

Power Games and Wage Negotiations in China's New Energy Vehicle Industry

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Abstract

China has launched a comprehensive low-carbon transition strategy at the same time as the concept of just transition is receiving extensive international attention from the academic community. A just transition needs to embrace the interests of workers in the new energy industry as well as those of miners and others facing job losses in traditional industries. Accordingly, this article focuses on how programmers at a new energy vehicle company in Shanghai negotiate wages with their employers. Employers trying to curtail the salaries of programmers find fault with their biographies, qualifications, and experiences to undermine their confidence and create an incentive-driven competitive work environment. Programmers, in turn, try to improve their bargaining power by demonstrating their professional competence, job hopping, and informally investigating conditions at employing enterprises to take advantage of the competitive relationship between them. The interests of programmers in China's new energy vehicle industry are found to differ from those of Chinese state-owned enterprise workers and migrant workers. Although individual negotiations can improve the wage levels of specific programmers in the short run, they are not conducive to the emergence of labor solidarity. Moreover, they exacerbate income inequality among workers and fail to bring justice to workers in the new energy industry.

Keywords

China; job hopping; just transition; labor relations; new energy vehicle industry; wage negotiations

1. Introduction

On 22 September 2020, during the 75th session of the United Nations General Assembly, Chinese President Xi Jinping announced that China would aim to achieve a carbon peak before 2030 and carbon neutrality

before 2060. In 2021, the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-Range Goals for 2035 proposed "the construction of an ecological civilization system and the promotion of comprehensive low-carbon transition in economic and social development" ("14th Five-Year Plan," 2021). Consequently, China has embarked on a comprehensive low-carbon transition. However, global studies have shown that although a low-carbon transition is believed to create diverse economic opportunities and a range of benefits (Karlsson et al., 2020), the distribution of its benefits and costs is not equitable (Gambhir et al., 2018; Green & Gambhir, 2020). For example, fossil fuel workers and communities often bear the costs of low-carbon transition and face issues such as unemployment and community decline (Piggot et al., 2019). Therefore, numerous unions, social activists, labor lawyers, social scientists, and policy researchers worldwide have called for attention and resources to be focused on helping fossil fuel workers and communities adapt to clean energy in a way that is fair and just, also known as a just transition (Cha, 2017). A just transition thus means "greening" the economy in a way that is as fair and inclusive as possible for everyone concerned, creating decent jobs and leaving no one behind. According to Newell and Mulvaney (2013), a just transition includes two aspects: climate justice and energy justice. Doorey and Eisenberg (2022, p. 14) broke the constraints of the narrow concept of just transition:

There is no longer a shared, unified theory of justice that defines just transition. Instead, the contemporary "just transition movement" is inhabited by multiple, sometimes complementary, but sometimes conflicting justice movements and justice narratives.

Scholars use the term "rustbelt" to refer to regions where traditional industries are located and shut down during the process of industrial transformation, while "sunbelt" refers to regions where new high-profit industries are developing. For example, when Lee (2007) researched the labor movement of Chinese workers during the brunt of market reform and globalization, she found a "protest of desperation" among laid-off workers, who worked at Chinese state-owned enterprises in the rustbelt, such as Liaoning province, and a "protest against discrimination" towards migrant workers, who worked at private-owned enterprises in the sunbelt, such as Shenzhen city. Like industrial upgrading, a low-carbon transition also includes the rustbelt and sunbelt regions. In China, the rustbelt of the low-carbon transition includes coal-producing regions, such as Shanxi province and Hebei province, as well as carbon-intensive industrial areas. The sunbelt regions of low-carbon transition are places like Shanghai, Shenzhen, and other new energy and high-tech industry clusters. When coal production, iron and steel metallurgy, and other related industries in places like Shanxi and Hebei are required to reduce production or forcibly shut down under national energy-saving and emission-reduction policies, new energy vehicles combined with artificial intelligence (AI) technology have become key industries for development in China. At the same time, substantial supportive industrial policies, large investments from the capital market, and high-tech labor forces have poured into the new energy vehicle industry in the eastern coastal areas of China. It is evident that the low-carbon transition, while dismantling coal and mining industries in the western regions of China, has also fostered economically viable green industries in the eastern coastal areas.

In social practice, a low-carbon transition not only harms the interests of the most vulnerable groups but also damages the interests of different groups of workers in different ways. However, current research on the justice of transitions mainly focuses on fossil fuel workers and communities without addressing the injustices occurring in the sunbelt. Moreover, when scholars study transitional justice, they often pay more attention

to how unions, non-profit organizations, and local governments jointly promote the formulation of relevant policies for protection of the interests of fossil fuel workers during the transition than to workers' interests in the sunbelt. This article focuses on the practical actions of workers in the sunbelt to promote transitional justice. On the basis that the green economy should not only be environmentally friendly but also socially friendly and equitable, this means that "new jobs created in low-carbon sectors provide 'decent' jobs" (Newell & Mulvaney, 2013, p. 134). According to the agenda of the International Labor Organization (ILO), this includes a fair income and better prospects for personal development and social integration, as well as organization and participation in decisions that affect workers' lives.

In China, the low-carbon transition, like technological upgrading, is conducted within the framework of developmentalism (Lei, 2022). This means that the low-carbon transition revolves around the central goal of economic development. In this process, the state and capital collaborate to formulate low-carbon transition policies that facilitate economic growth, while trade unions, workers, and environmental NGOs are not regarded as main stakeholders and therefore have limited involvement in the policymaking process. Furthermore, due to the prioritization of speed over equality in the low-carbon transition, workers are merely treated as resources to be integrated into this grand modernity project, and the government remains silent on issues of work-related harm and inequality in the transition. In such circumstances, transitional justice is no longer the responsibility of policymakers but becomes a goal that workers need to pursue through their proactive actions. How do sunbelt workers perceive transitional justice during the low-carbon transition? What strategies do sunbelt employers use to minimize labor costs? How do software engineers negotiate their wages with new energy vehicle companies? This study examines the wage negotiations and labor-management game actions between programmers and employers in the process of market mobility. It analyzes the actions taken by these core workers in the sunbelt to address issues of unfairness in the low-carbon transition.

2. Methodology and the W Company Case

This study utilizes a case-study approach, with the primary case being the global headquarters of the W Company (pseudonym). It includes 30 interviews with software engineers and four interviews with human resources (HR) managers. The 30 IT engineers were all grassroots-level engineers, ranging from junior engineers with no working experience (Professional Level 1) to mid-level engineers (Professional Level 4), including 13 master's degree holders and 17 bachelor's degree holders; 23 were male and seven were female.

The W Company was selected as a case study because it is a typical high-end new energy automobile enterprise registered in Shanghai. It has a global market presence and has received strong support from the city government for its development. Currently, W Company has more than 9,500 highly educated employees worldwide and has established research and production institutions in 12 global locations, including Shanghai, Beijing, and London. A nationwide user service system has also been established in the Chinese market. In recent years, W has focused on the research and development of AI autonomous driving technology and has expanded into six core technologies, including intelligent gateways, advanced driver-assistance systems, smart cockpits, battery packs, and motor and electronic control systems. During this process, software engineers responsible for autonomous driving research and development, smart cockpit design, engine simulation research, sensors, and other related tasks have become the core labor

force. By examining this company, we can gain insights into the general conditions of labor relations in China's new energy vehicle industry.

From November 2021 to March 2022, the researcher conducted an 8-month fieldwork at W. During the fieldwork, the researcher participated in the recruitment process as an HR intern in the autonomous driving algorithm and systems department, helped with hiring programmers, including algorithm engineers, software development engineers, testing engineers, simulation development experts, and front-end and back-end engineers. Through this fieldwork, the study was able to explore the perspectives and actions of IT programmers in the new energy vehicle industry regarding their understanding of justice and their pursuit of it.

Rawls (1971, p. 10) argued, following Aristotle, that justice means refraining from gaining some advantage for oneself by seizing what belongs to another, or by denying a person that which is due to them, the repayment of a debt, the showing of proper respect, and so on. According to Amartya Sen's critique of Rawls (Sen, 2009), there are two approaches and theoretical orientations toward the concept of justice: transcendental institutionalism and realistic comparative theory. The former focuses on the rational design of institutions that promote justice, whereas the latter emphasizes how people can define what is justice and actively address injustice through their actions. In the context of just-transition issues, this article contends that it is important not only to consider the planning and implementation of institutional frameworks for low-carbon transitions but also to examine the perspective of specific labor groups on justice from a practical justice perspective. It is crucial to understand what these groups perceive as "justice" and the efforts they make to pursue justice in situations where institutional frameworks may be inadequate. Therefore, the following discussion explores the perception of justice held by software engineers in the new energy vehicle industry and the negotiations they engage in with corporate management in their pursuit of justice.

3. IT Programmers' Perception of Justice

3.1. *The Development of China's New Energy Vehicle Industry*

Since 2020, the new energy vehicle industry has been strongly promoted by the Chinese government because of its ability to reduce carbon emissions effectively. In the sunbelt region, the government implemented extremely cautious and highly efficient industrial policies to develop the new energy vehicle industry. Starting in 2013, both the central and local governments began providing consumption subsidies to new energy vehicle manufacturers. The Ministry of Finance announced on 16 April 2020 that new energy vehicles would be exempt from vehicle purchase tax, while local governments introduced corresponding supportive policies. For example, in Shanghai, purchasing a new energy vehicle allowed direct registration, whereas the auction price for license plates of fuel-powered vehicles reached \$1.37 thousand. The introduction of these industrial policies led to a rapid increase in capital investment in the industry. For 2021, 239 financing events were shown for China's new energy industry, with a total of \$49.84 billion ("In 2021, new energy vehicle sales," 2022). Simultaneously, the sales of energy vehicles reached \$3.521 million and, in 2022, it increased further to \$6.887 million ("New energy vehicle sales," 2023). W Corporation has accumulated financing of \$7.49 billion from 2015 to the present; however, its losses are substantial, considering a loss of \$60 million in the first quarter of 2023. On the one hand, it has been

widely recognized in Chinese society that new energy vehicles are the future trend. On the other hand, the competition in the technical routes for the production of new energy vehicles is fierce, with major companies making massive investments. Once W Corporation fails in this competition, the earlier investments cannot be recovered. Therefore, while new energy vehicle companies are facing a talent shortage and are diligently searching for talent that can help them succeed, they are also attempting to reduce labor cost expenditures.

3.2. Labor Relations in the New Energy Vehicle Industry in China

Researchers generally believe that low-carbon transitions can create new employment opportunities and increase workers' compensation in the sunbelt regions. Workers in new industries in sunbelt regions have experienced a significant increase in compensation (ILO, 2018). However, this has not been the case in China. Friedman (2022, p. 37) has pointed out that in Chinese megacities, under the institutional logic of "just-in-time urbanization," many workers are devalued as "temporary labor" for specific industries, without full welfare protection, to maximize the utilization of the population and minimize the economic and political cost of "warehousing people." Jia (2022) reports that, despite earning higher compensation than traditional industry migrant workers, most grassroots programmers in Shanghai are also treated as temporary laborers, living in precarious conditions. At the same time, many new energy vehicle companies are also attempting various methods to reduce labor costs, including by increasing the working hours of programmers. Management is not actively improving the wage levels and job grades of programmers but reducing the stock of basic-level programmers over the age of 35 through department downsizing, eliminating underperformers, and applying for the use of "flexible working hours" from the local "human resource and social security bureau" to increase the working hours of programmers. Due to the relaxation of restrictions on corporate behavior in the 2018 revision of the People's Republic of China Labor Law, the above practices by companies, although detrimental to the workers, are difficult to determine as illegal. It is well known that Chinese programmers previously initiated the 996.ICU movement on GitHub to protest about poor working conditions, but the effects of this online labor movement have been limited, and their working environment has not substantially improved.

While Chinese programmers have complained about their working conditions, the All-China Federation of Trade Unions (ACFTU) has not responded actively. This is because, overall, working-class organizations in China have accepted the goals of promoting ethnonational autonomy and increasing productive forces since the 1920s. The Trade Union Law of the People's Republic of China (2022) stipulates:

The trade union is a mass organization of the working class under the leadership of the CPC [Communist Party of China], and it is the bridge and link between the CPC and the masses of workers.

The CPC maintains sharp vigilance against syndicalism, which involves promoting union independence from party leadership, and economism, which refers to paying excessive attention to workers' economic concerns over larger economic and development goals (Andreas, 2019, p. 38). "The ACFTU does not see increasing the material and political standing of its membership as an end in itself, and in this sense it challenges commonly held notions of what constitutes a union" (Friedman, 2014, p. 30). The establishment of all unions requires approval from higher-level unions, whereas all independent unions are illegal. Furthermore, the Trade Union Law also specifies that trade unions are centered around economic development. In this context, Chinese

unions consider themselves and behave like subordinates of the CPC and government agencies, rather than representatives of workers' interests (Friedman & Lee, 2010, p. 522).

For the programmers at W Company, labor unions are virtually non-existent. When asked about whether W Company has a union, most respondents stated that they had never heard of it. One programmer even conducted a search within the company's system and found the listing of a union contact, but had never heard or seen this person within the company. This implies that, despite the numerous grievances among programmers, they do not consider organizing collective action through a labor union as a means to seek improvement.

3.3. The Sense of Justice and Action Orientation of Software Engineers

Software engineers have developed a sense of practical justice centered around their pursuit of income growth and career development, as well as the practical challenges of collective action, leading them to focus on "market self-interest." This concept of justice encompasses two aspects. First, from the perspective of distributive justice, software engineers believe they should receive compensation commensurate with their position in the market. They compare themselves with colleagues who work in similar technologies at similar companies to understand their position in the market and confirm their anticipated income. Second, from the perspective of freedom of development, software engineers believe they should have opportunities for career advancement that facilitate their professional growth. For example, one interviewee explained that:

Our performance was evaluated by the superior and promotions were based on that. I hoped my efforts and dedication were recognized, that my good work was acknowledged and that my superior could promote me and increase my salary. At the very least, there should be some fairness....But at A Company [the respondent's previous company], the leadership was really terrible. After this new superior was brought in by the higher-ups, he marginalized the original employees in the team, including me. Every time there was an opportunity for promotion, it would be given to the superior's "lackeys," not me. It doesn't matter how well I perform. (L26, 2021-11-05)

The W Company's software engineers' compensation includes a salary, stock options, and year-end bonuses. The salary primarily refers to pre-tax annual income, and the company generally provides a 13-month salary. Stock options serve as an important incentive upon hiring, with all employees being eligible to receive them. The year-end bonus varies according to the company's performance, team dynamics, and individual achievements. For software engineers, career development involves continual promotions. Promotion and salary increases comprise the core interests pursued by software engineers since they believe that fairness lies in obtaining opportunities for advancement and salary increases commensurate with their market position and job performance. However, through the interviews, we found that unfair practices occurred relating to the distribution of salaries and promotions. Under such circumstances, maximizing one's interests becomes an action goal for software engineers.

Silver (2003, p. 19) argues that we should pay attention not just to how the struggles of newly emerging working classes are successively made and strengthened as an unintended outcome of the development of historical capitalism but also to how the old working classes are unmade. As noted by Polanyi (1944), the most powerful challenges to employers come not from the declining profit rates of workers in traditional

industries but from technical workers in dominant industries who are proud of their occupations and seek privileged treatment. Faced with the inactive official labor union, programmers in the new energy industry have adopted a strategy reminiscent of China's manufacturing migrant workers voting with their feet. However, what sets them apart from their predecessors is that during this mobility, programmers maximize their technical advantages and engage in power struggles with employers over their basic salaries, equity stakes, and benefit packages, in pursuit of their own vision of justice.

Wright (2000, p. 962) classifies the negotiating power of the working class into associational power and structural power. Structural power results from workers' positions within the economic system. It is distinct from associational power, which arises from the formation of collective worker organizations:

The power of workers as individuals resulting directly from tight labor markets or from the strategic location of a particular group of workers within a key industrial sector would constitute instances of structural power. (Wright, 2000, p. 962)

Importantly, the structural power of workers can enhance both their collective associational power and individual bargaining power in the labor market. Under China's existing political system, programmers cannot establish independent unions with the support from official labor unions, or gain associational power to improve their conditions. However, the need for software engineers in new energy vehicle enterprises, as well as the programming technology possessed by software engineers, gives many people some structural power. In this context, many individual workers are leveraging their structural power and resorting to individualized actions, engaging in direct power games with employers during job transitions. In the case of W Company, software engineers engage in power games with employers through market mobility, negotiating their base salaries, equity shares, and benefits to strive for what they perceive as justice. How do these wage negotiations take place? What are the interests and demands of the two sides? How do they engage in power games during wage negotiations to maximize their interests? This study addresses these questions in the following analysis.

4. The Employer's Bargaining Goals and Strategies

Even highly skilled IT software engineers are today members of a precarious workforce. In China, companies build a public reservoir of labor by frequently conducting layoffs. These companies prioritize young and strong workers, while constantly eliminating older and less healthy employees. Scholars refer to the strategy of selecting younger and more productive migrant workers to accomplish more production tasks as "pinching at the top" (Shi et al., 2022, p. 98). Similarly, companies prefer to hire young programmers with higher productivity but aim to keep labor costs as low as possible, achieving the goal of low-cost pinching. This creates obstacles to promotion and salary increases and undermines the eager expectations of software engineers for justice.

When dealing with desirable candidates, the W Company's HR managers often employ three strategies to lower their expectations, bargaining power, and wages.

First, they find fault with the software engineers' biographies to undermine their confidence in the labor market. Employers mainly criticize experienced software engineers for their age, lack of innovation and

learning abilities, and inability to handle high-intensity work. Employers deliberately emphasize age anxiety because hiring a senior software engineer is much more expensive than hiring a junior engineer. One interviewee recalled his interview process:

From the initial phone call and subsequent two rounds of technical interviews, I felt that the communication with HR went smoothly. However, during the discussion of the salary package, when I proposed an additional monthly salary amount of \$400, HR noted that I was on the older side and suggested that my creativity might not be as strong as younger people's. They stated that the current salary offer was already the maximum, which made me feel very uncomfortable. (L15, 2022-03-14)

On the other hand, employers criticize young and productive software engineers for their lack of experience. For example, one interviewee said:

There are several salary levels for fresh graduates: "cabbage price," "spinach price," and "guru price." I got the "cabbage price," which made me unhappy. I tried to negotiate, but the HR manager gave me no opportunity. She told me that I could learn from the gurus, and then I would receive a higher salary. (L18, 2022-04-01)

Age discrimination is widespread in the Chinese labor market, and employers use the resulting age anxiety to lower employees' wages. Regardless of a candidate's age, their resumés are subjected to criticism and scrutiny by employers.

Second, by concealing core information, the company shifts the focus to the software engineers. Although the W Company is listed on the stock market, its stock price is low, and its potential for growth remains uncertain. Given this situation, the company does not adjust the salaries of all employees universally based on inflation levels, changes in national policies, or business performance. Moreover, unlike other companies, it does not provide material benefits, such as holiday gifts. Furthermore, W Company lacks a clear salary payment standard, resulting in varying salaries for software engineers in the same project team. For example, within the same team, while performing similar job tasks, the monthly salary for one interviewee is \$1600, whereas another's monthly salary is \$2000. In such a scenario, the management regards salary as the confidential red line of the company, a principle that enables the employer to have a greater bargaining advantage. When software engineers are dissatisfied with the salary package offered by the company, HR managers deliberately shift their focus from existing salary arrangements to career development prospects. One interviewee said:

My request was to increase the monthly salary by \$550 based on the existing salary package. However, HR told me that as a young professional, I should consider not only the current salary but also the company's platform advantages and the prospects of the autonomous driving industry. They said I should take a long-term perspective considering the growth opportunities of the position and the platform. Ultimately, they only raised my salary by \$274. (L16, 2022-03-25)

It is thus clear that to divert attention from the issue of unequal pay for equal work and lower the expectations of soft engineers regarding salary discrepancies, the company deliberately emphasizes the rank that might be achieved to shift the candidate's perspective and focus.

Third, by fabricating false information, HR suppresses software engineers' bargaining confidence. Software engineers often spend one day to 1.5 weeks negotiating with the HR management over their "income and welfare package" after their job interviews. During the negotiation period for job hopping, the HR department of the company constantly provided misleading information based on the programmers' actual circumstances and communication context. Disturbing information is released to confuse the software engineers, reducing their confidence in bargaining and making them willing to compromise. One HR manager said:

There was a candidate who seemed indecisive and not very proactive during our salary negotiation, so I purposely kept him waiting for two days without responding. When he finally approached me, I mentioned that the position was quite competitive and that we had many candidates vying for it. I also emphasized that due to our current work phase, we were willing to lower the requirements temporarily but that they would soon be raised again. Upon hearing this, the candidate became anxious and decided to join our company. (M2, 2021-10-14)

When faced with software engineers who lack salary negotiation experience or have difficulty understanding internal information within the company, HR can utilize tactics such as delayed responses and decreased engagement to create a sense of urgency and ultimately influence candidates' decision-making processes.

In reality, during the job-hopping process, software engineers and employers often experience three stages of salary negotiation: (a) mutual probing, in which employers tend to downplay the candidate's resumé; (b) getting to know each other, when employers deliberately conceal important information; and (c) reaching a compromise, where employers interfere with the candidate's decisions. Due to the reasons noted above, labor unions are absent throughout this process. Unless the programmers in the new energy vehicle industry initiate impactful collective actions, the official labor union will not respond. Consequently, salary negotiations and benefits coordination are individual matters for software engineers. However, this does not mean that programmers are passive or unresponsive. On the contrary, many software engineers find ways to leverage their strengths in negotiations and power struggles with their employers. The following section will discuss this issue.

5. Professional Advantages and the Actions of Software Engineers

In the low-carbon transition driven by economic development, software engineers at the W Company have found themselves in a political economy in which ensuring sufficient institutional justice is difficult. Whether they can fully leverage the opportunities presented by the low-carbon transition to achieve practical justice depends largely on their own strength and actions. Workers' structural power including marketplace bargaining power and workplace bargaining power. Skills and low unemployment rates are important sources for individual workers to gain marketplace bargaining power (Silver, 2003, p. 13). Fortunately, in recent years, financial capital and the Chinese government have made significant investments in the new energy vehicle industry. This industry needs more programmers, and companies are vigorously competing for capable programmers to win the technology and market race, which has increased the structural power of individual programmers. Many programmers, owing to their technical skills or work experiences, can negotiate for more benefits through market bargaining. We found that, faced with capital's intention to pay low wages and a persistently harsh working environment, software engineers employ three strategies to counterattack and demand higher wages and benefits.

First, to bypass HR's resumé critique and highlight their technical advantages, software engineers tend to submit their resumé through internal referrals from acquaintances. When a candidate is recommended and vouched for by an employee at the W Company, HR will not scrutinize the candidate's resumé during the initial communication. Consequently, software engineers can engage directly in technical negotiations, and their bargaining advantage with the employer is reversed. Most Chinese new energy vehicle companies are in their budding stage and are fiercely competing in autonomous driving technology and AI chip development. The ability to attract talent is a crucial factor in determining a company's success. Consequently, the W Company is willing to invest a substantial amount of money in recruiting scarce talents. For example, it values software engineers with a background in big data analysis and programming skills, and it is willing to offer high salaries to software engineers proficient in Java, Python, C++, and Go. Using their understanding of the company's talent needs, software engineers rely on their technical expertise and work experience to negotiate salaries and demand higher material benefits. They demonstrate their technical advantages by showcasing their programming languages and technical frameworks. They emphasize their past work achievements, project management experience, and year-end bonuses to demonstrate their work capabilities. They also highlight their comprehensive qualities by showcasing awards such as "Outstanding Employee of the Year" or "Development Star." In addition, programmers with higher professional ranks emphasize their influence in the industry and claim that they can attract or lead more talented individuals to join the company. The demonstration of their technical capabilities pushes the salary negotiations between labor and capital to the next stage, where both parties exchange information and explore further.

The second strategy involves software engineers' efforts to acquire confidential information from multiple sources to enhance their bargaining power with the employer. When negotiating compensation with candidates, the W Company often reveals only a rough offer plan without discussing the salary levels of other employees at the same level or the actual recruitment situation of the team. However, this information is crucial for job seekers because once they have access to it, they can gain the upper hand in salary negotiations. Consequently, although senior software engineers have not attempted to form labor unions, they have formed a network of acquaintances. One interviewee found a job at the company through the introduction of friends in his network. He said:

I know many friends who are programmers. We often exchange information about various companies, including their benefits, reputation, and R&D atmosphere. I came to the W Company through a friend's recommendation. That's how our network works, with active information sharing and mutual assistance! (L19, 2022-04-06)

In addition, IT engineers also build salary discussion groups on platforms such as Maimai, LinkedIn, Zhihu, and Offerhero, where they share internal information about companies, including their development status, work style, salary structure, and team capabilities. One interviewee said:

I didn't know that the W Company offered "signing bonuses" until I saw someone mention it on Maimai. That's when I realized I could discuss this with HR. Besides the "signing bonus," I also got information about the company's salary structure, benefits, and so on. (L20, 2021-12-27)

Female programmers are equally engaged in various efforts to gather information through different channels, and they may even put in more effort than their male counterparts. For example, one interviewee sought

help from an AI technology training institution, purchased “one-on-one” job-hopping guidance services, and participated in an “interview training class.” She said:

My target position was quite high. I aimed to be the responsible person for a project module. I felt like I might not have the time to thoroughly understand W, so I reached out to a training institution. If the negotiation was successful, I would pay the institution 30% of my first month’s salary. If it did not work out, the institution only charged \$686 as a service fee. The mentor was indeed very professional. The mentor first organized my previous projects and worked based on the target company and position, then refined and detailed the projects completed for the target position in the past two years, extracted the required abilities and skills, and then matched them with my existing abilities. After that, we prepared my resumé, practiced for interviews, and formulated salary demands. We spent over a month preparing, anticipating all their questions, and, in the end, I secured the position. (L6, 2021-09-03)

In online discussion groups, members ask questions like: “Is a \$40,000 front-end position at Tencent worth it?” “Which is better, Alibaba’s test development or Shopee’s software development?” Female programmers will inquire whether the company has gender discrimination policies and whether policies support the professional development of women; junior software engineers form and join various chat groups to share information about salary levels, the signing of letters of intent, and whether offers have been extended in campus recruitment situations. When negotiating salaries with the W Company’s HR department, many software engineers present salary levels for their positions in different companies and use this information to request a salary structure that better aligns with their interests.

The third strategy involves exploiting the competition between new energy vehicle companies to gain room for salary increases. Until both labor and management reach an agreement on the salary plan, they will use their existing advantages and exploit each other’s psychological weaknesses to disrupt the other party’s judgment and force them to compromise first. Software engineers often apply to multiple companies simultaneously, aiming to secure multiple job offers and the leverage to negotiate with the companies. They utilize the competition among the companies to push their favorite company’s HR managers to make concessions. For example, one interviewee recounted:

My usual method is to apply to multiple companies, gather as many offers as possible, and then compare them. Once I pass the interviews, I usually verbally accept the company’s offer and wait for them to provide a specific salary figure. I then compare the offers and consider factors such as the company’s business direction and prospects to choose the one I prefer. If the salary offered by that company is not the highest, I will show the other offer packages I have received to the HR representative. This is to showcase my qualifications and negotiate for a higher salary. (L10, 2022-02-24)

When faced with such candidates, HR managers at W Company often compromise. Besides the salary package, company employees enjoy various benefits, such as phone subsidies, meal allowances, company shuttles, signing bonuses, and holiday gift packages, but not all employees have equal access to them. Software engineers may request additional benefits from the company, citing reasons such as the expiration of stock options due to resignation or increased living costs due to a change in work location. Employers often agree with software engineers’ requests to demonstrate their generosity and enhance their reputation in the industry.

With the development of digital information technology, the labor market in the new energy vehicle industry today has a large number of ordinary workers who possess programming skills and are relatively substitutable. However, experienced and creative high-level software engineers are rare. Importantly, the HR manager finds it difficult to accurately assess the technical level and development potential of software engineers. In rapidly advancing industries, traditional skill certification systems have little effect, whereas soft indicators such as leadership experience and industry reputation are more valuable references. Given this, software engineers employ strategies such as seeking internal referrals, highlighting their technical expertise, obtaining company information, and creating market scarcity to negotiate with capital, pursuing their perceived justice through practical actions.

Certainly, whether individual programmers can succeed in negotiations depends to a large extent on their knowledge of the industry, social experience, and negotiation skills. People who lack confidence, have poor communication skills and limited work experience, and are information-poor may find it challenging to succeed in negotiations. This often applies to programmers over the age of 35, fresh graduates, and women. However, these programmers are aware of their weaknesses and make efforts to improve their skills to achieve success in future negotiations. Their pursuit of justice does not end, they continue to strive for it. With accumulated experience, they become clearer about their interests and how to attain them. Correspondingly, companies are developing new strategies to deal with challenges from programmers. For instance, in the past, programmers in China's new energy vehicle companies were formal employees, but in recent years, companies have started employing informal workers such as contract programmers, outsourced programmers, and interns. In this sense, the gathering of individual negotiations is important to understanding the activism of Chinese programmers in their pursuit of justice transition.

6. Discussion and Conclusion

In the context of China's low-carbon transition, there are two regions: the rustbelt and the sunbelt. The rustbelt for China's low-carbon transition includes western provinces such as Shanxi and Shaanxi. The national government has implemented strict environmental policies to limit industries related to carbon fossil energy production in these areas. The sunbelt, on the other hand, encompasses eastern regions such as Shanghai and Shenzhen. Industries such as new energy vehicles and lithium batteries have experienced rapid development, supported by local government. In the study of transition justice, it is important to focus not only on the challenges faced by traditional carbon fossil energy communities in the rustbelt but also on how core labor groups in the sunbelt pursue their interests and share the benefits of this transition. Therefore, this article discusses the sense of justice among core labor groups in China's low-carbon transition, specifically software engineers in the new energy vehicle industry and their specific activism. Based on this, we aimed to expand the academic research on the issue of just transition.

The working conditions of software engineers in Chinese new energy vehicle companies differ from their counterparts in the global north. They receive much lower salaries, work long hours, and lack fair promotion opportunities. In contrast to programmers in Silicon Valley, where software engineers can earn annual salaries exceeding \$400,000, their Chinese counterparts earn less than \$45,000 annually—all while living in S City where housing prices reach as high as \$14,000 per square meter. Furthermore, Chinese programmers humorously refer to their work schedule as "996," which means working from 9 A.M. to 9 P.M., six days a week. Chinese programmers have voiced grievances and discontent about these working conditions and

initiated the 996.ICU movement on GitHub to protest it. However, in China, collective action can potentially violate the law, and this online movement has not transformed into an offline social movement to change the actual conditions of programmers. Moreover, unions do not represent programmers in collective negotiations with employers to demand promotions and pay raises because the role of Chinese unions is to maintain harmonious labor relations and safeguard workers' basic legal rights, rather than make additional demands on employers.

In terms of this, software engineers have formed their own sense of justice. First, they seek to obtain income that matches their market position, and second, they demand opportunities for good career development. Accordingly, promotions and pay raises have become their core interests. To achieve these, they engage in wage negotiations and power struggles with employers during job hopping in the labor market. Employers use tactics such as criticizing resumes and hiding unfavorable information to lower labor contract terms and working conditions. On the other hand, programmers use strategies such as highlighting their technical advantages, obtaining internal company information, and leveraging inter-company competition to request higher wages and more benefits. Female programmers are equally active in participating in this game. Therefore, individual wage negotiations among Chinese programmers cannot be regarded as a pursuit of money by technical elites but rather as the activism of a new labor group that refuses exploitation and seeks justice. However, individual wage negotiations should not replace collective action organized by unions. In individual negotiations, programmers with less experience or those over age 35 often struggle to achieve success, and competition and division among programmers also exist. Nonetheless, this action still, to some extent, improves the situation of the core labor group and encourages employers to take programmers' concerns seriously.

In conclusion, workers in the sunbelt of China's low-carbon transition are more likely to benefit from the development of the new energy vehicle industry and the gains of the transition. However, individual negotiations alone are insufficient for achieving the goal of just transition in China. The collective action organized by unions cannot be totally replaced by the gathering of individual wage negotiations. The social impact of individual wage negotiations is highly limited, and they often fail to become influential public issues that draw widespread attention across various sectors and drive changes in national policies. Furthermore, while these individual actions have, to some extent, improved the situation of the core labor group and encouraged employers to take programmers' concerns seriously, it is difficult for older or less experienced programmers to succeed, and competition and division among programmers are also common. Therefore, the advancement and achievement of just transition require the joint participation and action of a coalition that includes unions, NGOs, NPOs, labor lawyers, policymakers, and so on.

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Conflict of Interests

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