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## **Jiaoyufication: When Gentrification Goes to School in the Chinese Inner City**

### **Abstract**

Gentrification, or the class-based restructuring of cities, is a process that has accrued a considerable historical depth and a wide geographical compass. But despite the existence of what is otherwise an increasingly rich literature, little has been written about connections between schools and the middle-class make-over of inner city districts. This paper addresses that lacuna. It does so in the specific context of the search by well-off middle class parents for places for their children in leading state schools in the inner city of Nanjing, one of China's largest urban centres, and it examines a process that we call here *jiaoyufication*. Jiaoyufication involves the purchase of an apartment in the catchment zone of a leading elementary school at an inflated price. Gentrifying parents generally spend nine years (covering the period of elementary and junior middle schooling) in their apartment before selling it on to a new gentrifying family at a virtually guaranteed good price without even any need for refurbishment. Jiaoyufication is made possible as a result of the commodification of housing alongside the increasingly strict application of a catchment zone policy of school enrolment. We show in this paper how jiaoyufication has led to the displacement of an earlier generation of mainly working class residents. We argue that the result has been a shift from an education system based on hierarchy and connections to one based on territory and wealth, but at the same time a strangely atypical sclerosis in the physical structure of inner city neighbourhoods. We see this as a variant form of gentrification.

### **Schools and the gentrification of China's inner cities**

This paper focuses on the fixed and often short term occupation of apartments in older and shabbier parts of inner city Nanjing, eastern China, by parents intending to place their children in the city's top schools located nearby. Individual families buy these apartments at inflated prices, inhabit them for relatively brief periods, and then sell them on at a profit to the next cohort of parents without needing to invest to improve them. We call this phenomenon *jiaoyufication*, borrowing the Chinese word for education, *jiaoyu*, and combining it with the tail of 'gentrification'. Jiaoyufication is education-led gentrification played out in Chinese cities.

The phenomenon discussed in this paper stems from education reforms and how these have dovetailed with reform of the housing system to impact on residential patterns in Chinese cities. We concentrate on Nanjing, one of China's largest cities with a population of about eight million, located on the Yangtze River about 300 kilometres northwest of Shanghai. Nanjing is far from being the only Chinese city to be affected by *jiaoyufication*; this is a nationwide phenomenon with particularly strong ramifications in the largest cities such as Beijing (Liu and Liu, 2015). *Jiaoyufication* represents a strong indication of the importance placed in contemporary China on education as a means to retaining social capital. Nor is this the only way in which parents attempt to buy their way into the catchment areas of prestigious schools.

Jiaoyufication is the result of a move from an education system that depended on social status, in this case position in the political hierarchy, to one reliant on income, on the ability to purchase a residence in the catchment zone of a leading school. While elite schools in Communist China had originally been designed for the children of senior officials, the introduction of a system of school catchment zones combined with the privatisation of work-unit housing blocks acted together to allow parents to buy their way into the catchments of highly regarded schools. The

crucial point is to be a registered resident of the catchment area of a top primary school because this makes it easier to enter an equally prestigious junior middle school (the catchment areas often overlap).

What makes the phenomenon of jiaoyufication particularly striking, apart from the speed and intensity with which it is happening, is the nature of the housing that is being “gentrified” and the approach to the housing adopted by the gentrifiers. The apartment blocks, built as work unit housing, look flimsy and ramshackle, products of the 1970s when few funds were available for housing (see Appendix 1). Once parents have bought an apartment, they have no wish to rebuild or radically refurbish their home, but they know they can sell it on profitably in six or nine years’ time, when their child has moved onto junior or senior middle school. No thought need be given to improving the neighbourhood as part of a strategy of increasing cultural and economic capital as there will always be more parents wishing to buy.

Jiaoyufication is driven directly by the external force of property agents and their speculation activities, and indirectly realized by the self-generated needs of gentrifiers (mainly parents in a family). As Butler and Robson (2003) argue, education is a critical social field for the strategic formation and maintenance of middle class status. In contrast to families of higher status, Nanjing middle class families with lower economic capital but higher cultural capital are taking a potentially risky decision to buy expensive apartments and move into a particular inner city locality to retain the future social status of the family and verify their children’s middle class self-identification. Similar findings can be found in Bridge (2001)’s research on the risk decision-making of middle class gentrifiers (e.g., white collar workers with lower economic capital but higher cultural capital) in a dilapidated neighbourhood. Therefore, the decision to move into the catchment zone of a leading school is a rational strategy in the context of the *habitus* of middle class people seeking to ensure their future status and successful cultural reproduction.

However, another aspect of institutional intervention, in this instance the change in school zoning policy in 1996, has transformed the social process of education provision into a geographical issue in which the immediate locality of a residence enables access to the top educational institutions which are of limited availability. This has created a link between locality and education provision, a link that is similar to what Butler and Robson (2003) see as shaping middle class life in inner London. These family projects to retain cultural capital have been creating the phenomenon we are here calling jiaoyufication, a genre of education-led gentrification particular to metropolitan areas of China but with some similarities to processes in London and elsewhere.

At the forefront of our concerns in this paper are two issues. The first concerns the nature of changes that are occurring to inner city neighbourhoods in large Chinese cities like Nanjing. We identify school catchment zones as a crucial factor in attracting more affluent, middle class residents to those parts of cities that had once been a patchwork of compound housing for work units (*danwei*). The consequence of this has been an apparently contradictory combination of much higher property prices relative to other inner city areas alongside a lack of upgrading of the housing stock. The second issue involves the strategies of families who are involved in partial and temporary relocation in inner city areas in order to further their children’s education and so eventually enhance their career prospects, while contributing to the family’s cultural capital.

The phenomenon that we introduce in this paper adheres to some of the characteristics conventionally ascribed to gentrification while diverging in other important respects; it involves displacement and class conversion of neighbourhoods, as well as speculative profiteering on

property values, but not the refurbishment of properties to extract additional cultural and capital value. Our paper therefore picks up on the traditional emphasis of gentrification studies on class transformation in inner city neighbourhoods and opens the scope out to include a wider sphere of potential gentrifiers than the young professionals on whom writers once focused. We connect with and build on the work of scholars who have expanded the concept and enlarged gentrification studies with extensive research into education segregation.

The paper continues from here with a section setting jiaoyufication within the context of various patterns of education-led gentrification elsewhere, and particularly in Britain, and other types of gentrification in China. The paper's third section charts the successive attempts to end a hierarchical school system and introduce a strict policy of entrance from catchment zones alone. After a review of the methods used to conduct this research, the paper moves on in the subsequent two sections to a discussion first of the physical transformations of neighbourhoods and the effect on house prices and then on the strategies of parent gentrifiers and the consequences in terms of displacement. The paper ends by concluding that reforms of housing and education have transformed the nature of social segregation in large Chinese cities so that it is no longer based on hierarchical position but on the means to pursue and retain cultural capital. This also reflects a shift in the nature of the Chinese elite, which was once based only on political standing (that is, position within the Chinese Communist Party) but is now wider and more diverse and includes families who have accrued wealth from the business world in addition to professions and the political elite.

### **Placing jiaoyufication within broader perspectives**

The concept of gentrification was initially narrow in scope, limited to the process of rehabilitation of older residential buildings in inner-city neighbourhoods alongside displacement of working-class occupants by richer middle class incomers (Hamnett, 1991). However, as Smith (1996) has emphasized, gentrification should refer to the class remake of urban (and rural) landscapes, and its principal features consequently mutate in their spatio-temporal dimensions. Since around that time the literature on gentrification has diversified in spectacular fashion -- or rather, the concept itself has been significantly stretched and in the process incomparably enriched, reflecting an acceleration and diversification in types of urban restructuring and the increasing size and diversity of middle classes around the world. While it is clearly the case that our understanding of what constitutes gentrification has expanded, at least some of what may be considered the core constitutive elements of classical gentrification need to be present; these can be taken as displacement of former residents, class conversion of a neighbourhood, the acquisition or preservation of cultural capital among gentrifiers, the exploitation of a rent gap for profit making purposes, and the upgrading of properties (Smith, 1996; Clark, 2005; Lees et al., 2008; Slater, 2015). We argue in this paper that jiaoyufication intersects fully with three of these five elements in the following ways: previous working class residents (are forced to) leave as affluent newcomers seeking to hand down cultural capital to their children replace them, thus causing neighbourhoods to be transformed in terms of their class constitution. This makes jiaoyufication therefore a notable if unusual variant of gentrification.

The activities of gentrifiers take place, as Butler and Robson (2003, p. 7) write, "across four core social 'fields' of housing, employment, consumption and education", but of these four it is education that has been the least discussed in the literature. Within the vast array of work on gentrification, remarkably little has been written on the impact the choice of school might have on

the class make-up of neighbourhoods. It played little part in earlier debates around the causes of gentrification, where Ley's emphasis was on educational achievement rather than choice of school (Smith, 1987; Ley, 1987). It is only more recently, and chiefly in the British context, that education-led gentrification has become a focus of gentrification research. Butler and Robson (2003) and Bridge (2006) have investigated the interaction between school education and middle-class decisions about residential location, setting their work within the parameters of Bourdieu's concept of *habitus* (Thiem, 2009, p. 159). Their research makes it clear that a metropolitan centre like London offers many more possibilities than does a provincial city like Bristol to retain cultural capital through the choice of house and neighbourhood on the one hand and school on the other. The nuanced and wide-ranging effect that choice of school by affluent gentrifiers has on the class make-up of neighbourhoods is further explored in the context of East London by Butler and colleagues (2013) and on rural South East England by Smith and Higley (2012). In the North American context, Lipman (2012) has written insightfully on the damaging impact to low-income families of attempts to introduce mixed income schools in Chicago, while DeSena (2006) has researched the ways in which gentrifiers' choice of school for their children has reinforced the segregated nature of public schools in Brooklyn, New York.

In this paper, we are examining the impact on neighbourhoods of parental choice of school for their children. But our concern is not only for the changing nature of city space but also for the life-course of gentrifiers, whose decisions at various points in their life cycle can see them move into or out of areas of gentrification. A neglect of life-course in studies of gentrification is something that Smith and Holt (2007) point to in their analysis of studentification in relation to gentrification. They see students as "apprentice gentrifiers" (p. 144) learning in provincial British cities to become attuned to the stimuli of gentrified neighbourhoods. Jiaoyufication and studentification -- the conversion of neighbourhoods into areas where students tenancies predominate -- are two differing processes; jiaoyufication overlaps with 'mainstream' conceptions of gentrification, while studentification is an extension of gentrification. However, they share one point in common; neither normally involves the refurbishment of properties. Indeed, Smith and Holt argue that one of the consequences of studentification is often the downgrading of neighbourhoods.

Nanjing, with a population of around eight million, is too big to enable meaningful comparison with British provincial cities. A city the size of London, where parents can choose between a range of different gentrifying neighbourhoods, presents a better point of comparison. Here, the role of education in engendering gentrification helps to provide some perspective for the education-led gentrification, or jiaoyufication, that we are identifying and analysing in Nanjing. In both contexts, the point at issue is the role of schooling as an ingredient in gentrification trends. In both cities, as the work of Butler and Robson (2003) makes clear for London, parental decisions on where to live are driven in part by the availability of places in schools that are of a sufficient quality to retain or advance middle-class status and cultural capital. However, the differences with London are probably more significant than the similarities. In London mobility for middle-class gentrifiers was enhanced by legislation designed to afford parents greater choice of school, while in China tentative moves have repeatedly sought to ensure that only students living in its catchment zone can attend a specific school. In London many parents have had to play off perceived lower quality of school against the cultural and economic capital gained through pursuing strategies of gentrification (Butler and Robson, 2003), whereas in various Chinese cities, the best schools remain in central and inner areas.

When Chinese inner cities experienced broad re-urbanization, especially in the coastal regions around the mid 1990s, something akin to new-build gentrification first appeared; large areas of dilapidated residential districts full of largely working-class work-unit housing were demolished at an unprecedented speed for the purpose of capital accumulation and accelerated economic restructuring (He and Wu, 2005; He, 2010). With massive inner city redevelopment and dramatic socio-spatial change, stronger state-driven gentrification is already spreading from the developed coastal regions to the less developed western regions, which results in the direct or indirect displacement of the inner-city poor by a new-build gentrification community (He, 2010; Zhang, 2010; Davidson, 2007). As we will argue below, displacement is also a feature of the jiaoyufication process. Nevertheless, what we are looking at here is a version of in situ not new-build gentrification, and yet one that has nothing in common with the aestheticised gentrification of the up-market consumption centre of Xintiandi in Shanghai or of courtyard houses in Beijing (He and Wu, 2005; Shin, 2010).

Furthermore, in a comparative study with studentification in the Anglo-Saxon context, He et al. (2011) identified some specifically Chinese characteristics of studentification in the context of Guangzhou. Their evidence shows for example that displacement is not a consequence of studentification there, and that it is above all low-income urban villagers who have benefitted from the rents paid them by students. Neither in China nor in Britain, it seems, can studentification be seen as anything more than partially commensurate with gentrification, in that both can contribute to a class remake of neighbourhoods.

In summary, despite the considerable weight and growing spread of academic work on gentrification, there is only a sparse literature examining the relationship between the retention of cultural capital through choice of school and the acquisition of cultural capital through a decision to reside in a gentrifying inner city neighbourhood. This lacuna is all the greater for China, where, to the best of our knowledge, there has as yet been no academic research published in English on education-led gentrification.

### **From privilege-based to territorial-based school hierarchies**

In order to appreciate the significance of jiaoyufication, it is necessary first to review the changes in the educational system as the authorities have fought through successive measures to move away from a hierarchically based school system with top schools for privileged cadres towards one in which enrolment is based on residence alone, only to find this interacting contradictorily with housing commodification. This section concludes with a brief introduction to Nanjing schools. It is necessary first, however, to note that the Chinese education system is similar to the US and Japanese systems. Elementary schools recruit children from 7 to 13 years old, from Grade 1 to Grade 6. They then enter junior middle school (Grade 7 to Grade 9), from where they may enter senior middle school for another three years of study, from Grade 10 to Grade 12, or a vocational or technical school.

Access to superior educational resources has traditionally relied on the social hierarchy within the Chinese Communist Party and government. In 1952, the Government Administration Council of the Central People's Government, predecessor of the Standing Committee of the National People's Congress, promulgated a decree entitled the "Implementation of Schools for the Children of Cadres", which authorized local governments to direct public education resources to privileged schools. Known as Chinese "Eton Colleges" and located near to officials' residences, the

Schools for the Children of Cadres (SCC) recruited 13,084 students according to the rank, work experience and employment history of their parents in the bureaucracy (Yang, 2006). This echoed Bourdieu and Passeron (1990)'s view that the education system, or field of education, ensures the permanence of social privilege. The public became exasperated with the state's redistribution of inequality (Bian, 2002), which extracted public education resources for a small group. This resulted in the central government rescinding this policy and annulling associated privileges in October 1955. Nevertheless, cancelling the privileges of the SCCs neither ensured educational equality nor implied elimination of segregation and discrimination in education (see Table in Appendix 2).

In 1959, in order to cultivate talent in technology and increase the size of the scientific elite, Prime Minister Zhou Enlai announced that "the fundamental mission of school policy should be not only to promote education quality, but also to build many key schools with concentrated limited resources" (Yang, 2006, p. 9). Subsequently, the Ministry of Education issued a series of laws and regulations to emphasize the importance of constructing key schools. Closed-down SCCs were then reopened, successfully changing the education resource distribution pattern among urban residents for the following half century.

Following the Chinese-style neoliberalism of urban economic and institutional reform introduced from the early 1980s, delays in reforms to the education system, which were not implemented until the late 1990s, had a negative impact on equitable access to education resources. The State Education Commission of China (SEC), a former agency of the Ministry of Education, declared its intention to open one thousand new National Demonstration Senior Middle Schools in 1995. Since most of these schools were selected from the former SCCs (now generally called key schools), it became an extension of the former elitist education tradition. However, a subsequent reform to introduce a measure of commercialization into the education system in 1996 allowed key schools to enrol a small number of students living outside school zones but at for additional fee (see Table in Appendix 2). These institutional reforms meant that access to the best educational resources was now dependent either on a family's place in the social hierarchy or on its ability to pay fees. In order to alleviate public dissatisfaction with segregation in education, the NPC relented and issued an Amendment to the Compulsory Education Law in 2006. This amendment introduced a requirement banning key schools. However, this requirement has been thwarted by local governments, with the education boards of key schools in some instances merely changing their title to Demonstration School, Experimental School, etc. Whatever these key schools are named, they are always favoured by both parents and school children. In this paper we will continue to refer to them as 'key schools'.

The differentiation between key and common (that is, non-key) schools intensifies residential segregation through the introduction of a distinction between catchment zones for key schools and zones for common schools. In 1986, the SEC had issued a "notice regarding reform of enrolment to junior middle school", which required local education bureaus to actively enforce a school catchment zone policy in urban areas, according to which a student's school was to be determined by the location of the parents' *hukou* registration, suggesting that this was not happening as it should have been. A decade later, in 1996, the NPC approved the school zone policy as part of its new Compulsory Education Law. This required that "local governments should rationally allocate places in elementary schools and junior middle schools to fulfil the requirement of enrolment in the nearest school". On 14 January 2014, the Ministry of Education repeated earlier calls and ordered that all junior middle schools must recruit students by catchment. As a result,

wealthy households can move into the zones of key schools and apply to enrol their children. This causes a geographical differentiation of the socio-economic division between the catchment zones of key schools and the zones of other schools.

While policy on education has veered in one direction then the other, reform of housing has followed a more direct path. A series of housing reforms were introduced in 1995, including the Urban Real Estate Administration Law, setting the scene for the large-scale commodification of housing in China. As a result of these reforms at least three types of housing came into existence in urban areas: (1) commodified housing, most of which has been built since 1995 and part from the former public housing of work units (*danwei*) purchased by employees before 1997 according to the reforms of 1995; (2) public housing, provided by local government mainly for urban *hukou* holders on low incomes, some of which can be resold (called affordable housing) and the rest which cannot change property title (named low rent housing); and (3) illegal housing, which is generally self-built housing in urban villages, where residents cannot register their *hukou*. The commodification of the bulk of China's urban housing has made it possible for parents to buy apartments within the catchment zones of key schools in order to have themselves registered on their *hukou* as residents in and lawful owners of the property and subsequently to send their child to a key school. In other words, the Compulsory Education Law of 1996 and the whole thrust of policy from the centre interacted with the *hukou* registration system, property registration regulations and the housing market to allow people to 'buy their way' into the catchment zones of prestigious key schools. Then, whoever physically lives in the apartment and has registered their *hukou* at the same address (by purchase or inheritance of the property) is automatically eligible to apply to the local school (see Figure 1).

(Insert Figure 1 about here)

The housing market reforms of the 1990s and the ostensible ending of a hierarchical school system in 2006 transformed the previous social differentiation into residential segregation between key school zones and common school zones. After the reform of 1996 that had opened the door to a commercialization of the education system, a small number of families were able to buy their right to attend key schools directly. This caused outrage and became a serious social issue (Bian, 2002), resulting in the response from the NPC with its 2006 amendment of the Compulsory Education Law prohibiting all tuition and special school fees. This highlights the impact of the reforms of the housing market and *hukou* registration system on the nature of segregation in education from the mid 1990s. The housing reform measures of 1995, along with a partial relaxation of the *hukou* system, enabled wealthy families to send their children to key schools by purchasing a suitably located house. This meant that hierarchy-based educational segregation had finally been replaced by a socio-spatial segregation model. For instance, Langyalu Elementary School, which was founded in 1934 in the middle of a residential area for government officials exclusively for the children of national (1934-1949) and later provincial (1949-1990s) officials, then began to recruit students from those who had bought apartments within the catchment zone in the late 1990s according to the new institutional arrangements.

The elementary and middle school education system in Nanjing ranks as one of the best among Chinese cities. In 2003, Nanjing had 16 key elementary and middle schools containing a total of 26,000 enrolled students, representing 15 per cent of all the city's school children. All its

key schools are located in the inner city, which is delineated by the Ming Dynasty wall and Xuanwu Lake in the east, and the Qinhuai River in the south. Of these, No. 29 Junior Middle School is generally seen as the best choice for parents as its catchment zone overlaps with that of one of the best elementary schools, Lixue Elementary School:

Parent A: No. 29 Junior Middle School is definitely the best. It has the best teachers, facilities, and most important of all, when my son graduates, he will have an advantage over others in being able to enter famous senior middle schools, such as the Nanjing Foreign Language School and the Jinling Senior Middle School.

Whoever has a Nanjing hukou can apply to any senior middle school. However, key elementary and junior middle schools belong to powerful and wealthy education boards such as the Nanjing Foreign Language School (NFLS) Education Group and Jinling Education Group that prefer to recruit students from their own junior middle and elementary schools. For instance, 15 per cent to 30 per cent of junior middle school students of the NFLS are enrolled directly into its senior middle school (with success depending on marks), while the average acceptance rate of other key junior schools into the NFLS is below 8 per cent. Consequently, the families of graduates of key junior middle schools prefer to remain in the same general area but to move outside the immediate catchment zone, where they can rent better, cheaper and more convenient accommodation secure in the knowledge that their child is likely to find a place in the affiliated senior middle school, without the need to buy.

This is the national and local context within which our research is set. It is one in which central government has created a system of enrolment by catchment area and repeatedly attempted to end any form of discrimination, whether by name or otherwise, that favours key schools. It remains clear to parents (and not only parents), however, which are the best (or key) schools, and these schools continue to receive support from various sources, the nature of which lies beyond our scope here. At the same time, the commodification of housing has enabled families with capital to move into the catchment areas of key schools. This process has been occurring in Nanjing, as in other large Chinese cities.

### **Researching jiaoyufication in inner city Nanjing**

Our research proceeded in three stages. We started by choosing No. 29 Junior Middle School as our target case study catchment zone. We divided the school catchment zone according to distance from No. 29 Junior Middle School. We called the catchment zone the core jiaoyufication area and the area around it its adjacent jiaoyufication area (AJA – our own coinage). As mentioned above, only those children whose parents bought an apartment in the correct zone, who have it registered as their primary domicile in the family hukou and who physically live in the apartment can apply for and be enrolled in the school. This type of apartment is an informal but widely recognised feature of the landscape of big cities and is called *xuequ fang* in Chinese; we have translated this as education apartment, or edu-apartment for short. We further divided the core area into a Single Edu-apartments Zone (SEZ, *danxue qu*, an accepted term in Chinese) and a Twin Edu-apartments Zone (TEZ, *shuangxue qu*), the latter referring to an area covered by the overlapping catchment zones of the key junior middle school and one of three nearby key elementary schools, Lixue, Langyalu and Lasalu. The AJA is outside its catchment zone but close enough to a key senior middle school to be

within 15 minutes' walking distance. We heard from interviewees in comments supported by estate agents that some wealthy families moved from edu-apartments into more spacious properties in the AJA ; this move did not necessitate a change in hukou registration and did not therefore affect their child's school enrolment.

The second stage involved the identification of edu-apartments. For this purpose we collected longitudinal data for 354 apartments; these data consisted of the location, floor space and age of buildings, data that we obtained from the Nanjing Statistics Bureau. We then obtained details of transaction records from 1996 to 2012, which are compiled by the Nanjing Land and Resources Bureau and to which estate agents have access. The data were validated through case by case checks with estate agents using records held by the Housing Bureau of Nanjing, enabling us to affirm that these properties could indeed be regarded as edu-apartments. We used these data together with census data collected from the Nanjing Statistics Bureau to identify the major characteristic factors of the particular form of education-led gentrification that we are calling jiaoyufication, i.e., a high proportion of small families, of school-age children and of elderly people, especially females, who often care for the children during the school week (Wu et al., 2014). We then used a GIS programme to place the factor map of jiaoyufication over a 15-minute walk boundary area from No. 29 Junior Middle School to develop a detailed understanding of the location and spread of edu-apartments within the core jiaoyufication area (Figure 1).

Thirdly, we interviewed key actors including estate agents, gentrifiers (parents and grandparents of children at key schools), officials responsible for household registration, housing bureau officials, and educators (including class advisers and deputy principals) working in the four key schools mentioned above. We started with a series of in-depth interviews with two Municipal Education Bureau officials, three key school principals, one class adviser and two teachers. We followed this by using a stratified sampling set to choose ten parents of children in the same Grade 7 class (covering 25 per cent of students in this class), and interviewed them for between 30 and 60 minutes each at No. 29 Junior Middle School. They were aged from 35 to 42; six were females and four were males; eight had a higher education background; nine families had a car; and all were professionals or small business entrepreneurs. We followed this up later with a further series of 16 in-depth interviews of a randomly sampled group of five parents and eleven grandparents of children in the same catchment zone. At the same time, we undertook a questionnaire survey. In both interviews and survey, the questions covered self-identification, family background, the reasons and strategies used for choosing the school, attitudes to their edu-apartment, housing and neighbourhood conditions more generally, and future plans for the property.

We also interviewed a number of estate agents, including the deputy general manager of an estate agency. We then individually interviewed on several separate occasions five estate agents specializing in housing in key school zones at their offices. The five agents were young (aged from 26 to 32), comprising one female and four males (with only one possessing a college diploma) from three large and two small estate agencies. The interviews covered the following topics: the identity of buyers of edu-apartments in key school zones, the preferred apartment blocks for the purchase of edu-apartments and the agency-led dynamics of the booming market for edu-apartments.

### **The housing characteristics of jiaoyufication neighbourhoods in inner city Nanjing**

This section discusses how jiaoyufication affects neighbourhoods in terms of housing and the physical infrastructure. In the new unrestricted market for housing the scarcity value of housing

provision in the catchment zones of key schools has boosted house prices dramatically. As a result, the housing market in catchment zones of key schools has been attracting the attention of both developers and real estate agents.

The catchment areas of key schools, Nanjing's jiaoyufication areas, amount at the time of writing to 5.4 square kilometres, or about 13 per cent of the inner city area. Living conditions in the catchment zones of key schools are a little better on average than in nearby neighbourhoods. For instance, the average size of an apartment in a jiaoyufication housing area is 57 square metres per household, which is a little higher than the average of 54 square metres for the inner city of Nanjing. 53 per cent of edu-apartments have three rooms, while over 80 per cent were occupied by newcomers in the six years before 2000, in contrast with buildings in nearby areas, where 87 per cent of residents moved in before 1980. This indicates the somewhat more transient nature of the population in the key school zones. On the other hand, edu-apartments tend to be quite old by the standards of housing in large Chinese cities. Thus, according to the 2000 census data, 92 per cent of housing in key school zones was built in the 1970s or 1980s.

The results of interviews with estate agents and jiaoyufication parents suggest that parents of key school students are either persuaded by estate agents or have decided that purchasing an edu-apartment, far from being risky, is a wise decision and a profitable investment:

Parent B: The residence is too small and quite old. [We bought it] just for our child and not for the whole family to live in. ...Whatever happens, we will sell it in three years when my son graduates. So, simple decoration is enough.

While an estate agent active in key school zones told us:

Agent A: It's hard to say [if you can get somebody's help]. One of my clients who is a leading [government] official, did buy an edu-apartment.... As you know, it would be unreliable to depend on connections to get enrolled. After all, [if your child lives in] an edu-apartment, it is convenient for getting to school too.... And at the end, when your child graduates from a key school, you can easily resell it at a good price. This is a good buy!

It is therefore to some extent property agencies and their speculative activities that create a residential filter and displacement in jiaoyufication areas; an agency will receive a commission of from 1 per cent to 3 per cent on the house price for each sale.

According to the data collected from the property agencies, there exists a significant price differentiation between house prices in the catchment areas of key schools and those found in other parts of Nanjing's inner city. In the cross-sectional data investigated, there is a significant gradient in house price from the core jiaoyufication area to the AJA and to adjacent non-jiaoyufication areas. A maximum house price gradient exists between the core jiaoyufication and non-jiaoyufication areas. For instance, the average price of 20-year-old edu-apartments in the SEZ and TEZ of Langyalu Elementary School was RMB 26,000 and 40,000 per square meter respectively in 2012. The lowest price was for a 40-year-old SEZ property on Beijing West Road, which cost RMB 18,000 per square meter. Property prices in jiaoyufication areas have been pushing up since the late 1990s. For example, jiaoyufication in the case of Nanjing means that the price of an edu-apartment is much higher (between 125 per cent and 150 per cent higher) than the price of an apartment

outside of a key school zone. This is vastly different from the observation of Butler and Robson (2003) that property prices rose by a modest 15 per cent to 19 per cent in London in neighbourhoods where education could be seen as one of the motives for gentrifiers. In fact, in Nanjing it is not only a question of jiaoyufication gentrifiers being pulled by the self-generated need of the middle class for *culture/class* reproduction, but also of the same group being pushed by the pursuit of profit-making from investment in their edu-apartment, as can be seen from the following comments:

Parent D: The price of an edu-apartment has been rising these last years.... When my daughter graduates from No. 29 Junior Middle School, I will definitely be able to sell it for a good price... So enrolment [in the Senior Middle School] seems to be a by-product of this investment....It [purchasing an edu-apartment] is one of the safest investments..., safer than investing in stocks.

Agent B: The price of an edu-apartment should increase; there is always a scarcity of supply... Of course, we in fact live off commissions, the higher total price, the better our income. They [middle class parents] are more capable of bearing the increased price of an edu-apartment than lower class families in non-edu-apartment housing.

Chinese urban house prices have continued to rise in the past two decades. However, the price of an edu-apartment in a key school zone has risen faster than property in a non-key school zone. We discovered a distinct hierarchy in house prices in inner city Nanjing. The price of an edu-apartment within a key school zone (whether SEZ or TEZ) is significantly higher than the cost of an apartment in an AJA or what an ordinary apartment in old housing outside an AJA would cost. In order to put figures to the differences, we examined two apartment blocks in neighbouring residential districts. One was at 48 Hankou Road in the AJA of No. 29 Junior Middle School, while the other, called Nanxiu Mansion, also on Hankou Road was within the SEZ of No. 29 Junior Middle School (see Figure). The former was built in 2000, and an apartment in the building was likely to cost RMB 17,000 per square meter in 2012; while the latter was built in 1997, with an apartment costing RMB 19,500 per square meter in 2012. Not far north of these two buildings, a 37-year-old condominium at 1 Wuyi Road cost RMB 25,000 per square meter in 2012, a somewhat higher price as it is in the TEZ of Lixue Elementary School and No.29 Junior Middle School. There is a further comparison to be drawn; this relates to AJAs and to rents rather than purchase price -- jiaoyufication parents often (but not always, as we can see above) prefer to rent not buy in an AJA once they have disposed of their edu-apartment in an SEZ or TEZ. The rent of a three bedroom condominium on those parts of Hankou Road in the middle school AJA was RMB 3000 per month in 2010. In a neighbouring area not in the AJA the equivalent figure was no more than RMB 2000 per month. In the following two years, the annual rate of increase in the former was 15 per cent, much higher than in the latter. We believe therefore that it is safe to conclude that the difference is caused by the speculation activities of estate agents and the limited provision of property in key school zones.

### **Jiaoyufication families, the strategies they employ and the residents they displace**

Jiaoyufication extends our knowledge of gentrification as a result of its specific traits. The social groups in jiaoyufication are distinguished demographically as being small families with young

children of school age, with a relatively higher ratio of females and a higher than average quotient of elderly members of the household (Wu et al., 2014). The average size of a household living in an edu-apartment in a key school zone was 2.2 according to the 2000 census data, less than the 3.3 average household size for the inner city. In these small intergenerational families, just under 60 per cent of jiaoyufication households have schoolchildren who are cared for by their grandparents from Monday to Friday, and then join their parents in other, more substantial apartments generally in suburban areas in the weekends. Parents often moved out of inner city areas together with their workplace as part of a process of suburbanisation of jobs that has taken place since the 1990s. Furthermore, the male/female ratio was equal in the jiaoyufication area, compared with the 1 to 1.4 ratio in the inner city as a whole. According to our survey of 2014, jiaoyufication parents tend to be well-educated white-collar people, with 84 per cent having a college education (much higher than the inner city average of 24 per cent), 34 per cent being managers of private companies or white-collar employees in state-owned enterprises; 21 per cent were government officials and 28.04 per cent were professionals in higher education and similar institutions.

The jiaoyufication phenomenon creates a neighbourhood with a rapidly changing population. For instance, nearly 80 per cent of the households in a neighbourhood that forms part of the SEZ of the key No. 29 Junior Middle School move in and out every three years according to estate agency data, reflecting the length of schooling at No. 29 Junior Middle School, from grade 6 to grade 9. Thereafter, its graduates move out to bigger, brighter and cheaper apartments in a nearby AJA (Figure 1) if they continue through grade 9 to grade 12 at the affiliated senior middle school. However, part of the Ninghai Road area mentioned above (called Beidong guashi, see Figure) is a TEZ of the key Lixue Elementary School and the key No. 29 Junior Middle School. 53 per cent of the households who have bought edu-apartments will remain in place during the 9 years from grade 1 to grade 9. The high mobility that comes with jiaoyufication is very reminiscent of studentification (Smith and Holt, 2007), and reflects a loose community attachment on the part of the jiaoyufication group. In fact, our 2014 survey showed that 35 per cent of households declared that they seldom had contact with their neighbours and 42 per cent never had any contact.

In contrast to traditional gentrifiers as defined by Ley (2003) and others and to college students (Smith and Holt, 2007; He et al., 2011), jiaoyufication gentrifiers identified in this research are mainly parents who have more economic, social, cultural and symbolic capital (Bourdieu, 1984). For example, 64 per cent bought their edu-apartment with cash and 51 per cent owned at least one second house. But they are less interested in improving the appearance and condition of the edu-apartments they buy -- and here there are parallels with Smith and Holt's (2007) point about the tendency for student (embryonic) gentrifiers to trigger a physical deterioration of buildings and neighbourhoods. Amongst our survey respondents, we found that only 10 per cent of households undertook a serious refurbishment of their apartment. This is because they are much more concerned with the right of enrolment in key schools rather than the aesthetics of housing or an attempt to distinguish themselves from other groups (Bridge, 2001), as testified by one of the parent interviewees:

Parent C: [His] grandma picks him up after school... It [the residence] is too small and old to decorate.... We bought this residence and registered it on our hukou just for schooling.

In both interviews and survey, we found that jiaoyufication gentrifiers do not regard their

jiaoyufication neighbourhood as home, and invest very limited social, cultural and symbolic capital to operate in these neighbourhoods. Many respondents told us that they seldom communicate with their neighbours, be they fellow jiaoyufication families or lower income residents of long standing, while from 'local' people, we regularly heard the following line of comment from an elderly lady interviewed in December 2014:

These days, too many rich people are moving in, driving their cars around all day bringing people in and sending them off. They hardly know the people who live around them. Some of them move out as soon as their children leave school, and new people move in. And as for those rich people, we have nothing in common to speak about.

Our research indicates that displacement of original working class inhabitants has been, and in some cases remains, a feature of education gentrification. Some inner city edu-apartments had previously been owned by a collectively owned enterprise (COE) that went bankrupt as danwei housing for its employees. However, these original residents were gradually displaced by comfortably-off gentrifiers over the past two decades, as an old widow in a COE danwei unit, who was one of at least 108 original residents, told us: "We [she and her son's family] have lived here for over 40 years.... Only five or six [other original residents] have stayed on; most of our workmates have moved out over the past ten years". This echoes our 2014 survey, which shows that only 7.5 per cent of key school students were the children of the original inhabitants of work unit housing. We were told this in an interview with an old couple in December 2014:

We were workers in a boiler factory [that subsequently went bankrupt] before the reforms.... We and our original neighbours [and co-workers] were all in the same danwei; they have nearly all moved out.... As for our new neighbours, we hardly know them .... They bought here for schooling.... We transferred our apartment to our daughter for our grandson's schooling.... As soon as he finishes school, we [together with our daughter's family] will sell our apartment as our pensions are insufficient to provide a down payment for our daughter [she and her husband are blue collar workers].

We had heard a similar story in June 2012 from a low income widow who lived with her daughter, son-in-law and grandson. Referring to the apartment blocks that had belonged to her husband's bankrupt COE factory, she said that his co-workers had, with the exception of five families, all been forced to move to the suburbs. She too was considering selling her apartment as her grandson had finished school, and the proceeds could be used as down payment for a house for her daughter in the suburbs and for her own pension.

This appears to be a pattern. The former occupants of danwei housing moved out once their children or grandchildren had left school and there was nothing more to be gained from living in housing that was too small for an extended family. Displacement is therefore as much a feature of jiaoyufication as it is of classic gentrification, and many other forms of the phenomenon. The social landscape that results is a fractured one that mitigates against community formation and brings with it serious consequences in the form of neighbourhoods punctuated largely by poorly maintained if not dilapidated housing that will eventually present a challenge in terms of public sanitation.

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**Concluding thoughts: the social and spatial consequences of jiaoyufication**

Jiaoyufication, or education-led gentrification, is a new inner city socio-spatial phenomenon and genre of gentrification caused by the interaction of China's education and commercial housing practices. It not only reveals how education maintains and enhances social differentiation and disturbs inner city residential space, but also extends our previous understanding of gentrification (Lees et al., 2008).

In this paper, while locating jiaoyufication within the wider spectrum of gentrification studies, we have concentrated on its place within the narrower field of education-led gentrification. We have argued that jiaoyufication and its practitioners share a number of traits with classic gentrification patterns and gentrifiers but differ in important respects. As one would expect, jiaoyufication affects the urban landscape of inner city areas and shapes the practices and strategies of middle class families in terms of class and cultural reproduction. On the other hand, jiaoyufication gentrifiers are mainly parents who have more economic, social, cultural and symbolic capital than the 'original' gentrifiers in North American and British cities. This is because they are much more concerned with the right of enrolment in a key school than they are with matters of taste in housing that might distinguish them from other groups (Bridge, 2001). Moreover, jiaoyufication gentrifiers are generally uninterested in improving the poor living conditions of the inner-city built environment, not least because they know they will move out within a short period of time and be replaced by another family with similar social status in a process that bears some similarities to studentification. Jiaoyufication, however, can best be seen as a Chinese contextualisation of mainstream education-led gentrification. As such it contrasts interestingly with the findings for London, where the cachet of an inner-city neighbourhood is an important driver of parental decisions on choice of home alongside perceived quality of school (Butler and Robson, 2003; Butler *et al.*, 2013).

Jiaoyufication is a form of residential segregation in which the wealthier elements of the middle class move into key edu-apartments in key school zones and gradually displace the original lower income households. This not only creates a new genre of housing segregation, but also shapes and consolidates a spatial fix of social injustice. Therefore, jiaoyufication is a crucial practice in the space reproduction of the urban middle and upper middle classes resulting from Chinese-style neoliberal education reforms, and it results in a socio-spatial landscape which creates spatial segregation of different social strata and fosters social differentiation across space (Jessop et al, 2008).

As a result of the practice of gentrification in the form of jiaoyufication, a privilege-based school hierarchy has been transformed into a territorial-based school hierarchy as part of the socio-economic redistribution of inequality that has accompanied the increasingly neoliberal reforms introduced since 1978. Amendments to the Compulsory Education Law in 1996 and 2006 were designed to allocate education solely according to residential location instead of family wealth, social connections and actual power. However, the freedom that the market gives to purchase edu-apartments at will has not only made the location criterion ineffective, but has also significantly distorted the property market itself, resulting in more serious socio-economic polarization. Through the overlap of this education segregation and residential segregation, socio-economic polarization has been reinforced and then fixed in place. In other words, education segregation in the social context has been transcribed as the geographical differentiation of school zones.

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