4) Meaning stems not only from lexical items, but also from grammatical structures themselves. (5) There is no strict division of linguistic levels, such as syntax and lexicon; each syntactic structure carries its own distinct meaning, without transformational relationships between them—for instance, passive sentences are not merely conversions of active sentences.[4]

Language acquisition stems from the practical use of language, with the experience of language use shaping the accumulation of linguistic knowledge. In essence, language learners acquire a specific language through communicative practice. During the abstraction phase of language acquisition, instances of language stored in the brain are reinforced through repeated use. These

instances do not get replaced by abstract language structures; instead, they coexist alongside them. Given that language knowledge derives from language experience, its acquisition is inherently linked to the quantity of language exposure. Consequently, the frequency of language exposure is considered a crucial mechanism for language acquisition. Bybee (2007) in *Frequency of Use and the Organization of Language* classifies language exposure frequency into two categories: instance frequency and type frequency. Instance frequency pertains to the number of occurrences of a given linguistic expression in language experience, which can be a sound, word, phrase, or sentence. Type frequency, on the other hand, refers to the count of distinct instances of a linguistic type during language usage.[5]

The usage-based language acquisition suggests that instance frequency and type frequency determine language acquisition to some extent. Tomasello (2005) points out that the instance frequency of an expression during language acquisition determines its degree of solidification and fluency in extraction and use, while the type frequency determines the generativity of the use of a language type. The higher the type frequency of a linguistic pattern, the more generative the pattern is, and the more useful it is for generating new linguistic expressions.[6]

Bybee (2006) points out that language structure cannot be separated from use, and people summarize regular language patterns intentionally or unintentionally from the process of language use. Language formation, acquisition, and utilization are all the products of repeated use, and language learning is based on the use of specific constructions, and linguistic structures that recur in language activities become linguistic units after reinforcement.[7]

3. STUDIES ON THE USAGE-BASED LANGUAGE ACQUISITION AT HOME AND ABROAD

3.1 Studies on the usage-based language acquisition abroad

Christiansen and MacDonald (2009) used online reading to examine the ability of American learners to learn German and Dutch progressive sentences, and the results of the study showed that American learners were able to process both simple and complex progressive sentences.[8] Year and Gordon (2009) examined whether high-frequency prototypical verbs significantly facilitated the learning of similar verb structures using balanced and biased frequency inputs, and the results of the two types of inputs were inconsistent, suggesting that the learning of a particular linguistic structure is influenced by the interaction of different factors.[9]

Spoelman and Verpoor (2010) used a multiple longitudinal case study approach to examine the learning of a second language by adults, and the results showed that the developmental process of the subjects' learning of target structures, such as interrogative

sentences, conformed to the trajectory from concrete examples to abstract structures, and that explicit teaching and explicit knowledge had a significant impact on second language learning and use.[10]

Tyler (2012) carried out a study on the usage-based view of language acquisition by selecting modal verbs, prepositions and important syntactic structures that are difficult to learn in English, and through the results, it is clear that the theoretical application of the usage-based view of language acquisition can more effectively promote students' acquisition of modal verbs, prepositions and other important syntactic structures. Li and Eskildsen (2014) explored in the study the classroom audiovisual communication corpus the learners' cognitive trends of motor structures, and the results showed that motor structures gradually developed from concrete lexical items to abstract forms, and showed a tendency to progress as linguistic forms surfaced.[11]

Josh (2018) examined the tendency of German and Chinese learners of English to judge prepositions in relational clauses as prepositions or postpositions.[12] The results showed that subjects' judgment of relational clauses interacted with their native language and English proficiency, and German learners were more likely to accept prepositional fronting than Chinese learners, which led to the conclusion that input frequency and cross-linguistic similarity have a significant effect on bilingual prepositional fronting or post-fronting.[13]

3.2 Studies on the usage-based language acquisition at home

In China, the use-based language acquisition is applied to English teaching practice. Niu (2017) helped students to improve their second language output through Construct-Block Teaching, so as to improve the accuracy and fluency of their second language expressions. Meanwhile, she summarized the usage-based view of second language acquisition, including the following points: first, language knowledge comes from language experience, and second language acquisition requires learners to acquire a large number of second language constructions; second, any construction is abstract or schematic for second language use events, and second language acquisition goes through the developmental path from idioms to low-domain schemas to constructions; third, the frequency of exposure has a great influence on the efficiency of second language learning, the higher the frequency of exposure to constructs, the faster the speed of acquisition; fourth, language input also affects second language acquisition, high-quality language input can help second language learners acquire second language; fifth, the content of second language acquisition should be close to the real society and the corresponding cultural environment. Han (2018) advocates that English learners should be exposed to authentic and authentic discourse from native English speakers as much as possible, and

acquire the language sentence by sentence in the discourse, instead of learning vocabulary and grammar in isolation, and guide students to discover and apply the rules of the language, and then acquire the language through extensive use.[14]

Based on the theory of the language acquisition view of use, Chen (2020) explores the effective methods of college English teaching for physical education students by increasing the frequency of students' language exposure, and promotes the development of physical education students' comprehensive English application ability.[15]

Many scholars have adopted a corpus approach to study the usage-based language acquisition. Wang and Liu (2013) used a corpus approach to compare the use of stance-marked chunks in English academic papers by Chinese learners and subject experts, and found that learners' acquisition of chunks has the typical characteristics of a complex system, which is a probabilistic process affected by multiple factors and fluctuating, a finding that confirms the basic view of the usage-based view of language acquisition, i.e., language development is a probabilistic process. Li and Deng (2022) used a corpus of students' Chinese-English consecutive interpreting, combined with psycholinguists' conclusions about the advantages of chunks in language processing, and found that high-frequency chunks help to improve the efficiency and quality of interpreting.[16]

Based on the language acquisition perspective, Wang (2015) employs the audible thinking approach to delve into the mechanism of reading preceding writing as a means to facilitate language learning. The analysis results confirm the effectiveness of this approach, as it aligns with the principles of language acquisition. Language development is expected to occur naturally in accordance with the laws governing human communicative activities and cognition. Therefore, through interactive writing, both children and adults can efficiently acquire language skills. In Wang's (2015) study, the mental representations of high-frequency ordinary bilingual collocations were examined among intermediate and low-level learners. The findings indicate that both groups demonstrate processing advantages for ordinary bilingual collocations. This verification suggests the possibility of bilingual collocational learning during the beginner and intermediate stages of bilingual language acquisition. Moreover, these empirical findings provide support for the usage-based view of language.[17]

Zhong (2015) focused on the processing of high-frequency programmed phrases in English by Chinese learners with intermediate proficiency. The findings revealed that learners exhibited an advantage in processing these phrases, showcasing a gradual increase in speed as the frequency of the chunks increased.[18] Additionally, there was a continuum pattern observed in their response time and reading aloud. In a separate study conducted by Xu and Wang (2015), it was demonstrated that intermediate and high-level learners displayed faster recognition and lower error rates for different categories of chunks. However, the impact of English proficiency on correctly recognizing non-phrase chunks was found to be greater compared to phrase-based chunks.[19] These findings provide empirical evidence in support of the usage-based view of language acquisition. Furthermore, Xu (2017) investigated the effects of morphosyntactic frequency, lexical frequency, and morphosyntactic convexity on the acquisition of passive constructions in English at various stages of proficiency.[20] The study supported the hypotheses derived from the usage-based view of language acquisition, particularly regarding the frequency effect and the morphosyntactic convexity effect. Additionally, it highlighted the joint influence of learning experience and linguistic features on the acquisition of constructions.[21]

4. CONCLUSION

The usage-based language acquisition posits that language knowledge arises from the experience of using language in communicative contexts. This perspective suggests that linguistic knowledge is built upon human physiological conditions, cognitive mechanisms, and the high frequency of language events. According to this view, the linguistic knowledge base consists of symbolic structures that vary in size, complexity, and abstraction. These symbolic structures, which encompass both form and meaning, emerge through use and interconnect to form nodes within a network of connectivity. The boundaries between linguistic domains are considered fluid, creating a continuum from vocabulary to grammar. An overview of the usage-based language acquisition highlights its broad applicability and deepens our understanding of cognitive linguistics. By providing a new perspective, it re-conceptualizes our comprehension of language processing and output. It is anticipated that this approach will continue to evolve and exert a more profound influence on the field of language acquisition in the future.

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A Study on the Negative Transfer of Mother Tongue in English Writing

Ran E
Northwest Normal University, Lanzhou, 730070, Gansu, China

Abstract: Language transfer has been a focus in the study of second language transfer for many years, and it exists in every aspect of Chinese-speaking students' second language acquisition, especially in English writing. The new high school English curriculum standards have made clear requirements for English writing, but due to the influence of mother tongue, the level of English writing varies from person to person, and many students cannot meet the requirements, which determines that it is essential to pay much attention on English writing. The paper probes into which parts the negative transfer influences English writing at the most, the causes of the negative transfer, and how to avoid the negative transfer. Negative transfer occurs at lexical, syntactical, and textual levels, and the reasons can be attributed to learners' lack of cross-cultural awareness, insufficient language input, lack of good studying habits, and the negative effect of English teaching methods. After that, the paper puts forward the following strategies: cultivating learners' cross-cultural awareness, expanding learners' reading amount, cultivating the habits of reviewing and summarizing, and teaching writing in effective methods, to help students avoid negative transfer of mother tongue in writing to the greatest extent and improve the ability of English writing effectively.

Keywords: Negative transfer; Second language acquisition; English writing

1. INTRODUCTION

Language transfer, which greatly affects the efficiency of acquiring a second language, is an important subject in second language acquisition. People who learn second language in their native language environment must be familiar with the rules of their mother tongue, so they often transfer those rules into the second language unconsciously, and then language transfer appears. Language transfer, an ineluctable topic in second language acquisition over the years, is embodied in two forms: positive transfer and negative transfer. Positive transfer occurs when the mother tongue facilitates second language acquisition, and negative transfer occurs when learners' mother tongue increases the duration or the frequency of exercises required by second language acquisition or hinders the acquisition of second language in many aspects of language learning like reading, writing, speaking, listening and it is concerned by many scholars and experts for it is more influential than positive transfer in second language acquisition.[1]

English writing is a comprehensive test of learners' grammar, vocabulary, syntactic knowledge, and ability of logical thinking and language organization. The new high school English curriculum standards (2017) have made clear requirements for English writing, but due to the influence of mother tongue, the level of English writing varies from person to person, and many learners cannot meet the requirements, which determines that it is essential to pay much attention on English writing. The paper concerns the negative transfer of mother tongue in English writing. According to previous studies, negative transfer occurs in every aspect of English Writing, such as vocabulary, syntax, and discourse. Based on previous studies and materials, this paper is written for the following three purposes: to find in which aspects the effect of negative transfer occurs in English writing, to analyze the causes of the negative transfer of mother tongue in these aspects, and to puts forward some strategies to decrease the negative transfer of mother tongue and improve the writing competence.[2]

2. NEGATIVE TRANSFER OF MOTHER TONGUE IN LEXICAL LEVEL

A composition is composed of a large number of words, so, enough vocabulary and the correct use of vocabulary are the prerequisites for writing a good composition. The phenomenon that a learner continuously meets difficulties in expressing his or her ideas exactly in the target language because of the effect of a deep-rooted mother tongue is the negative transfer of mother tongue on vocabulary level, and this negative transfer of mother tongue in vocabulary level mainly contains the errors in word choice, word collocation and the morphological change of the word.[3]

2.1 Word choice

Choosing an exact word is a basic skill that reflects learners' writing ability. Mark Twin has said, "The difference between the right word and the almost-right word is as great as that between lighting and the lighting bug." In choosing words, students tend to ignore connotations and continue to reuse some simple words they are familiar with, which makes it difficult to use words accurately, richly, and effectively.[4] Plenty of predecessors' studies have shown that word choice ranks highly in vocabulary errors. The Chinese meanings of every English word can be found in an English-Chinese dictionary, and even if an English word has more than one meaning, so do Chinese words.

Chinese learners are prone to mix up many words that have the same meaning, namely synonyms in English, and use synonyms without discrimination.[5] However, there are no two words in full accordance with each other, even synonyms will be different on many levels, which makes it difficult to choose an exact word in writing. Although it is not difficult for a Chinese learner to write a composition to roughly show his or her ideas as it is easy to find the English word by looking the Chinese counterpart up in a dictionary, there is no exact English word that is in full accordance with the Chinese counterpart but identical superficially.[6] The process of translating Chinese words into English roughly without conveying the sense is called literal translation, which is a common phenomenon in Chinese students' writing, and greatly decreases the quality of students' composition. Hence, word choice plays an extremely important role in English writing.[7]

Because both English and Chinese words have the connotative meaning of words, it is not difficult for learners to understand them. Chinese learners often cite some slang that contains many uses of connotations of animal, color, number, and other features, but the connotations of words in English and Chinese are not the same which makes students always make mistakes in English writing. For example:

(1) ? She is a girl as timid as a mouse.
(2) ? He often makes yellow jokes.
(3) ? Think three times before you go.

These three sentences above occur because of the negative transfer of Chinese. The connotations of animal words in Chinese and English are different. In example (1), it should be rewritten as "She is a girl as timid as a hare." because the mouse is used in Chinese to depict someone timid but a rabbit, which is a symbol of alertness and agility in China, is the English counterpart of mouse in Chinese culture. For example (2), the meaning of "blue joke" in English is obscene rather than "yellow jokes". Similarly, in example (3), not "think three times" but "think twice before you go" is the authentic expression in English.[8]

2.2 Word Collocation

Errors in the collocation of words are also noticeable in English writing. Chinese students often write down some phrases with literally correct meanings but improper collocations. For example:

(4)? eat breakfast, eat medicine, learn knowledge, there have…, say the truth, big rain/wind

Such examples are common in Chinese students' compositions because of the fixed ideas of Chinese ways of expression that make learners ignore these fixed collocations in their English counterparts. These should be revised to "have breakfast, take medicine, acquire knowledge, there be…, tell the truth, and heavy rain/strong wind", which convey the same meaning if translated into Chinese.[9]

Besides, some words with the same meaning but in different usage in various situations also make it easy to make mistakes if the learner fails to memorize the fixed collocations. For example:

(5) ? He is looking TV.
(6) ? Look you tomorrow.
(7) ? Watch at the picture.

Sentences in the above three examples are also correct in meaning if translated into Chinese, but they should be "watching TV" "see you tomorrow" and "look at" because it has been stipulated in English.

2.3 Morphological change of words

English has various morphological changes, in which the morphology and meaning of words change with the affixes, including a large number of prefixes and suffixes, while Chinese has no strict morphological changes. The affixes in English are flexible and often polysemy, and are not only numerous in number but also complete in variety. Although Chinese sometimes use affixes to form words, it is inferior to English in terms of quantity and variety. In English, various meanings can be conveyed by changing the morphological form of words and using these words to form sentences flexibly, which makes it difficult for Chinese learners to write a composition without any mistakes in morphology. The meaning and part of speech accordingly change with the change of the morphological forms, which occurs in English frequently but little in Chinese, so Chinese learners usually ignore the morphological change or add inappropriate affixes to some words in their English composition. For examples:

(8) ? He always brings us happy.
(9) ? Unadequate money is the main problem.

The word "happy" in example (8) is an adjective but a noun is needed here according to grammatical rule, hence the sentence should be "He always brings us happiness". Example (9), on the other hand, shows the confusion of the negative prefix "un" and "in". Although both "un" and "in" is available in the perspective of word formation and are acceptable in meaning, "inadequate" rather than "unadequate" is appropriate in English. Chinese learners always make mistakes because there is only "不" is added before an adjective to convey the opposite meaning in Chinese.[10]

The negative transfer of mother tongue in vocabulary level exists in the whole process of English writing. When learners encounter difficulties in expressing their ideas in their writing, they will transfer their mother tongue to make up for the deficiency of the target language. Chinese learners need to pay attention to these aspects in English writing and try to avoid the negative effects of their mother tongue.[11]

3.NEGATIVE TRANSFER OF MOTHER TONGUE IN SYNTACTICAL LEVEL

The previous studies and findings show that the negative transfer of mother tongue at a syntactical level is another influential factor that affects learners' English writing.[12] Many learners are used to translating Chinese sentences in their minds into

English when writing, instead of using English sentence patterns to express their ideas. However, there are great differences between Chinese and English sentences in many places, hence literal translation makes learners unable to write authentic English compositions, full of Chinglish sentences. The difference between Chinese and English syntax lies in word order and grammar.[13]

3.1 Word order

Word order, the linear arrangement rule of the components in sentence structure, reflects the relationship between words, and it is the prominent expression of interlingual meaning at the syntactic level.[14] People from different countries express the same thing by using different word order because of their different ways of thinking and conducting affairs.[15] Chinese and English belong to two different language families. Chinese belongs to the Sino-Tibetan language family, while English belongs to the Indo-European language family. If languages are classified according to the characteristics of morphological changes in grammatical structures, English belongs to the "inflectional language", in which the information of the sentence is conveyed by the morphological changes of words; while Chinese is an "isolated language", which are dependent on word order and function words, and Chinese has no inflectional forms of words, the form of verbs do not need to be changed according to tense and person.[16] As a grammatical means to express grammatical relation, word order is one of the main ways of conveying the meaning of a sentence and certainly plays a decisive role in the meaning of the whole sentence for every word has its grammatical function in a sentence. The different ways of arranging the order of the same words show different syntactic structures and convey different meanings. The word order of Chinese is based on the principle of chronological order and logic, that is, what happens first comes first, while English is based on the principle of importance, that is, the most important content in a sentence comes first. For example:

(10) ? I went shopping and ate delicious food with my best friend, so, we had a nice weekend.

The sentence above should be revised in an English way of expression in which the main idea of the sentence should come first and the other sentence should be placed after it as the adverbial, that is "I had a nice weekend with my best friend because we went shopping and ate delicious food."[17]

In addition, according to the order of subject, verb, and object, the basic sentence structure is SVO in both Chinese and English, but the position of other sentence elements of English and Chinese are greatly different from each other, and Chinese learners always write English sentence automatically obey the rules of Chinese word order. For example:

(11) ? I very like English.

(12) ? Tommy yesterday ignored them in street as if they not exist.

Specifically, the position of the adverbs in an English sentence is usually placed behind, but in Chinese, adverbs are usually placed in front of a verb. Since the correct counterpart of example (11) is "I like English very much." In addition, the order of adverbial in Chinese is time-place-manner, like the word order of example (12), while in English, it should be manner-place-time (Wang, 2005), therefore, it should be "Tommy ignored them as if they do not exist in street yesterday." Errors like these two examples are ubiquitous in Chinese learner's composition because there is no difference in meaning and the two examples are idiomatic expressions in Chinese.[18]

3.2 Grammar

Grammar is the rules about the change of word form and word combination each other to make a sentence. Subject-verb concord, a basic rule in English grammar, is one of the most influential ones in second language acquisition for Chinese learners. Subject-verb concord means that in a sentence the form of the verb should be consistent with the subject in person and number. There are three principles in subject-verb concord which are grammatical concord, notional concord, and principle of proximity. Grammatical concord means that the form of the verb should be consistent with the subject in the form of singular and plural; notional concord means that the verb should be consistent with the singular and plural in the meaning of the subject; the principle of proximity means that the form of the verb should be consistent with the subject to whom the verb close. Many Chinese learners who have studied English for many years still make mistakes unintentionally in subject-verb concord because there is no such rule in Chinese. In Chinese, the morphological form of the verb of a sentence does not need to be changed according to the person and number of subjects and just the determiner changed. It is the notable difference in subject-verb concord between English and Chinese that leads Chinese learners to make mistakes in their writing. For example:

(13) ? My roommates has healthy lifestyle.

(14) ? 1000 yuan are not a large sum of money.

(15) ? Neither Tony nor his parents dislikes tofu.

The above examples from a learner's composition are the violation of the three principles in subject-verb concord. In example (13), the subject of the sentence is in the form of plurality, so, the verb should be "have" to be consistent with the subject in number. For example (14), 1000 yuan is singular in meaning even if it seems to be plural, therefore, "is" should be used here. In example (15), the form of the verb in the structure "neither…nor…" depends on the subject that is closer to it, hence it should be "dislike".

Apart from the subject-verb concord rule, there are also two issues in which negative transfer occurs frequently. The first one is in terms of tense for which Chinese are simpler than English. Take perfect tense

as an example, in Chinese, there is no need to make complicated morphological changes in the verb, nor is there any difference between the present perfect tense and past perfect tense in the form of the sentence, but to add an adverb with the meaning of perfect tense in front of the verb, which makes Chinese learners unable to distinguish the meaning of present and past perfect tense and make errors in the sentences they write down in English compositions. For example:

(16) ? The patient not eat for 3 days.

(17) ? He was there before I arrived.

These two sentences in the above example can be translated into Chinese without mistakes in meaning, but their correct counterparts should be "The patient has not eaten for 3 days." "He had been there before I arrived.", in which "has not eaten" and "had been there" are the symbols of present perfect tense and past perfect tense in English. However, the word form did not change anymore but some adverbs like "已经" show the perfect tense of the sentence in Chinese.

In terms of passive voice, active sentence is more common in English, while passive sentence is preferred in Chinese. In the transformation of active sentences and passive ones, a common step between English and Chinese is to change the position of the subject and object, but the difference is that the verb "do" needs to be changed into "be done" to indicate passive voice of the sentence in English, while there is no need to make any morphological changes to the verb in Chinese, but just add a word "被" to present passive voice. For example:

(18) ? The vase break by the cat.

The word "break" in example (18) needs to be changed into the word group "was broken" which is the symbol of the passive voice, but there is no difference in the morphological form of the verb "打碎" between active and passive voice in Chinese.

In summary, the negative transfer in syntax is obvious in English writing. Most learners have a good command of their mother tongue, so, they tend to write according to the rules of their mother tongue, which makes the English sentences they write is not authentic. Learners are supposed to conquer the negative transfer of their mother tongue and make more authentic sentences in English writing.

4. NEGATIVE TRANSFER OF MOTHER TONGUE IN TEXTUAL LEVEL

Text or discourse, a language unit higher than the syntactical level, is a unit of connected sentences. Text is the learner's final work after organizing the words and sentences together logically and semantically. The reason why text is so essential is that it is the primary medium of transmitting information. When writing, learners must pay attention to the structure of the text to accomplish a perfect text which is a proper combination of vocabularies, sentences, and paragraphs. Many Chinese learners just look up a dictionary to connect the words but the main idea of the passage is still unintelligible, since the Chinese

learner does not realize that it is the difference in the mode of thinking between English and Chinese that causes the undesirable effect of text. Based on the predecessor's studies and discussions, the writer makes the summary that the negative transfer of mother tongue occurs chiefly in two aspects: the writing mode and the coherence of the text.

4.1 Mode of the text

The fact that the different cultural and thinking modes determine that there are diverse modes of the text. The mode of text in English is linear as the mode of thinking is like a line. They say what they want to say, and then say what is the reason and other supporting ideas, that is coming straight to the point. However, Chinese always saves the most important point for the last, so, the mode of text in Chinese is spiral. Take the argumentative as an example, westerners tend to write the central argument at the beginning of the passage and then give some points to support the main idea, while Chinese learners are inclined to present the supporting ideas or analyze the phenomenon first and then draw a conclusion or state the main ideas of the passage.

The mode of composition written by Chinese learners is deeply influenced by the mode of "opening-development-transition-conclusion". For example, the main idea of a Chinese passage often appears in the middle of the last part rather than at the beginning, which is influenced by Chinese tradition and culture subtly. The compositions Chinese write always need to make some preparations to be unobtrusive. In addition, the Chinese have such a strong sense of history that they like to pay tribute to the ancients and use the classics in their writing, and quoting classics is a manifestation of their writing skills. These characteristics have determined the style of euphemism at the level of text. In contrast, the writing mode of English is related to Westerners' emphasis on logical thinking, rationality, and individuality to a certain extent. Moreover, western culture advocate expressing their thoughts with their own words. In English, the quotation of other's aphorisms is very little, because they are taught that the chapters full of famous sayings and epigrams lack individuality, imagination, and creativity, so they tend to speak with facts and avoid repeating what others have said. As a result, the writing style of an English article is more straightforward, showing the writer's views with a clear-cut standpoint, and not considering whether it is aggressive or not. English writing tends to express the writer's own opinions, which advocates questioning, exploration, development, and innovation. The straightforward beginning in English writing is quite different from the style of Chinese writing. Therefore, Chinese learners are required to express their arguments first and support their views with solid supporting points in English writing.

4.2 Cohesion of the Text

A text is composed of several paragraphs, which are

not simply arranged to form an article but need to be connected logically and methodically. The logical and methodical connection here is the coherence of a text, which is required in both English and Chinese but the devices of textual cohesion they applied are different. In 2017, the new high school English curriculum standards pointed out that students are supposed to use discourse cohesion devices and improve the coherence of their writing which shows that text cohesion is extremely essential in English writing.

Cohesion occurs when the interpretation of the meaning of a component in a text depends on the interpretation of another component (Halliday & Hasan, 1976). The cohesive device in English is classified into two categories by Halliday and Hasan (1976): grammatical cohesion and lexical cohesion. Grammatical cohesion includes four devices, they are reference, substitution, ellipsis, and conjunction; lexical cohesion includes reiteration and collocation.

As mentioned earlier, the syntactical characteristics in English and Chinese are different from each other, which leads to the difference that can be observed in employing cohesive devices to accomplish coherence in the text. To be specific, the parataxis in Chinese emphasizes logical connection in meaning but doesn't care much about the cohesion of the form of words and sentences, while the hypotaxis in English emphasizes the form and function of the sentences and the relationship between sentences needs to be marked, which also leads to the differences in cohesion between English and Chinese. Compared with English, there is no definite article in Chinese, and the frequency of using pronouns and determiners is also lower. Therefore, few formal cohesive devices in Chinese require semantic cohesion to a greater extent, while English requires strict formal cohesion. It is these difference that makes Chinese learners' English compositions lack coherence. In English writing, learners often misuse or forget to use relation words and conjunctions, which makes the meaning of the composition unclear and difficult to understand.

As is known to all, one of the most prominent differences between English and Chinese is that there are more long sentences in English and short ones in Chinese. In Chinese, sentences of a text can be added one after another like bamboo, while in English, the text is more like a tree, which has a main structure and other branches coming around it. Chinese learners always write bamboo sentences in English writing. The bamboo sentence is also called run on sentence, which is caused by two or more "independent clauses" linked together without any conjunctions. As we all know, the basic principle in making English sentences is there is only one predicate in a sentence and two sentences cannot be connected by a comma. There must be conjunctions between multiple independent sentences in a compound sentence, and in a subordinate compound, there can only be one predicate verb and there should be a complementizer ahead of the subordinate sentence. Chinese lays stress on parataxis, hence a meaningful long sentence composed of many short sentences is in line with grammar, but English lays stress on hypotaxis, which is not in line with the rules of Chinese text. For example:

(19) ? Developing a good studying habit is beneficial for learners, a good studying habit can help learners be more effective in learning, and can improve their schooling record, every learner should make an effort for it.

Paragraphs like example (19) contain many sentences but without conjunctions, references, or other cohesive devices ubiquitous in Chinese learners' composition because of the negative transfer of their mother tongue thinking. Hence, the paragraph needs to be revised more coherent, that is "Every learner should make effort to develop a good studying habit because it is beneficial for learners to be more effective in learning and improve their schooling record."

The negative transfer of mother tongue at the textual level hinders learners in the mode and cohesion of the English composition they write, which makes the structure of the composition disordered and the text incoherent.

5. CONCLUSION

Negative transfer of mother tongue keeps exerting an adverse influence on English writing, which leads to frequent mistakes in the learner's composition, so it is necessary to summarize and analyze the phenomenon of negative transfer in learner's English learning to minimize the adverse effect. The paper focuses on the negative transfer of mother tongue in English writing. By analyzing and summarizing the research conducted by processors, the paper draws on the following conclusion. Firstly, the negative transfer of mother tongue in English writing mainly occurs in three aspects, they are vocabulary, syntax, and text. The paper then analyzes and summarizes the concrete manifestation and gives some examples of errors in English writing on these manifestations.

Based on these manifestations of negative transfer in English writing, the reasons why negative transfer occurs can be summarized as follows: learners lack the awareness of the difference between Chinese and English, lack enough language input, lack a good learning habit of analyzing and summarizing the similarities and differences between the two different languages and teachers lack effective ways to teach English writing more effectively. Given these influencing factors, some strategies are suggested to avoid the negative transfer and enhance learners' writing ability. Learners are firstly supposed to be equipped with cross-cultural awareness by getting in touch with English culture and keeping a positive attitude towards cultural differences and negative transfer. Secondly, reading more books extensively and intensively is a practical way to broaden learners' horizons and gain knowledge and writing skills for

their writing. Besides, cultivating the habit of reviewing and analyzing the mistakes learners made in their writing is essential to avoid making the same mistakes again and write a composition without mistakes finally. At last, learners' writing ability would improve a lot if effective methods of teaching writing were to be applied, such as teaching writing in English thinking mode and encouraging learners to write extensively rather than just for examinations to keep their interest in English writing and put what they have learned into practice.

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