

A Study on the Phenomenon of "digital labour" Based on the Media Exposure Behaviour of Older People --WeChat app "Xiao Nian Gao +" as an example

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Abstract—Against the backdrop of both digital media and an ageing population, "age-friendly transformation" has facilitated older people's participation in media practices and created a new opportunity for their digital integration in modern society. However, as "new immigrants" in the digital age, middle-aged and elderly people lack awareness and reflection of new forms of labour control, and their browsing and production of short videos are essentially hidden digital labour. This paper focuses on the elderly group, and combines a case study of the WeChat app "Xiao Nian Gao +" to analyse the labouring behaviour of users in three dimensions: production, consumption and emotion, and finds that the elderly group, who have been immersed in the video environment for a long time, face the alienation brought about by media and technology, such as the domination and domestication of their bodies, the alienation of intergenerational relationships between parents and children, and even the consequences of privacy leakage. consequences, and even the risk of privacy disclosure.

Keywords— Older people; digital labour; short video; small yearbook +.

I. INTRODUCTION

According to data from the National Bureau of Statistics, by the end of 2022, China's population aged 60 and above will reach 280 million, accounting for 19.8% of the country's total population, while the population aged 65 and above will reach 210 million, accounting for 14.9% of the country's total population. This is an irreversible trend. The era of rapid change and development in media technology has placed everyone in a new digital environment. "The electronic media has penetrated into all aspects of society and has not only influenced the shape of the organisations in society, but has also become the basis on which the entire social system is built". Middle-aged and older people, a marginalised group in terms of Internet access, are also being pushed to learn more about new media in order to better adapt to the digital information society. According to a report, by December 2022, the proportion of Internet users aged 50 and above will increase to 30.8% , and the scale of Internet access among the elderly continues to expand steadily. This shows that the middle and old age groups are gradually moving away from the traditional term of "digital refugees", especially the intergenerational interaction between the younger generation, represented by the "digital natives", and the older generation on the understanding, adoption and knowledge dissemination

and use of new media. In particular, the intergenerational interaction between younger generations such as the 'digital natives' and older generations on the understanding, adoption and dissemination of knowledge and use of new media, i.e. the 'digital feed-back' mechanism, has to a large extent helped the silver-haired population to find their place in the connected life of digital media. However, the gradual embedding of digital technologies in older people's lives through the Internet and mobile smart devices may lead to a shift in the manifestation of the digital divide in older people from a 'digital inclusion' dilemma to a 'digital labour' problem. Older people are no longer mere "receivers" or "producers" of the new media platforms they use , but there may be a very hidden "labour" relationship between the two. The entertainment and leisure activities undertaken by the elderly through new media technologies become a form of 'digital labour' that drives the development of Internet companies.

II. THE INTRODUCTION OF THE TOPIC OF "DIGITAL LABOUR" FOR OLDER PEOPLE

With the spread of the Internet, the media environment has undergone a series of changes, with the issue of labour shifting from an 'audience commodity' to a 'digital labour'. In the traditional media era, scholars such as Smyth saw the audience itself as a commodity, and the 'audience power', or attention, produced by audiences watching television programmes became a bargaining chip for media companies and advertisers to exchange for value. In the Internet era, the production practices of audience labour have undergone a fundamental shift, giving rise to a new form of labour - digital labour.

Although there is no unified understanding of the scope of digital labour, there is a consensus on the general classification. Digital labour can be divided into 'paid labour', which is the physical and mental work performed by professionals working in the internet industry using digital technology and internet platforms, and 'unpaid labour', which is the activity of internet users browsing, accessing various The latter is the activity of internet users who browse, access various cultural media or consume audio-visual works. On the one hand, in the process of using the Internet platform, the audience satisfies their needs for social communication, information acquisition and content sharing, gaining the value of using digital goods, but on the other hand, the users

sacrifice their usage data to the development of the platform, becoming digital labourers who create data resources.

In the digital media era, the proliferation of mobile smart devices has re-engaged many older people who have dropped out of the labour market into unpaid or almost unpaid work in the name of leisure and entertainment, creating older digital workers in virtual space. On the one hand, in previous studies of specific groups of "digital labourers", the focus was mainly on young people who have a wider range of media usage, and not enough attention has been paid to the "labourization" of older people who are less familiar with digital technology and lack digital media literacy but have more leisure time. The "labourization" of older people, who are less familiar with digital technology and less digitally literate but have more leisure time, has received less attention. On the other hand, there are two different perspectives on the value orientation of 'digital labour': 'deprivation' and 'empowerment'. In the domestic context, there seems to be an inertia in thinking that labourers who participate in the production of digital platforms are 'exploited'. In the new technological context, in the face of diverse types of work and a large and highly heterogeneous group of digital workers, is "exploitation" necessarily valid? This is one of the main points of debate among foreign scholars. Some domestic scholars have suggested that there is a phenomenon of generalisation and arbitrariness in the analysis of "exploitation mechanisms" in the field of digital labour. "This is due to the conflation of the two key concepts of work and labour. Specifically, it seems that the only 'mechanisms of exploitation' that really fit fully into the current academic study of digital labour are those involved in labour rather than workers, i.e. free labour. This includes the so-called autonomist (or post-workerist) Marxism, which has been criticised mainly through the concept of 'immaterial labour' and the digital labour framework, which affirms the exploitation of the unpaid activities of users generating content on social networking sites.

Therefore, this paper focuses on the "digital labour of the elderly", which produces unpaid or almost unpaid labour, based on the following two points: firstly, there are few research results on the "labourization" of the elderly, and there is a certain research gap; secondly, the digital labour of the elderly is more focused on "unpaid labour", which belongs to the category of "free labour", and is more in line with the scope of "exploitation" in the current digital labour research. "This is more in line with the scope of the current research on digital labour in terms of "exploitation", and provides a certain theoretical basis for the development of post-text research. This paper proposes the following two concrete proposals. Based on this, this paper poses two specific research questions: firstly, how do older people participate in the production of unpaid or almost unpaid labour in the use of new media, i.e. how do older people participate in digital labour; secondly, what are the negative effects of older people's participation in "unpaid labour", i.e. what are the negative effects of their participation in the process of "labourisation"? "What are the negative effects of the 'labourisation' process.

The above two questions focus on the effects, especially the negative effects, of the production of 'unpaid labour' in the use of new media, and explore the user practices of older people in their participation in digital media technologies, starting from the manifestations of their use of new media to engage in 'digital labour'. What is the nature of this.

III. APPLICATION OF "XIAO NIAN GAO +" WECHAT MINI-PROGRAM

As a commonly used social networking software, as of September 2019, the monthly active users of the WeChat platform have basically completed universal penetration if we deduct the population under 12 years old and over 70 years old. Among applications whose main functions are information acquisition, leisure and entertainment, and social networking, the volume of young users has tended to be saturated, while the overall proportion of middle-aged and elderly users is still low and there is ample room for growth.

The app was launched in 2014, but was not well received; in January 2017, the WeChat applet function was launched, followed by the applet in May. "In 2019, according to the index report released by Aladdin, a vertical application developed for the elderly - "Xiao Nian Gao +" WeChat applet has long been among the top 5 of similar products on the entire network. The overall user base is over 500 million, and almost all of the daily active users are senior citizens. Compared to mobile APPs, the applet itself is a "light application" that does not need to be installed, is within reach, is ready to go and does not need to be uninstalled. While simplifying the use process for older users, meets the needs of users in terms of tools, content and social interaction. Based on WeChat's penetration of the senior community and its strong social network, the app doubled its active user base within a month. As a short video product for the silver-haired population that focuses on making audio video collections, it is undoubtedly an example of how to seize the WeChat social fission dividend and rise to prominence.

The development of mobile internet has pushed various media products to the audience, and short videos have become the most frequently accessed media consumer product. With the popularity of users' behavior of watching, recording and sharing their lives through short videos, its user scale and social influence are increasingly expanding. According to the report, as of December 2022, the scale of short video users exceeded 1 billion for the first time, with a 94.8% user usage rate. At present, the growth trend of young people's access to short videos has become slightly weak, while older people's access to the Internet is later and the scope of use is more limited, their user scale in the field of short videos still has huge room for growth, expanding the media practice of this group can further help break through the short video field content homogeneity, saturated space for realisation of the problem.

Short videos or live broadcasts have unique advantages over graphics, especially for the majority of older people with varying levels of literacy and different eye problems, as the former are more easily accepted in terms of information reception and content presentation. WeChat, which started

with graphic content, launched a video number in 2020, followed by a number of middle-aged and elderly cultural and entertainment accounts represented by "Mao Na Da Shu", "Fashion Grandma Group" and "Jun Hai Calligraphy". The number of viewers jumped to tens of millions, which shows that the older age group is receptive to video streaming content.

On the one hand, the "Xiao Nian Gao +" app targets the gap in the short video field for the elderly group and achieves differentiation based on the needs of the segmented group; on the other hand, it uses the app to divert traffic from the WeChat platform, which has achieved full penetration of the elderly group, to achieve rapid user growth. Compared to applications such as Jieyin and Raptor, which are mainly "universal", vertical products targeting the elderly have a more detailed and perfect insight into user needs, catering to the needs and preferences of the middle-aged and elderly user groups in terms of tool use, emotional satisfaction and social interaction, and then combining user data to explore more business models other than user fees. In turn, the company will explore more business models other than user fees, and harvest traffic to bring in more profits.

3.1 Simplified function settings

The overall page design of "Xiao Nian Gao+" upholds the principle and requirement of "age-appropriate transformation", and the UI interface not only enlarges the text and icons, but also uses "white background + high saturation brightening colours" for visual guidance. "In addition to enlarging the text and icons, the UI interface is visually guided by a white background and high-saturated bright colours, and a simple interface layout and operation flow is designed to suit the usage habits of the elderly.

The core functions of the "Xiao Nian Gao +" app are focused on watching videos and making videos. In the viewing process, the information flow is switched by "swiping up" to jump directly to the next video, which ensures the immersion of the user compared to the text-based comment section. In terms of video production, older users can quickly create their own short videos by uploading photos and following simple instructions. "Make a music video", "Video clip" and "Make a graphic". The use of templates lowers the technical threshold for older people to try out new media and increases their sense of achievement through the satisfaction of being able to use them quickly. Furthermore, the ability to serve the different thematic photobook production needs of different older people caters to the diverse creative needs of older users and expands the pool of quality UGC content while enhancing the completion of the work, which also further enhances user experience and stickiness. After selecting a production, the applet will guide users to follow the public number for relevant information such as feedback on the progress of the video production, and the "Gao Fan's Masterpiece Exchange Group" and other community portals. The former requires constant authorisation from users, making it more difficult for older people to use, while the latter is only open to content numbers providing offline public services such as government and education. The latter is only available

to content numbers that provide offline public services such as government and education, which is a relatively high barrier to entry. Therefore, in the face of the restrictions of this subscription rule, "Xiao Nian Gao +" adopts the combination of small program subscription messages and service number push messages, and the action of subscribing to the service number is preceded by the necessary process of viewing the production of videos, and the positive arrangement of the entrance accelerates the completion of the closed-loop processing of information pushing.

In terms of the pushing mechanism, "Xiao Nian Gao +" follows the principle of decentralization, and the logical weighting of the algorithm not only takes into account explicit data such as views and likes, but also the length of viewing, completion rate and quality of content creation will be included in the formulation of the measurement criteria, further motivating and empowering quality UGC by increasing the visibility of more works and creators.

3.2 Positioning nostalgic classics

The "use it and leave it" nature of the app reflects its user retention challenges, and the retention weapon of "Xiao Nian Gao+" is the UGC-guided creation that targets users' emotional needs and the user community built up based on UGC content.

In terms of content, since the launch of the "1998 Flood Memorial" video in 2015, which was produced to coincide with the promotion of the Army Day, "Xiao Nian Gao +" has become a "hit". Since the launch of a "1998 Flood Memorial" video in 2015 to promote the Army Day, it has been working on "nostalgic classics" and has been releasing content with memories of the times and group affiliation, such as the Zhiqing theme. Collective memory includes not only the past shared by members of a community, but also the common memory or commemoration of the past. By evoking the collective memory of the older community, the content will stimulate the emotional resonance of older users with similar backgrounds or experiences, and increase the frequency of user interaction. In terms of format, as a product of the era in which the middle-aged and elderly live, the photo album is not only a symbol of the era's memory, but also a symbol of the group's collective identity. Users can satisfy their need for memory preservation and transmission by making photo albums, and use them as a channel or outlet for the realisation of self-worth and self-expression, thus achieving the dual satisfaction of personal emotional support and expression.

In addition to the content strategy focusing on emotional expression, "Xiao Nian Gao +" tries to build a spontaneous operation of the content community with gamification thinking, by allowing elderly users to achieve a certain goal together, supplemented by timely and positive feedback, to build a space for the interconnection of the elderly group, helping to achieve a sense of sharing, satisfaction and meaning for the silver-haired people who have accomplished their goals. This will help to achieve a sense of sharing, satisfaction and meaning for the elderly. For example, through preliminary user research, we understand the learning needs of the elderly in the process of media exposure, and regularly share free

creative courses, carry out thematic creative activities and open the New Year's Cake Creative Academy to meet the needs of users while effectively enhancing the user stickiness of the platform.

At the same time, the main page of "Xiao Nian Gao +" has set up general recommendation modules such as attention, blessing, health and wellness, square dance and magic tricks, combining information such as users' identity, viewing preferences and interactive feedback to establish a comprehensive and diversified content recommendation mechanism. The "Follow" list increases the chance of continuous viewing by the creators being followed, further strengthening the connection between the two; the "Blessing" module is linked to the "Blessing Circle" app, which is a rich product matrix that expands the information access channel to understand the needs of the elderly group. The "Health and Wellness" and "Square Dance" programmes build a community based on the viewing preferences of the elderly, enhancing the ability to build a sense of belonging in the community.

3.3 Introduction of sharing mechanism

Older generations are more likely to maintain acquaintances than younger generations to expand into new social networks. As a result, online socialisation among older people is mainly among family, friends and colleagues. The 'absence of social interaction' achieved through media use enhances the bonding of older people with their peer group and intergenerational intimacy. This enhanced subjective well-being provides a sense of 'satisfaction' and 'fulfilment' in the spiritual world of older people.¹ Therefore, the social needs of older people to engage in online practices also need to be addressed.

Another core reason why the "Xiao Nian Gao +" app has been able to capture a large number of older users is its respect and grasp of the social needs of its target users. The built-in "Share" function is a universal interface that meets the user's need to establish daily contact with others through relevant settings, and every part of the platform can be easily shared to more external platforms such as the circle of friends and WeChat message lists, and the social rewards of likes, comments and retweets can be harvested to meet the emotional value of the elderly group's participation in online interaction. Emotional value.

In this process, on the one hand, by aggregating and sharing content of interest to older users, the "XiaoNianGao+" app reconstructs the comfort zone of the silver-haired population online, forming a new "circle" culture and further strengthening the social structure of acquaintances with peer relationships as the core. On the other hand, the parental generation can communicate their values to their children through video, which is more easily accepted by children who have developed the habit of watching short videos than text-

¹ Shi Jinyang, Chen Gang. Digital Survival of the Elderly in the Perspective of Social Media: Issues and Reflections[J]. Journal of Yangzhou University (Humanities and Social Sciences Edition), 2019, 23(06): 119-128.

based teaching, building a bridge of inter-generational communication.

IV. OLDER USERS WHO HAVE BECOME "DIGITAL LABOURERS"

4.1 Labour for production

According to existing research, digital labour can be broadly classified into four types: digital labour in the traditional employment economy, digital labour of skilled workers in digital capital companies, digital labour in the odd-labour economy on internet platforms and non-employment forms of production-consumption digital labour. Older people are more likely to be involved in the "production and consumption type of odd jobs", and they produce a lot of UGC content for free by participating in the creation of themes and courses while watching the videos of "Xiaonianjiu+". On the other hand, the production of content attracts people with the same interests to the platform, and the gathering of traffic attracts more commercial companies to advertise, so that users participate in the economic production process in the form of labour, and thus unconsciously fall into the production cycle of capital capturing labour value in the digital age.

4.2 Labour for consumption

Users spend a lot of time every day browsing short video content on various social media platforms, and even if they do not actively participate in the production of content, they still passively "produce" a lot of data information, the collection of personal age, interests, preferences, location and other information provides a great convenience for platforms to analyse users, so as to push more accurate content for users. This is a great way to analyse users and deliver more accurate content to them, with messages that lead to consumption. Compared to other social media platforms where short video content is interspersed with open screen ads and infomercials to gain access to users, the "Xiao Nian Gao+" platform is more about harvesting traffic through online paid courses. In terms of operations, Xiao Nian Gao regularly shares free creation courses, carries out themed creation activities and opens the Nian Gao Creation Academy, which promotes users' continuous participation in creation and accumulation of quality UGC, while also covertly guiding them to engage in spontaneous consumption behavior to enhance user stickiness. At present, the platform has about 100,000 paying users, which is an important indication that the elderly have become the labourers of consumption.

4.3 The labour of emotion

The American sociologist Hawkshead first introduced the concept of "emotional labour", saying that "if emotional work or emotional management is for pay, then it should be called emotional labour". Older people are more concerned with emotional and spiritual fulfilment than material accumulation, so watching, producing and sharing videos is a key outlet for emotional accumulation and release. In the digital information age, new forms of labour controlled by media technology are beginning to shift from digital technology to individual

emotions. Emotional instincts will drive users to continue to invest time, to continue to produce and consume, or to give continuous likes and comments to creators, or even to watch live comments pop-ups, contribute gifts, etc., to get satisfaction and recognition in terms of emotional support through interaction. Short videos complete the exploitation of users under the sugar coating of entertainment, making them unconsciously become digital labourers who accelerate capital appreciation.

V. THE ALIENATING EFFECTS OF THE 'LABOURIZATION' OF OLDER PEOPLE

5.1 Internet addiction

As Salem McCrae says, "As an instrumental presence, the medium is increasingly becoming an indispensable mediator in one's production, in one's life, and even sometimes an end in itself, that is, a certain non-purposeful mental dependence on the medium that people are gradually developing." The instant gratification gained from watching short videos stimulates our brain for a short period of time, and the resulting dopamine secretion gives the viewer a thrill that can be addictive. With the anxiety that accompanies addiction and dependence, users as subjects are controlled by the media practices that produce content like "titty music", completely losing their initiative, and the silver-haired generation is accelerating into the ranks of "internet addicts". The elderly are also suffering from health problems such as loss of eyesight and thumb tendonitis as a result of their excessive addiction to short videos, and the effects of prolonged media practices on the health of the elderly are even greater.

Therefore, the relevant online platforms for the elderly should monitor and reduce in real time the pushing of content that is likely to cause Internet addiction among the elderly and is inappropriate for the elderly, so as to divert and regulate it from the root. In addition, the length of viewing time should be adjusted to suit different groups, so as to help the elderly to establish moderate and reasonable viewing habits.

5.2 Group isolation

The negative psychological experience of loneliness occurs when the number and quality of social relationships desired is lower than those actually available to the individual. The more individuals experience loneliness, the more they will indulge in online social interaction, replacing real social interaction with online social interaction, which may reduce their loneliness but can also lead to online addiction. Therefore, online socializing cannot be the best solution to relieve loneliness, instead, people indulge in online socializing and neglect the personal nature of real interactions, falling into a situation of "group loneliness", and "the more lonely and addicted, the more addicted and lonely" becomes the norm for most people. The lonelier you get, the more you get addicted and the more lonely you get" has become the norm for most people.

For older people on the margins of society, access to the internet has always been an expedient way of bridging the loneliness gap in their leisure time. Even through the operation and penetration of the "digital feedbacks" mechanism,

intergenerational communication between parents and children can be achieved across scenarios and channels, which to a certain extent crosses the intergenerational communication barrier caused by the different levels of participation in digital life, and satisfies the emotional dependence of intergenerational digital interactions. However, the feedback of "digital feedbacks" in the family arena is not entirely positive, especially when both parties are immersed in the "information cocoon" constructed by their respective virtual digital spaces, neglecting the presence of "in-person interactions". The alienation of intergenerational relationships is counterproductive, especially when both parties are immersed in the "information cocoon" created by their respective virtual digital spaces, ignoring the presence of "in-person interactions". The more time spent on social software, the less likely it is that people will maintain the intimacy around them, as smart terminals as "new organs" limit their ability to feel and approach relationships.

As people become accustomed to living socially online, the ease of establishing and maintaining interpersonal relationships and the lack of in-person interaction and alienation become two sides of the coin of digital inclusion for older people. In order to cope with this paradoxical situation, it is necessary to call for the presence of the body and the establishment of real interactions and communication between people, in order to create the strength to combat the emptiness and anxiety encountered by individuals in the process of socialisation.

5.3 Privacy breach

In a digital environment, the use of media platforms inevitably requires users to give up some of their privacy in order to ensure a basic product experience, and for older people, who are not well educated in digital media, identifying the boundaries of personal information authorisation is a major challenge. The misuse of older people's data for addictive design and the numerous online scams targeting older people are also real dilemmas that prevent them from participating and interacting with online society. On the one hand, the collectivist Chinese are more likely to share secrets or privacy in order to gain a ticket to the community, and are more likely to use "privacy" as a trendy Western term, so the concept of "privacy" is still in its infancy in China. On the other hand, even when platforms offer privacy protection services and are informed, older people are often unable to understand the privacy protection options due to their literacy level. Older people are not yet confident in their own privacy protection abilities, so even if they have subjective privacy concerns, they do not act directly to protect their privacy, but rather seek information to understand and confirm the situation before deciding how to implement pre-privacy or remedial action.

Therefore, in the process of ageing-friendly renovation, it is necessary to build a more secure network environment on the one hand, and on the other hand, it is also necessary to start with the cultivation mechanism of privacy protection awareness of the participating subjects, so as to improve their

own privacy protection ability to do a good job in caring for the elderly.

VI. FUNDING

Against the backdrop of both digital media and an ageing population, the "age-friendly transformation" has facilitated the participation of middle-aged and elderly people in media practices and created a new opportunity for the digital integration of the elderly in modern society. However, as "new immigrants" in the digital age, middle-aged and elderly people lack awareness and reflection of the new form of labour control, and the nature of their browsing and production of short videos is to engage in hidden digital labour, further deepening their labouring behaviour in three dimensions: production, consumption and emotion. Users who have been immersed in the video environment for a long time face the consequences of alienation brought about by media and technology, such as the domination and domestication of their bodies, the alienation of parent-child intergenerational relationships, and even the risk of privacy leakage. It is imperative that all parties work together to help the silver-haired population break free from the trap of technological logic and the complicity of capital, so that the elderly can gain true autonomy and freedom in their leisure time.

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