**Barriers to enduring pro-environmental behaviour change among Chinese students returning home from the UK: a social practice perspective**

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## Abstract

This paper explores the phenomenon of international student migration, as a potential site for pro-environmental behaviour change. It draws on qualitative focus group data collected from a sample of Chinese people who had studied in the UK and since returned to China. The findings show that living in the UK led to spillover of some pro-environmental behaviours, but most of these changes were not sustained upon return to China. Employing a framework from social practice, the findings show that the desire to ‘fit in’ with the social norms of a host country are powerful in creating change, without requiring normative engagement with sustainability. However, the findings also suggest that behavioural change will not endure after short-term migration without supportive social norms and where there are barriers to pro-environmental behaviours in the home country. The paper highlights what those specific barriers might be in contemporary China, with reference to cultural traditions of ‘mianzi’ and ‘guanxi’, government discourses which do not prioritise individual agency, and an absence of post-materialist values.

## Introduction

One consequence of China’s rapid economic development is that it is now the biggest source country for international students. In 2017 there were over 920,000 students from China studying abroad (17.5% of the internationally mobile students globally), adding to a total of 5.86 million Chinese who have studied abroad between 1978 to 2018 (Shou, 2019). In 2017 around 11% of Chinese international students came to the UK, the second biggest host country after the United States (UNESCO, 2019). China represents the largest single source country for foreign students in the UK, with over 106,000 students studying in 2017/18 (Higher Education Statistics Agency, 2019).

Within these numbers, China-to-UK student migration represents a large-scale cross-cultural encounter for each student. A premise of this paper is that this encounter constitutes a significant life-course event, and as other such events like moving house or workplace have been found to positively disrupt pro-environmental behaviour (Verplanken & Roy, 2016; Walker et al., 2014), so too might international student migration. This disruption – or positive behavioural ‘spillover’ - may be particularly likely when students study in countries in Europe or North America which have more entrenched pro-environmental social norms than China (Hsu, 2016; Lee et al, 2015). Previous studies on Chinese students in the UK have detected some pro-environmental behavioural spillover during their UK sojourn (Tyers et al., 2018) and suggested this experience can have a profound personal influence long after the sojourn is completed (Gu & Schweisfurth, 2015). Whether ‘temporary’ pro-environmental behavioural spillover can endure after returning home remains unexplored to the author’s knowledge. This paper thus addresses a knowledge gap, examining the experience of Chinese participants who had completed a period of study in the UK to address the primary research question: “How does a period of living in the UK affect the pro-environmental attitudes and behaviours of a sample of Chinese students following their return?”.

The findings are relevant for two reasons. Firstly, they offer a greater understanding of the opportunities for and barriers to, enduring pro-environmental behavioural spillover. Secondly, they draw on the ‘double consciousness’ (Golbert, 2001) or ‘bifocal’ view (Vertovec, 2004) acquired by transitional subjects – in this case student migrants – to illuminate some of the barriers to more sustainable modes of consumption in contemporary Chinese society. Previous research has largely looked at the ‘eco-authoritarian’ nature of China’s government (Beeson, 2010; Li, 2019), sustainability regimes at a governance or corporate level (D’Souza et al., 2020; Zhang & Hao, 2020), and innovations in sustainable technologies (Guo et al., 2018; Wang et al., 2019). Sociological examinations of (sustainable) consumption behaviours in China have been largely undeveloped (Liu et al., 2016; Zinda et al., 2018), yet as the world’s largest contributor to greenhouse gas emissions, such an understanding of these barriers is vital, if they are to be overcome.

The following section places this paper within previous research on sustainable consumption, theories of practice and spillover. Section 3 discusses the methodological approach taken; Section 4 presents findings from data collection; and Section 5 discusses the findings and offers conclusions and suggestions for future research.

## 2. Theoretical framework

### 2.1 Consumption, theories of practice

Consumption behaviour has been analysed from a variety of disciplinary perspectives, with economics and psychology perhaps having the greatest influence (Spaargaren, 2011). Notwithstanding attempts to integrate the influence of ‘external’ social norms, context and availability of information, these perspectives still primarily focus on the individual (Ajzen, 1991; van den Bergh & Ferrer-karbonell, 1999). Theorists of social practice shift the focus of consumption onto practices instead. Drawing on Bourdieu (1977) and Giddens (1984), practices are shared, habitual and routinized behaviours, performed and reproduced by informed, capable agents drawing on explicit or implicit ‘rules’ (Tyers et al., 2018). Those rules might be inferred due to physical technologies, or by the constraints and expectations deriving from socio-cultural norms. As technologies and norms change across spaces, or evolve over time, so do practices (Shove et al., 2012). In Bourdiesian terms, practices result from the interplay between *habitus* and *field,* where habitus refers to the dispositions governing an individual’s thoughts and actions, and field refers to the metaphorical ‘arena’ in which an individual displays his/her dispositions and accumulates different kinds of capital (Bourdieu, 1990; Nowicka, 2015). Playing sport, cooking a meal, washing oneself, and commuting may all be considered practices. While all practices invariably involve consumption of some sort, the consumptive aspect is usually considered to facilitate a practice rather than being the primary activity in itself (Warde, 2005).

Practice theories can therefore provide a ‘side-ways’ perspective into consumption itself, and suggest that promoting more sustainable modes of consumption[[2]](#footnote-2) means attending to the practices a given mode of consumption facilitates. An influential attempt to operationalise practices is Shove et al.’s (2012) schema of materials, competences, and meanings - the three ‘elements’ of any practice, as illustrated in Figure 1. Materials are things, technologies, infrastructures, and the ‘stuff’ of which objects are made; competences encompass skill and technique; and meanings refer to the symbolic and cultural meanings, ideas, and aspirations entwined in a particular practice (Shove et al., 2012: 14).



Figure - Elements of a practice (Spurling et al., 2013)

Of all elements of a practice, meanings are perhaps the most nebulous and challenging. Policy-makers might seek to provide green infrastructure (materials) – in the form of cycle lanes, cleaner energy, recycling, good public transportation etc – and education on how citizens use such infrastructure (competences). Yet according to practice theory, such efforts may prove inadequate unless social, emotional, cultural, and/or habitual factors – the *meanings* associated with a practice – are also addressed. In the case of China, compulsory garbage sorting was rolled out in 2017, but the emphasis on educating the public about “how to” instead of “why to” sort wastes has been criticised for weakening the policy’s impact (Wang & Jiang, 2020). The ‘meanings’ element is often unpredictable: some pro-environmental changes in practices have arisen because of changes in meanings that had little to do with sustainability. For instance, a project in Japan called ‘CoolBiz’, aimed at reducing office energy use from air conditioning, was successful because participants wished to conform with key role models, not because of engagement with the project’s motives (Shove, 2016). Similarly Tyers et al (2018) found that Chinese students reported using less energy and recycling more when they moved to the UK out of a desire to ‘fit in’ – a stronger impulse than any normative engagement with sustainability.

### 2.2 Disruptions to practices and behavioural spillover

Certain life-events may be opportunities to disrupt practices and lead to more sustainable outcomes. The ‘habit discontinuity’ theory suggests that significant life events like having a baby, or moving house can be ‘windows of opportunity’ for new habits to take hold (Carden & Wood, 2018). Verplanken and Roy (2016) found that an intervention promoting several pro-environmental behaviours was more effective among participants who had recently moved house, than those who had not. Walker et al (2014) found that office relocation positively disrupted workers’ commuting habits (driving less and using public transport more), but it took time for new habits to replace the old, and habits were vulnerable to relapse unless supportive ‘cues’ were kept in place.

Migrating to a new country is also a significant life event that can disrupt practices. Scholars of migration have examined what Reilly calls ‘stories of practice’ (2012) to understand how different migrants adapt their habitus to the new ‘field’ of their destination country, with varying degrees of intent and success (Bauder, 2005; Noble, 2013; Oliver & O’Reilly, 2010). International student migration will similarly involve significant changes to practices, but as students migrate for a limited time – usually between one and three years – any changes, positive or negative, might be vulnerable to ‘relapse’ after return. Yet despite being relatively short, a student’s time abroad can affect them for years afterwards. The impact of overseas study can be felt, most obviously, in their new qualifications, but also in transnational connections gained (Gu & Schweisfurth, 2015) and newfound opinions and values (Tarry, 2011).

The concept of behavioural spillover goes beyond the transmission of values, whether by migration or another phenomena, to the transmission of behaviours. Defined as an “observable and causal effect that a change in one behaviour has on a different, subsequent behaviour” (Galizzi & Whitmarsh, 2019, 2), spillover offers an intuitively appealing means by which behaviours can diffuse. In the environmental domain, spillover has been observed within ‘clusters’ of similar behaviours e.g buying one type of organic food product leading to the purchase of others (Juhl et al, 2017). It has also been observed between clusters, e.g. recycling leading to increases in organic food purchases and public transport use (Thøgersen & Olander, 2003), or ‘green’ consumerism leading to greater political support for environmental policies (Thøgersen & Noblet, 2012; Willis & Schor, 2012). Elsewhere, pro-environmental spillover has been observed between contexts, such as from work to home (Rashid & Mohammad, 2011) and between cultural/country contexts (Nash et al 2019).

Behavioural spillover research is mostly located within psychological studies, which often assume that individuals require the adoption of intrinsic pro-environmental values to motivate lifestyle changes (Nash et al., 2017). Theories of practice, derived from sociology, do not. “There is no requirement for change in social practices to be achieved for pro-environmental reasons or motivations” (Nash et al., 2017, 12). If all three practice elements change, lifestyle changes can duly follow. As seen previously, the desire to conform to social norms can shift practices towards more sustainable outcomes almost ‘by accident’ (Shove, 2016; Tyers et al., 2018). This paper examines whether such shifts can endure after norms or cultural contexts surrounding a practice change.

We might expect the environmentally-relevant cultural contexts of China and developed western countries such as the UK to be especially contrasting, and so migration between the two countries an interesting encounter within which to observe potential spillover. Particular metrics illustrate the contrast. According to the Environmental Performance Index, a global metric of government environmental protection policy (Hsu, 2016), the UK is ranked 12th and China 109th. In recent survey data, the UK population has greater levels of awareness and concern over climate change than China (Lee et al, 2015), although awareness and concern over climate change in China have been rising (Wang et al, 2017). In a qualitative study by Tyers et al (2018), Chinese students in the UK reported stronger pro-environmental norms in the UK, displayed both in general government and media discourses, and in everyday attitudes and behaviours of their peers, than in China. They also reported a desire to conform to these norms in some behavioural contexts.

Explaining where such norms emerge from is complex. Among attempts to model country-based cultural differences, Inglehart’s post-materialist thesis has evident resonance. Post-materialism suggests developing societies are more preoccupied with material values concerning physical sustenance and safety, and less concerned with pro-environmental (and other ‘post-material’) values (Inglehart & Abramson, 1994). Despite disagreement about the extent to which this is an empirically proven and universal thesis (see Running, 2012), post-materialism has had value in explaining differences between contemporary British and Chinese pro-environmental attitudes (Tyers et al., 2018). Using World Values Survey data, Hofstede’s six-dimensional model of country-based differences ranks China highly in the category of ‘power distance index’ (PDI) (Hofstede et al., 2010). High-PDI societies – such as China, Russia, and India – tend towards centralised, top-down control, whereas low-PDI implies greater empowerment of citizens (Branson et al., 2012). In terms of pro-environmental action, this may translate to citizens in high-PDI countries such as China deferring to the state to take responsibility on their behalf, whereas low-PDI societies like the UK prioritise individual responsibility. Qualitative accounts of pro-environmental attitudes China have emphasised reliance on government – not individual – action (Tyers et al., 2018), and tolerance of environmental problems as the ‘price’ of development (Nash et al., 2019). Others note how specific Chinese cultural traditions such as ‘guanxi’ (a desire for building interpersonal connections) and ‘mianzi’ (‘face’, or sense of favourable social self-worth) frustrate norms around sustainable consumption (Liu et al, 2018; Sun et al, 2014).

China-to-UK student migration is likely to be an important life-event that could disrupt environmentally–impactful practices, particularly given these two countries have very different pro-environmental social norms. No previous research has looked at the case of Chinese student migrants returning home, as this study does. This study is of value in expanding our understanding of the endurance of behavioural spillover generally, and of sustainable consumption in China specifically.

## Methodology

The main research question for this study is: “How does a period of living in the UK affect the pro-environmental attitudes and behaviours of a sample of Chinese students following their return?”

A qualitative research strategy was employed to address this question, for two main reasons. Firstly, prior to data collection there was no hypothesis of how participants would describe their pro-environmental attitudes and behaviours, nor if, how, and why those may have been affected by their UK sojourn. Secondly, many everyday practices are performed somewhat unreflexively (Warde, 2005). A qualitative, exploratory approach was thus necessary both to explore this under-researched area – with the possibility for developing and testing hypotheses in future – and to use discussion to probe into ‘hidden’ meanings and motivations underlying participants’ behaviour.

Focus groups and small-group interviews were chosen because they can facilitate investigation into how people construct collective meaning (Bryman, 2008, 474) especially when a focus group members share very similar characteristics or experiences, as was the case in this study. It is conceded that limitations exist in the use of focus groups, not least the reliance on participants’ recall, the emphasis on reported not revealed behaviours, and the possibility for a few voices to dominate discussion due to social and situational power dynamics (Ayrton, 2019).

Data was collected in China in May and June 2019 in the Eastern cities of Beijing (population 21.5 million), Shanghai (population 26.3 million), Hangzhou (population 9.8 million) and Ningbo (population 7 million). All are considered ‘Tier 1 or 2’ cities, seen as the most economically developed in China, with high levels of private and public sector innovation, international economic connectivity, and employment for graduates (Dychtwald, 2018), such as the participants of this study. These cities were selected as field sites as examples of affluent, urban and cosmopolitan Chinese society.

Participants were recruited through purposive, snowball sampling, via the author’s networks. All were Chinese nationals who had spent at least one year in the UK for full-time study and since returned to China. Participants in Beijing and Shanghai were members of the respective cities’ Alumni branch of the author’s host institution. Those two city branch presidents advertised for participants through their membership networks, using WeChat, China’s dominant social media platform. Participants in Hangzhou and Ningbo (plus two additional participants in Beijing) were recruited through the author’s contacts in each city, who advertised through their professional and social networks, again using WeChat. Potential participants were informed that discussions would relate to environmental issues and their time in the UK, and offered 100RMB to cover expenses.

A total of 42 participants took part (see appendix), most of whom studied at the author’s host institution, with the remainder having studied at other UK institutions. The sample cannot be claimed to be representative of the Chinese population, China’s community of students who have studied abroad, or even those who have studied in the UK. The sample is taken from a somewhat elite group, as less than 2% of Chinese higher education students study abroad (Gu & Schweisfurth, 2015). The sample is also likely to be skewed towards those with greater pro-environmental concern, which has been found to be higher among urban residents, those with higher income, higher education and those with communist party membership (Chiu, 2009; Liu & Leiserowitz, 2009; Xiao et al, 2013). The study utilizes a persuasive case study approach (Siggelkow, 2007) which cannot be used to prove a theory, but can be useful in illustrating and motivating readers to better understand and appreciate a particular theory (Datta & Gailey, 2012).

In terms of demographics, 25 of the 42 participants were female. Most were aged in their early thirties, with the youngest being in her early twenties having recently graduated from university, and the oldest aged in her fifties. Almost all were in full-time employment, mostly in white-collar positions in fields like IT, marketing, international trade, and education. Two worked for an environmental NGO, two ran their own businesses and one was an artist (see appendix).

The author acted as moderator. Interviews were conducted in English, lasted around one hour each, and were held in private rooms in cafes, except two which took place at participants’ workplaces. All participants could speak English to a relatively high standard as a legacy of language requirements for UK university study. In each discussion one near-fluent participant acted as an ad-hoc translator, if and when necessary. Discussions utilised an interview schedule, although conversations were allowed to deviate somewhat from this.

Regarding positionality, the moderator may have been considered an ‘outsider’ by participants, due to being foreign and a researcher. This outsider status might have allowed greater insight into participants’ experiences, by making the familiar seem strange. The moderator’s status as a UK national meant there was some shared experience with participants who had all lived there for some time.

Discussion transcripts were analysed thematically by the author using NVivo software. Initial thematic codes were derived from practice theory elements outlined above, such as ‘meanings’, ‘competences’ and ‘materials’. Following repeated analysis of the transcripts, further codes emerged as significant, these included ‘examples of spillover’, ‘barriers’ to spillover’, ‘consumption’, ‘cost’, ‘guanxi’ and ‘mianzi’.

## Findings

### 4.1 Examples of pro-environmental spillover

Most participants said their time in the UK had changed them in many long-lasting ways, many unrelated to the environment. For instance, the well-enforced smoking ban in the UK meant that some were far less tolerant of smoking indoors upon their return to China than before. Some said that, having got used to accessing English-language news outside the ‘great firewall’ of China, they habitually used Virtual Private Networks (VPN) apps since their return. Participants were asked whether examples of specifically pro-environmental spillover had occurred – i.e. whether behaviours adopted in the UK persisted after returning to China. Reported examples were rare, confined to recycling and plastic bag use. On recycling, participants said that the infrastructure for separating different types of waste, the understanding of how to classify it, and the strong social norms to do so were all present in their UK lives, thus meeting all the materials, competences and meanings elements which are deemed necessary for practice change. Especially powerful during their time in the UK was the desire to ‘fit in’ with peers and friends on campus, housemates, or homestay hosts, reflecting previous findings on the power of ‘memesis’ – the sub-conscious copying of peers’ behaviour (Tyers et al., 2018). Several participants expressed how peers explicitly or implicitly influenced their recycling behaviour.

“I think what surprised me was about the attitude, when I first arrived in the UK. Because at the early time I lived in a host family, and whenever I make the mistake of dividing or putting different trash to the bin, my host mum [would] say ‘you made a mistake!’”

(Female, Ningbo)

“I had a very close friend called Nicky; a student from the Czech Republic. I remember she was carrying an empty plastic bottle; she kept it for the whole day because she wanted to put it in the recycle bin. So, I was like, “Why are you still holding this big bottle? Just throw it away in the bin”. She said, “I want to put it in the recycle bin”. So, she kept it for the whole day; you can’t imagine a Chinese person doing that. I do better sorting now because I try to make sure this recycled stuff will be in better use in the future.”

(Female, Hangzhou)

Other participants said that reusing plastic bags for shopping became habitual during their time in the UK. It should be noted that China had an environmental mandatory charge on plastic bags in large supermarkets since 2008, before it was introduced in the UK. However, supermarket shopping is less prevalent in China and consumers are more likely to shop at small shops and stalls, where the charge is not mandatory. In the UK the participants were more likely to use supermarkets and therefore be exposed to the plastic bag charge.

“In China maybe I will use the plastic less. During that time in the UK it’s been the UK government [policy] to encourage people to pay for the plastic bags and then I try to use my own bags and then I, when I get to China I do the same. Yes, it’s like a habit now.”

(Female, Ningbo)

Participants showed that the will to conform with their peers in the UK did lead to instances of behaviour change in the UK, and in the case of recycling and plastic bag use, these persisted for some participants after return. However, such examples of spillover were less apparent than barriers to its endurance, as the next section explains.

### Group-specific barriers to spillover

Various barriers to spillover emerged from participants’ testimony, which may be divided into two groups: barriers specific to this participant group, and wider socio-cultural barriers. Group-specific barriers included the absence of peer pressure in China, a lack of infrastructural support, and differential costs for more sustainable consumption modes in China compared to the UK.

The influence of participants’ peers, which had often been a powerful motivation to recycle or reduce waste whilst in the UK, often dissipated once participants had returned to China and found themselves around people – family, neighbours, friends – far less inclined to behave in pro-environmental ways.

Male Participant 1, Beijing: “I think I’m getting back to Chinese behaviours, just like…okay, when I go to the supermarket, for some time, I took my bag, not the plastic bag, but now, it’s inconvenient, so I just…”

Interviewer: “So now you’ve stopped taking bags with you?”

Male Participant 1, Beijing: “Most of the time, I think because the environment isn’t like that here, all the people around me doesn’t like that.”

Male Participant 2, Beijing: ““What’s the point…?””

Male Participant 1, Beijing: “I have to be honest, like, sometimes I feel like that way, yeah.”

Just as Nomura et al (2011) found that residents were discouraged by knowing that their neighbours were not recycling much, similarly for these participants, seeing a lack of pro-environmental behaviour created a classic ‘free-rider’ scenario, weakening their own motivation to consume more sustainably.

A second barrier identified by participants was around infrastructural conditions – part of the ‘material’ element of practices. Infrastructure here refer to the systems of provision for recycling and transportation, both in the way such systems are organised, and the financial costs attached to them. Regarding recycling, as well as the disincentive of seeing free-riders not recycling, many participants also argued that either proper recycling bins weren’t available in China or, more commonly, that it just wasn’t worth separating waste because residential estate staff and/or public refuse workers would mix it up later.

“I think that the difference between the UK and China is the apartment waste bins in our flat. In the UK, they can put the kitchen waste into the kitchen bin, you know. And put the other things into the other bin. But we don’t have the same bins in China in our department building. So we just mix.”

(Beijing, female)

“I came back to China and I sort of tried to do recycling when I came home. But then I found out that the garbage carriages mix everything up so it’s totally like a waste of my time if I do that.”

(Beijing, female)

Recycling is a highly visible, routinized and domestically situated activity, subject to the power of social norms, and relatively easy to become habitual (Thomas & Sharp, 2013), yet the participants’ experiences suggested that even with the appropriate infrastructure in place such habits can quickly be broken, if they feel pointless.

Financial motivations also appeared to be a barrier to spillover, notably regarding transportation. Most participants said that in the UK they had opted to take buses, cycle or walk for most city-based transport. Taking taxis was highly unusual because they were deemed expensive in the UK. However, on return to China, some participants reported that they took far more taxis, because they are very cheap, especially using ‘Didi’– a Chinese app-based taxi-hailing company.

Female: Ningbo: “In the [UK] city I don’t spend on transportation but if I go back to China because there’s DiDi, so taking taxis is so cheap, so I just don’t take bus, I know this is not good but because it’s cheap. If it’s so expensive you think this money could be used in other ways, you just don’t spend but when you go to China or go other Asian country, Japan or Korea then you just waste your money on this because they’re fast”

Female, Beijing: “[Didi is] like, a new kind of taxi, so it’s just creating more cars on the road. I noticed that no-one takes the bus anymore. Recently I started to take the bus to go to work, it’s empty. Like… we have a bus lane, so it’s quick and it’s very cheap, and also environmentally friendly, but no-one takes it, it’s totally empty, serious, only me!”

Male, Beijing: “People just get more lazy because of Didi.”

Similar trends may be present in other countries where taxi-hailing apps like ‘Uber’ might stimulate, and not only meet, consumer demand. It is also likely that participants were less financially well-off as students in the UK, but as most were now working in China they could afford more expensive, less sustainable transport choices like cars and taxis. In the case of flying, many participants did say that they were less likely to use high-carbon domestic flights because of the recent expansion of high-speed trains, a phenomenon observed across China (Li et al, 2019). This choice of trains over planes for long-distance routes (e.g. Beijing to Shanghai) was due more to convenience and speed than concerns over the high carbon impact of flying, of which almost all participants were unaware.

This section has highlighted how differences in infrastructural provision and financial cost, and in peer support are factors which help explain why some sustainable modes of consumption were adopted in the UK, but did not endure after return to China. In the language of practices, the ‘meanings’ element – seeing sustainable behaviours as normal and desirable – appears especially powerful, yet transitory. Whilst relevant for return migrants, the following section highlights barriers with wider relevance.

### 4.3 Wider socio-cultural barriers to spillover in China

Participants also raised wider socio-cultural barriers to more sustainable modes of consumption, applicable more broadly to contemporary China. Some of these issues relate to comfort or convenience – like the use of online shopping or food delivery – which often precludes more sustainable behaviour, and can apply to many countries (Shove, 2003), not just China. But certain China-specific barriers emerged. These include the power of ‘mianzi’ and ‘guanxi’, media and government discourses, and an absence of post-materialist values.

Mianzi may be translated as ‘face’ – the desire to maintain favourable self-esteem and project an image of wealth and prestige (Sun et al, 2014). Many participants reported that they and their peers are likely to spend money on luxurious items such as high-performance, high-emission cars, and noted that the norms around such purchases were quite different in the UK.

Female 1, Shanghai: “People choose smaller cars in the UK. The size is smaller but here people prefer larger cars… I was very surprised in a good way that people, even though they are getting good pay, still go for smaller cars, I think it’s very environmentally friendly. That’s a very good thing for me… In China, if you are having more money definitely you’ll get a much bigger car. Sometimes you don’t even need that much size.”

Female 2: “Showing off.”

Female 1: “Maybe in some ways they regard it as a show-off behaviour but many people didn’t consider that maybe when they consider purchasing a car, they didn’t think of the environment.”

Similarly, participants also discussed the prevalence of second-hand clothing stores in the UK, in contrast to China, where second-hand clothing is a highly marginal market (Xu et al, 2014). Participants explained that buying second-hand items implies that someone is poor and unsuccessful, and hence reflect poorly in terms of ‘mianzi’. Concerns were also raised about the hygiene of wearing clothes previously worn by strangers.

“In England like I see a lot of like they collect old clothes and old other things, some charity shops and so second-hand things and I like them quite much because it’s cheap and the things are nice and in China when you want to buy recycled second-hand things it’s not easy. Most people feel that buying second hand things is not good, they have the impression that second hand things are cheap and dirty and low quality.”

(Female, Hangzhou)

Many participants said that a huge problem in China is one of waste, seen as a consequence of ‘guanxi’. Guanxi literally means ‘interpersonal connections’, the maintenance of which involves activities like sharing food or giving gifts (Sun et al., 2014). Many participants admitted that such activities are often unnecessarily ostentatious and wasteful but are perceived as vital to the maintenance of friendship bonds or the cultivation of professional networks.

“In China we really have a big get-together, lunch together or dinner, it’s quite lenient that if you can’t finish your food, you can take the leftovers. It’s a shame but people don’t really do it, it means ‘I’m poor, so give me some food’…”

(Female, Shanghai)

While these cultural norms have long existed in China, a more contemporary barrier relates to media and government discourses, and their relationship with individuals’ notions of responsibility. In line with wider survey findings (Lee et al, 2015), participants said that environmental issues, especially climate change, felt more salient in the UK than in China. This manifested itself in greater media coverage and/or more emphasis on environmental topics in conversations with their non-Chinese peers in the UK. Many said that before their time in the UK, they had not considered environmental issues in their own everyday activities and these were largely seen as problems for government, not individuals. Such views changed somewhat during their studies.

“Before I went to England, I didn’t care about the environment, and… when I was living there, read the news, or watched TV, there are a lot of environmental issues and western people worry about it. I thought maybe it is important and right now… maybe I didn’t know these issues before, but I’m continuing to watch it now”

(Female, Beijing)

The comparative lack of awareness of individuals’ potential for pro-environmental behaviour in China may relate to wider public environmental discourse in China. Two participants worked for a Chinese environmental NGO and observed that such NGOs have to be increasingly cautious about public-facing campaigns, especially since the introduction of a restrictive Foreign NGO Law in 2017 (Standaert, 2017). Instead, many NGOs focus on engagement with government and businesses. This was a topical theme, as in the time directly before and during data collection, the student-led ‘Fridays for the Future’ campaign was active in many western countries, and in Asian cities such as Seoul, Tokyo and Hong Kong. In mainland China, by contrast, this campaign was practically non-existent.

Female 1, Ningbo: “You know the students are doing protesting things, that would never happen in China, like they come out of school and they make a poster and here the parents would never allow this.”

Female 2, Ningbo: “Yeah, any protest is not possible at all.”

Female 1, Ningbo: “I think that is a big difference between China and UK because normal people in China, they don’t have the right to start this protest or event; it is illegal and they can put you in jail… We don’t have elections so politicians, they don’t have to win votes, so maybe that is the reason. In England, politicians would do a lot of things that they want to protect the environment and in China, they don’t have to.”

Others noted that while the government in China is making more public pronouncements on the importance of environmental protection, such messages are largely framed in terms of explaining or justifying policy, rather than emphasising citizens’ own responsibility. For instance, several participants specifically quoted President Xi’s mantra that “Green Hills and Clear Waters are Gold & Silver Mountains”: a commitment to environmental protection as a necessary foundation of China’s economic development. However, notwithstanding some relatively recent announcements by Xi and other high-level politicians on the importance of recycling and classifying household waste, there was little sense of a public discourse where individual behaviour change was strongly encouraged, in contrast to the UK, possibly reflecting wider observed differences in each countries’ PDI.

Finally, many participants said that China is not ready, at an individual or state-level, for rapid efforts at decarbonising their economy, because of the primacy of economic growth. Even among these relatively affluent participants, the environment was seen as a concern for developed ‘post-materialist’ societies (Inglehart & Abramson, 1994). Many participants said that China still needed to pull citizens out of poverty, and for the middle classes there were many sources of insecurity – employment, housing, children, caring for elders – which meant that environmental concerns were far down people’s list of priorities.

Female, Hangzhou: “Yes, the environment I think is a very luxury thing for Chinese people to think about”

Male, Hangzhou: “Most people are still struggling with their life and to secure their life. Even for people like us, we have stable jobs and have some savings, most of us are still worried and what if some traumatic or society changes happens in ten years and we’re all unemployed and cannot afford things. So, I think still people – most people are still worried more about these things.”

Facilitator: “Do you think people still feel insecure?”

Female, Hangzhou: “Very much. Especially in the emerging new middle class, yes.”

Another participant suggested that environmental degradation had been seen as the ‘price’ of China’s development, echoing the findings of Nash et al (2019), and noted that while there was a growing realisation of the need for radical changes in behaviour among China’s vast population, that change would be slow and – perhaps like other parts of the world – might require motivation by an environmental ‘shock’.

“Sixty years [ago] we were farmers, we came from really poor state, so we had a lot of development in the past forty years. Now we’re at a stage where we care more about how much we can spend, not about other things… it’s like in the UK in the Industrial Revolution. You guys didn’t care about the environment too… But everything takes time, you have to get hurt to change. You have to see the ugliness, the dirty things, to make yourself change.”

(male, Shanghai)

## Discussion and Conclusion

This paper found that in a sample of Chinese participants, instances of pro-environmental behavioural spillover following a period of study in the UK were rare, limited to recycling and reduced plastic bag use. Barriers to spillover were identified. Firstly, group-specific barriers: crucially, a loss of peer support for pro-environmental behaviours, plus a perceived lack of infrastructural support for them, and differences in financial cost which made less environmentally-friendly transport options more appealing in China. In terms of practice elements, the meanings which supported more pro-environmental practices which had been present in the UK, largely disappeared following return. This appears to be the crucial difference, even when supportive material or competence elements – e.g. around re-using plastic bags or recycling – were still present.

Secondly, wider cultural barriers to sustainable consumption were identified: the Chinese cultural traditions of ‘mianzi’ and ‘guanxi’ which act to increase high-carbon consumption and waste, a lack of perceived individual responsibility for environmental protection derived from prevalent government and media discourses, and an absence of post-materialist values.

In terms of the research question posed, participants did display some change in pro-environmental attitudes after return, but these did not translate into behavioural change in a meaningful, enduring way. These findings have implications for pro-environmental behavioural spillover and practice theory. Previous accounts of spillover have suggested pro-environmental behaviour in one domain can beget pro-environmental behaviour in another domain or cultural context due to a desire for internal consistency (Thøgersen, 2004), an increase in one’s perceived efficacy (Thøgersen & Noblet, 2012) or a ‘greening’ of one’s self-identity (Lauren et al, 2019). But according to theories of social practice, practices can change without any such psychological processes, and change can arise from a basic yet powerful desire to conform to social norms. However, the weakness of relying on social norms is that they can disappear just as quickly as they appear, as seems to have been the case with this group of Chinese graduates following their time in the UK. Although participants noted improvements in practices involving recycling and domestic energy use during their stay in the UK, such improvements did not endure after their return to China, and perhaps did not become truly habitual. As Walker et al (2014) note, “as well as a “window of opportunity for change,” a discontinuity also introduces a “window of vulnerability to relapse”—a certain amount of time during which the new habit is not fully established and the old habit is not fully extinguished, meaning people might easily revert to their old behaviour in the presence of appropriate contextual cues.” (2014, 1100). As student migration is (usually) temporary, it is likely that any pro-environmental practice changes which occur in the host country are vulnerable to relapse, when migrants return to a source country with weaker pro-environmental social norms.

This study has limitations, particularly in terms of its relatively small sample, limited to a few cities in China. Given the diversity in such a large country, it is possible that similar participants in other Chinese cities or rural areas may display different attitudes and behaviours. It is also not possible to disaggregate the sample in terms of the level of interaction/integration with peers during their sojourn, their field of study and other factors which could potentially affect their level of exposure to environmental awareness and pro-environmental social norms. Future research into the field of behavioural spillover among student migrants would ideally use a wider and more representative sample, and ideally employ longitudinal methods using before/after surveys or diary methods.

Despite these limitations, the findings of this exploratory study do suggest that specifically Chinese socio-cultural barriers need to be addressed advocates of pro-environmentalism in China. The enduring power of ‘mianzi’ and ‘guanxi’ in contemporary Chinese life may likely frustrate efforts to encourage more sustainable consumption. Similarly, the lack of post-material values, and the reliance on top-down state action rather than individual action, is likely to weaken pro-environmental concern, motivation and efficacy among citizens. While there is an argument that liberal democracies’ (over-) emphasis on individual responsibility for tackling environmental problems is an exhausted or even ‘failed paradigm’ (Chen & Lees, 2018), it remains the case that changes to individual consumption behaviour are unavoidable if we seek to constrain environmental impacts within acceptable limits. Following a period of unprecedented economic freedom and wealth creation, it remains to be seen if China’s emergent middle classes are ready, willing, or capable to make such changes on an appropriate scale. Unless state and media discourses move beyond a ‘top-down’ policy narrative and create a sense of individual responsibility, urgency, and agency – thus far absent according to participants’ testimonies here – that may be unlikely.

Looking forward, participants noted that in some Chinese cities including Shanghai, public authorities have trialled schemes aimed at increasing recycling through the ‘social credit’ system. In these trials, individuals who recycle incorrectly are penalised by reducing their social credit score, meaning that ‘offenders’ have access to services like getting bank loans or buying train tickets temporarily suspended (Kuo, 2019). The extent to which this form of environmental authoritarianism is deemed acceptable and effective may point to a very different model of pro-environmental behaviour change policy than that seen thus far in western liberal democracies. In any case, if and how China fosters sustainable modes of consumption will be of critical importance to global efforts at decarbonisation.

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**Data set**

Data can be accessed here <https://reshare.ukdataservice.ac.uk/854064/> .

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2. This paper employs a definition of sustainable consumption which, borrowing from the Brundtland Report’s definition of sustainable development, “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987). Pro-environmental behaviour is defined as that which seeks to minimize the negative impact of one’s actions on the natural and built world. Pro-environmental attitudes are understood as a combination of environmental awareness, knowledge and concern. (Kollmuss & Agyeman, 2002) [↑](#footnote-ref-2)