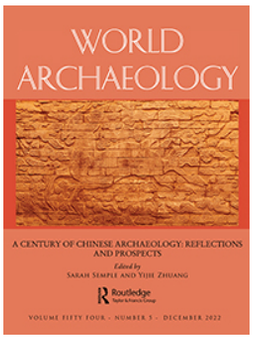

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Theory and methods of settlement archaeology – the Chinese contribution

Anke Hein

School of Archaeology, University of Oxford, Oxford, UK

ABSTRACT

On the international stage, discussions on theoretical and methodological aspects of settlement archaeology tend to be dominated by Anglo-American scholarship associated with the emergence of the New Archaeology's systemic view of culture and its ecological outlook in which settlement pattern analysis became a crucial approach. Few people are aware that a scholar of Chinese origin, K.C. Chang, contributed substantially to these debates already since the 1950s and introduced western practices of settlement archaeology to China in the 1980s. Since then, numerous international collaborative projects in China have provided a fruitful basis for an exchange of ideas between different scholarly traditions and providing opportunities for methods developed in the West to be tested in a different cultural and environmental context. The present paper traces these developments, highlighting the extent of the Chinese contributions and concluding with some thoughts on the standing of Chinese archaeology within the field of archaeology worldwide.

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Introduction

When it comes to settlement archaeology, archaeologists around the world face similar issues, including practical aspects of fieldwork and conceptual issues of data interpretation. What is a site? Which methods of fieldwork and data analysis enable archaeologists to gain a deep understanding of entire regions? How can the spatial distribution of the material remains reflect socio-political developments, socio-economic processes, and socio-cultural practices? How can all of this be achieved within practical constraints of limited time, funding, and personnel?

On the international stage, discussions on theoretical and methodological aspects of settlement archaeology are largely dominated by Anglo-American scholarship going back to the 18th century (Lock 2009, 171). These beginnings were systematized in the 20th century, mostly in the wake of New Archaeology's systemic view of culture and its ecological outlook. Combining archaeological, ethnographic, and environmental data allowed scholars working in the Americas to study changes in settlement sizes in relation to landscape carrying capacities and other environmental factors to make suggestions on demographic patterns, settlement hierarchies, and the development of complex socio-political organization (e.g. Willey 1974).

Most people are not aware that a scholar of Chinese origin, Kwang-Chih Chang, contributed majorly to the development of settlement pattern studies in the US by arguing for the importance

CONTACT Anke Hein anke.hein@arch.ox.ac.uk Institute of Archaeology, 36 Beaumont Street, Oxford OX1 2PG, UK

not just of environmental but also societal factors (Chang 1958, 324). Chang (1968, 7) postulated that settlement patterns consist of both a 'microstructure' – the 'culture and social structure of a settlement' – and a 'macrostructure' – the 'larger cultural and social system'. Having been trained in Mainland China, Taiwan, and the US, Chang's views were informed by practices and materials from East and West, and he contributed to settlement archaeology in both spheres. At Yale and Harvard, he trained students who became influential in the further development of archaeological theory and in the archaeology of East Asia. Based on Chang's macro/micro approach, his student Trigger (1958) developed a model of three analytical levels (household, site, region) that ultimately came to be widely adopted. In the late 1980s, Chang (1986) introduced western practices of settlement archaeology to China via talks and publications and by conducting fieldwork at Shangqiu. Survey work has been at the core of this and other international collaborative projects, enabling an exchange of ideas between different scholarly traditions and providing opportunities for testing western methods in a new context. To understand the extent of the Chinese contribution in particular in terms of survey methods and subsequent data interpretation, this paper traces the development of research in China with an emphasis on international collaborative projects which have served as a conduit for scholarly exchange. Given the large amount of work that has been done and the limited space available, this paper does not aim to provide a comprehensive overview of all settlement research conducted in China, nor can it list all the details and publications coming out of each of the projects mentioned. Rather, the paper focuses on one specific approach to gaining settlement data, namely archaeological field survey, and how the work conducted in China and with material from China has been contributing to broader global debates on methods of and approaches to settlement archaeology. The focus is on international collaborative archaeological survey projects as these have provided particularly fruitful opportunities for discussions between scholars from different backgrounds as well as visibility of the results beyond China and Chinese archaeology. After discussing these issues and the Chinese contributions, the paper concludes with some thoughts on the standing Chinese archaeology within the field of archaeology worldwide.

Settlement pattern studies in China

Possibly the first settlement site on the Chinese mainland to be excavated systematically to gain insights into socio-political organization was the Neolithic site of Banpo (Zhongguo 1963). Around the same time, historical geographer Shi (1963) studied settlement distributions on a regional level, paying particular attention to ecological factors, however, such regional-level projects remained limited. Chang's (1960) PhD dissertation on prehistoric settlement patterns in China remained unpublished and the political situation at the time prevented communication with colleagues in the PRC, thus limiting the impact of his work. In 1984, Chang introduced principles of American settlement archaeology to China during a lecture at Peking University. The talk was published (Chang 1986) and inspired further settlement research in China. Yan (1989) compared Neolithic settlements across China, Wang (1988) investigated the distribution of Neolithic sites along the Yellow River in relation to the natural environment, and the Hulu River Valley Project highlighted the close relationship between changes in settlement distribution, population density, and environmental factors (Li, Shuicheng, and Tao 1993). The focus remained on ecological questions, though, while the socio-political implications emphasized in Western literature remained relatively unexplored, as did survey methods.

Surveys had been conducted for decades but with the aim of locating specific sites mentioned in historical texts or as a follow-up to chance discoveries and rarely in a systematic manner. Since the

1980s, three nation-wide 'cultural relics' surveys have been conducted with the aim of recording all sites across China, but given the significant size of the task, this has been undertaken opportunistically rather than via comprehensive methods (Liu and Chen 2001). Especially in recent years, there has been much critique regarding the use of published settlement data derived from opportunistic surveys as they tend to favor large sites in low-elevation regions close to modern settlement and other easy to reach places deemed to have been desirable for agricultural settlements (see, e.g. Jaffe and Hein 2020; Jaffe et al. 2021). This means that the underlying assumptions go unchallenged as places such as high-elevation locations or more remote areas often go unchecked (see d'Alpoim Guedes and Hein 2018 for a counter-example and its results). The dating of sites recorded in these large-scale non-intensive survey projects is mostly based on ceramic typochronology, using rough chronological intervals (Jaffe and Hein 2020). There is the added – and much debated – issue of how well surface remains represent the date range of the site underneath and of how well surface areas represent actual site size. For instance, the alluvial history of the North China Plain has either eroded or buried archaeological remains, making the results of surface surveys problematic both in terms of site size estimates and site discovery (Qin et al. 2022). There have thus been repeated calls for 'systematic full-coverage regional surveys with refined chronological control' (Liu and Chen 2001, 7). These calls have been answered within international collaborative projects (mostly with US institutions) which aim to introduce and test Western archaeological methods in China. These projects have been important pathways for the integration of Chinese scholars into global debates on settlement archaeology and field research methods.

Early states and silt deposits

Given the preoccupation with social complexity and early civilization on the Western side and the Chinese interest in exploring the emergence of the earliest Chinese states, the first regional survey projects focused on the Central Plain which was home to the earliest dynasties. Chang initiated the Early Shang Civilization or Shangqiu project in 1988, but work began only in 1991, due to Chang's ill health under the leadership of his former student Robert E. Murowchick in a Sino-American team (Murowchick and Cohen 2001) (for all project locations see Figure 1). The Shangqiu region is traditionally believed to be the homeland of the Shang Dynasty, but due to the significant silt deposits, detection of sites via surface survey is difficult. Shangqiu thus became a testing ground for the newest remote-sensing methods using satellite imagery, military maps, and various geophysical methods (Jing and Rapp 1998). This was the first time for most of these techniques to be employed in China, and the project trained both China- and US-based scholars. Additionally, various coring techniques were explored: Dutch auger, Luoyang spade (a tool of Chinese tomb robbers that archaeologists have adopted), and percussion ring (Jing, Rapp, and Gao 1997). The results showed that a combination of remote sensing and intensive coring were effective in detecting buried sites on the floodplain and studying stratigraphic sequences. The project also discovered a large walled Eastern Zhou city but – due to its location 12 m underground – it was impossible to assess if there was a Shang predecessor underneath, showing the limitations even of remote sensing in this landscape.

In 1997, the project ceased due to funding issues, but the results were published in English and Chinese, and many participants later conducted similar work elsewhere, for instance at the Shang city of Yinxu. The site has been under excavation since 1928, but the regional context was poorly understood. An international collaborative project initiated in 1997 combined archaeological and geomorphological studies, remote sensing, and geospatial analysis to reconstruct the development

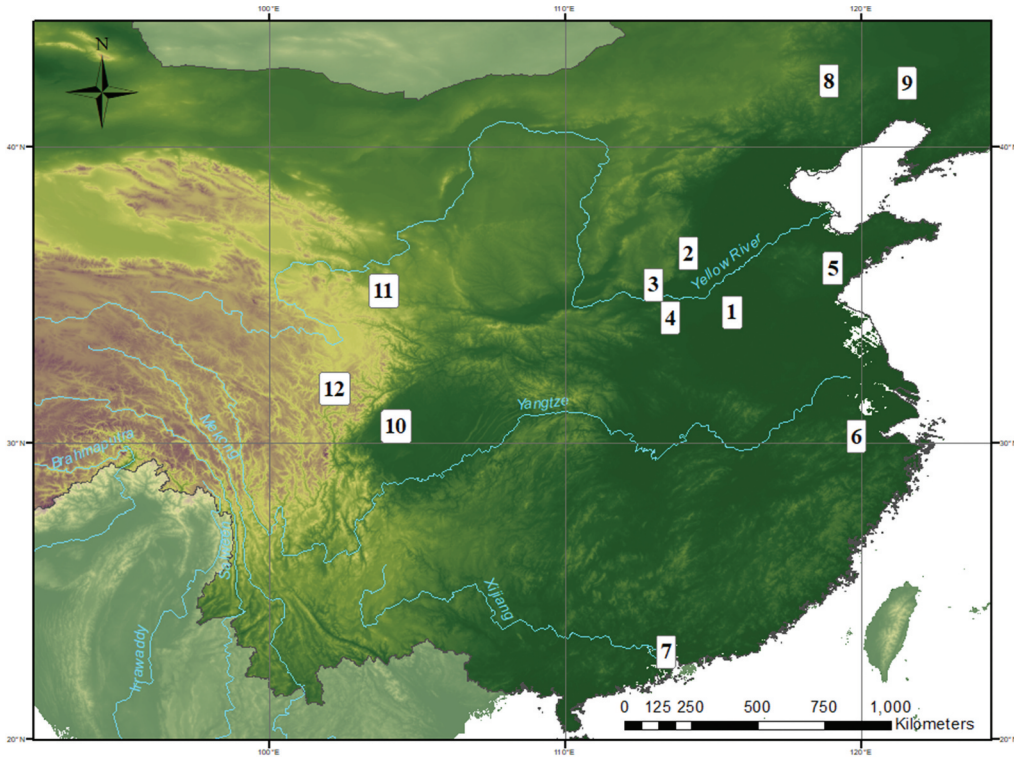

Figure 1. Locations of projects mentioned in the text: 1. Shangqiu, 2. Yinxu, 3. Yiluo River Valley, 4. Zhudingyuan, 5. Rizhao, 6. Liangzhu, 7. Xinghua Basin, 8. Chifeng, 9. Fuxin, 10. Chengdu Plain, 11. Tao River Valley, 12. Ngawa Prefecture.

of the physical landscape and past settlement patterns (Zhongmei 1998). Here, too, the sites were deeply buried, and intensive coring leads to the discovery of a major Shang walled site, Huanbei Shangcheng (Tang, Jing, and Rap 2000).

The Yiluo project, launched in 1997 in the Central Plain as an international collaborative project between Chinese, Australian, and US partners, took a longue durée approach that aimed to trace socio-political developments from the Neolithic to the Zhou. Full-coverage survey, geoarchaeology, paleobotany, and object analyses were combined to trace changes in population, environment, land use, agriculture, and craft production (Chen et al. 2003; Liu and Chen 2007). In some cases, subsurface coring was conducted. Liu and Chen (2007) suggested a four-tiered settlement hierarchy indicative of an early state that emerged preceding population pressures, meaning that – contrary to earlier Western models – population increase was not necessarily the reason for the emergence of the state but could result from it (Zhongguo and Zhong-Ao-Mei 2019). Yiluo was thus a fruitful testing ground for theories developed elsewhere. It also inspired exclusively Chinese teams to conduct surveys using a similar approach, such as the full-coverage regional survey program conducted in Zhudingyuan, Henan (Henansheng 1999). The team suggested a three-tiered settlement hierarchy and challenged the long-held view that Yangshao-period society was egalitarian, thus showing again the potential of systematic regional survey to test existing models. Fieldwork on the Yiluo project itself was finished in 2007, but an extensive 4-volume project report was published in 2019 (Zhongguo and Zhong-Ao-Mei 2019) which has an entire chapter (Chapter 3) describing the

fieldwork methods and another chapter reflecting on the methods of data analysis (Chapter 4). While the publication is technically bilingual, only the main conclusion chapters are in both English in Chinese and the others are exclusively in Chinese, thus not realizing the full potential for international discussions. The next years will show, however, if and how the methods used in the Yiluo project may inspire future projects in China, be they international collaborative or conducted by exclusively Chinese teams.

Model-testing outside the Central Plain

Another student of Chang's, Liu (2004), modelled the development of complex societies in Neolithic northern China based on analytical methods developed in American settlement archaeology such as catchment analysis, settlement hierarchy and rank-size rule combined with social evolutionary models. Initially, Liu had to rely on non-systematically gathered survey data and excavated materials. This changed in the mid-1990s, when the Sino-American Rizhao project started conducting full-coverage systematic surveys in the Yellow River Valley. The project studied not only social formation but also craft production during the Neolithic Longshan period based on a combination of survey, excavation, and technological analysis (Underhill et al. 1998). One of the goals was to test if Liangchengzhen was the center of a settlement hierarchy as previous studies had suggested. The survey thus started at Liangchengzhen, gradually radiating outwards. For practical reasons, the transects followed natural landforms and anthropogenic structures, and of the ceramic finds only a selection of pre-Han material was kept (Underhill et al. 1998). These decisions introduced a certain amount of bias, however, in a place so rich in ceramic material, collecting everything was impossible.

Rank-size analysis suggested a four-tiered settlement system which according to socio-evolutionary models would indicate the presence of a state-level society already during the Neolithic Longshan period which had previously been classified as a 'chiefdom-level society' (Liu and Chen 2001, 14). The site-size and population-size estimates are, however, debated. Liu (2004) used estimated catchment areas for each central place and suggests population sizes based on the number and size of settlements, while Fang et al. (2004) relied on sherd density. Methods of population size estimates and their underlying assumptions are generally problematic. For instance, functional size of a settlement is not necessarily directly proportional to its population size, and the validity of central place theory depends on context (Johnson 1977). Furthermore, a linear treatment of survey data is problematic as conditions vary greatly over time and space (Ammerman 1981, 77). A further problem lies in the assumption of site contemporaneity. At Rizhao, most sites could only broadly be assigned to the Longshan period which stretches from 3000 to 1900BCE (Bennett 2002, 81). Observations on trends in settlement pattern development over time are thus tentative.

What such patterns mean is yet another issue. In the 1970s through 1990s, scholars mostly discussed which number of tiers of settlement hierarchy correspond to which type of social organization. It was observed that there seemed to be a general correlation between social organization, tiers of settlement hierarchy, levels of administrative hierarchy, and population size (Earle 1991, 3; Wright 1986, 389). Johnson proposed that the presence of a settlement size hierarchy could be indicated by breaks in clusters of site distribution in site-size histograms (Johnson 1977). However, Flannery (1998, 16) pointed out that administrative hierarchy and settlement hierarchy are not synonymous. Furthermore, there has been considerable debate on how many tiers indicate what type of social organization (Carneiro 1970; Flannery 1998; Johnson 1977; Wright 1986). Throughout this debate, the social categories and borders originally adopted from the model of cultural stages developed by Elman and Service came to be increasingly more loosely defined. The

many unanticipated findings made during regional surveys and the considerable local variety discovered have reiterated the point that general evolutionary schemata are difficult to apply (e.g. Blanton et al. 2005; Willey 1968). Furthermore, since the late 1990s and early 2000s, cultural-evolutionary models themselves have come to be heavily criticized as ahistorical, colonialist, and ethnocentric, given that they assume that all cultures develop along the same lines as observed in the European context (Ferguson 2008). While cultural anthropologists have turned their back on cultural evolutionism and focused on localized case studies, archaeology has seen a resurgence of interest in (cultural) evolutionary models (Mesoudi, Whiten, and Laland 2006).

Since the 1990s, material from China helped question the assumptions underlying cultural evolutionary theories and models of social complexity. Definitions of concepts such as state and city, their role in pre-modern societies, and their material traces are constantly being challenged. There have been debates regarding the timing and nature of urbanization in China, focusing in particular on the Shang period cities of Zhengzhou and Anyang in Henan. Scholars have suggested various models such as city states, segmentary states, territorial states, and village states (summarized in Liu and Chen 2003). More recent work based on an economic definition of urbanism based on the production and distribution of goods following and comparing the Chinese material with research by Wright on early Mesopotamia has suggested that the earliest cities in China may have emerged much earlier (Liu 2006). Based on survey and excavation data as well as an analysis of indicators for craft production, Liu (2006) has suggested that early urbanism in China may have resembled that observed in both Mesopotamia and Mesoamerica, where both urban and rural areas played their part in the development of early states. Other scholars have defined cities based on the meaning of the etymology of the Chinese word for city (chengshi) whose first part (cheng) means 'wall'. They have thus focused on walled and/or otherwise fortified sites, arguing that some of the Neolithic Yangshao sites can be addressed as cities (Yan et al. 2021). Others again have focused on socio-political organization and legal status, arguing that – in contrast to much of the western world – political legitimacy in China was not based on controlling a specific location but conducting specific rituals and that even central administrative locations were long impermanent, and larger sites were not substantially different from surrounding areas in a legal, administrative, or social sense (Falkenhausen 2008). According to that line of argument, even the large late Shang sites were thus at most city states, while cities in the legal and economic sense emerged only in the Zhou period (771–221 BCE) (Falkenhausen 2018). The archaeological settlement data from China have thus contributed significantly to international debates on the emergence and nature of urbanism more broadly speaking, with a recent publication focusing on Chinese material suggesting to see urbanism as a form of technology (Flad 2018).

Furthermore, Large Neolithic sites such as Liangchengzhen in Rizhao or Liangzhu in the Yangtze River Valley with its impressive hydraulic structures challenge assumptions about socio-political developments in international discussions (Renfrew and Liu 2018). For instance, recent survey and excavation work has shown that Liangzhu site comprised not only a cemetery with rich jade-carrying graves and associated ritual structures but maybe more importantly a large fortified settlement with well-engineered dams for flood control and an intricate irrigation system, making it the earliest example of water engineering in China dating to about 5,100 years ago, much earlier than previously thought (Liu et al. 2017). It is remarkable for its considerable size which makes it one of the largest examples of hydraulic engineering observed archaeologically anywhere in the world (Liu et al. 2017). The material from Liangchengzhen reflects an urbanization process very different from that observed in other parts of China during the Neolithic, with a unique internal settlement

organization and different housing structures as well as a diversification of various types of production in localized ways yet connecting to a larger market reaching far beyond the site itself (Underhill et al. 2021). With their location outside the Central Plains, the large sites of Liangchengzhen and Rizhao furthermore shake old mono-centric stories of the emergence of Chinese civilization, suggesting complex patterns of development involving multiple regions and communities (e.g. Underhill et al. 1998, 468). Surveys and excavation work conducted in Lingnan, Southeast China, have likewise provided evidence for unique, localized developments quite independent from the Central Plain and revealing patterns of settlement organization and subsistence practices much more diverse than had been seen elsewhere in China. Such observations were made, for instance, in connection with an early international collaborative project in the 1990s in Guangdong (Allard 1994, 1996), and they inspired recent paleobotanical work exploring the broad range of different ways of living in the subtropical climate and lush nature of southern China (e.g. Chi and Hung 2008).

Testing survey methods in the northern zone

Archaeological research in the Chifeng region, Inner Mongolia, commenced in the 1920s, thus providing much data for regional settlement studies (Chifeng 2003, 102). Using published materials and new survey data, Shelach (1999) aimed to reconstruct social, political, and economic processes during the Bronze Age. Trying to balance scale and accuracy, he conducted complete-coverage surveys in some areas and sampled others. He ran into the problem of coarse local chronology but assumed contemporaneity of sites to allow for statistical analyses. His sketch of prehistoric sociological processes in northeast China thus remained preliminary, but it already showed a complex picture that challenged core-periphery models and promoted 'a dialogue among Chinese and Western archaeologists' (Shelach 1999, xi). This dialogue developed further within the Chifeng International Collaborative Archaeological Project conducted by scholars from China, the US, and Israel commencing in 1998 that aimed to trace independent trajectories towards complex social organization (Chifeng 2003, 97).

The survey built on Shelach's work, combining full-coverage and sampling strategies. It also collected historic-period material, covering over 2000 years of local history. The project is also noteworthy for taking an experimental and self-reflective approach to survey methodology, investigating differences in survey results between individuals and locations, conducting geomorphological work and test excavations to study post-depositional processes and reconstruct landscape changes, and adjusting site definitions based on local realities (Chifeng 2003). Maybe most remarkably, the bilingual project publication speaks frankly about disagreements on methods between Chinese and Western team members. Major issues included definition of sites, the influence of human actions and post-depositional processes on distribution patterns, and assumptions underlying rank-size analysis and population estimates (Chifeng 2003, 97–173).

Despite adjustments of site definitions and studies on postdepositional processes, some of the Chinese team members remained skeptical of the possibilities of survey work, arguing that 'by whatever method, the practice of collecting surface materials is inherently suspect because we cannot determine exactly what processes brought them there' (Chifeng 2003, 90). They also pointed to the uncertainty of length of occupation span, especially in regions like Chifeng where similar pottery types were used over long periods, making fine-chronological subdivisions in the absence of stratigraphic observations impossible. Instead of relying exclusively on collection units or surface artifact densities, both were thus combined into a period-by-period demographic index that served

as a basis for graphic representations of settlement distributions, though the results remained tentative.

Overall, the Chifeng project shows that many aspects of survey methodology have to be decided on site and after some experimentation and that resulting publications should make any underlying assumptions clear. Furthermore, having a constructive dialogue between scholars from different traditions can help greatly with identifying underlying assumptions and their issues. While not offering final answers to long-discussed methodological problems, the Chifeng project thus stimulated 'a wide-ranging discussion that does not take for granted even the most basic assumptions underlying regional analysis in archaeology' (Chifeng 2003, 173).

The Fuxin Regional Archaeological Project (2011–2016) by the same core team built on the insights from the Chifeng project focused on the transition to sedentary agriculture and the emergence of early complex societies (Teng et al. 2014). The project experimented with new ways of find recording on site via photogrammetry, used predictive modelling for archaeological site location, and presented all material in an open-access format online, making this a rare case where data from China are easily accessible for further research (Shelach-Lavi et al. 2019). The results of the project provide a counterexample to the widely held assumption that plant cultivation was the result of pressures on the subsistence system, suggesting on the contrary that 'sedentism and plant cultivation in northeast China emerged ruing affluent conditions' (Shelach-Lavi et al. 2019). This project is thus another case where material from China – and in particular from regions outside the Central Plain – helps test and rectify long-held assumptions.

Diverse narratives of Western China

In some ways, survey work in the northern zone is fairly straightforward. The land is largely flat, has limited low-level vegetation, and thus excellent visibility. By contrast, Southwest China is characterized by a combination of rugged mountains and alluvial plains with heavy rainfalls and lush vegetation. Multiple crops of wetland rice make archaeological survey work a challenge year-round, as do the extreme steepness of the mountains and the long settlement history of the plains and river valleys combined with flooding events and earthquakes leading to much landscape modification.

The Chengdu Plains Archaeological Survey (2005–2011), an international collaborative project between several Chinese and US-based institutions, braved some of these issues. Like the Chifeng project, it examined trajectories toward complexity outside the Central Plain and explored how survey work can be conducted in a challenging environment. Based on the topic of the project and time limitations, the focus was on pre-Han remains. In response to poor ground visibility, pedestrian survey was combined with systematic augering, geophysical survey, and test excavations. Like at Shanqiu, various types of coring implements were tested, noting differences in the usability of implements developed for different soils. The project also experimented with geomagnetic methods, ground-truthing observations made by gradiometer via test excavations (Flad et al. 2013). Simultaneously, the project helped test the method on new terrain and trained young researchers in its use. The final project publication is forthcoming but will be a bilingual volume co-authored by team-members from China and the US, discussing methods as well as results (pers. communication Rowan Flad).

The insights gained here have been applied to other projects in western China including the Tao River Archaeological Project (TRAP) and a project on Human Responses to High Altitude Environments on the eastern rim of the Tibetan Plateau, both international fieldwork projects that

no longer focus on issues of social complexity but take a broader human behavioral approach. The latter project conducted survey work in the mountains of southwest China (more specifically, Ngawa Tibetan and Qiang Autonomous Prefecture), facing high altitude, steep slopes, thorny vegetation, a rough local chronology, and assumptions that sites would be restricted to river valleys (d'Alpoim Guedes and Hein 2018). Surveying also higher altitudes, collecting all finds regardless of assumed date, and conducting absolute dating, the project established human activity at up to 3,300 masl over several thousand years. Additionally, geomorphological methods were used to explore landscape changes over time (Schmidt et al. 2022). It became clear that a combination of natural and anthropogenic processes had made this high-altitude environment habitable during the Neolithic rather than only in the modern period as previously assumed. The ongoing project thus questions the label 'marginal environments', helps counteract environmental determinism, and changes narratives about areas outside the centers of early civilizations.

Albeit focusing on a fertile and relatively easily traversable region long known to have been inhabited for millennia, the TRAP project also faces issues of landscape modification. This includes the deposition of windblown sediments of the northern Loess Plateau and its erosion via alluvial processes as well as human intervention such as levelling of terraces or the movement of exogenous fertile soil onto exhausted fields. These issues are met by TRAP with a combination of historical information, full-coverage survey at previously identified sites, geophysical survey in areas of find-concentration, and test excavations in places suggested by the geophysical work (pers. participation). The aim of TRAP is quite different from that of traditional settlement surveys, though, moving away from settlement hierarchies and models of social complexity and focusing instead on communities of practice, more specifically technological traditions. Technology in this case is broadly defined, including craft and subsistence practices, studying them to understand how lives of people in Northwest China changed over time from a longue durée perspective (Womack et al. 2019).

Settlement archaeology revisited: contributions from and to Chinese archaeology

Theoretical debates on social evolution and early states used to omit Chinese material, partially due to language barriers, partially due to differences in theoretical outlook perceived as a 'lack' of research applying anthropological models to Chinese material (Shelach 2001, 22). Over the last two decades, the increasing number of English-language publications on Chinese archaeology and especially the collaboration between Chinese and foreign scholars have created multi-lateral dialogues that have helped question long-held assumptions and old models.

It is by now clear – in part thanks to research on Chinese material – that socio-evolutionary models and some of the methods of settlement pattern analysis built on them are problematic. Nevertheless, projects designed with such models in mind produce a large amount of multi-valent data that can be re-examined with a variety of methods. While a major interest in the early states remains, increasingly, more projects focus on areas previously seen as peripheral, tracing local histories. The studies in the Central Plains also have shown more diverse developmental patterns than originally assumed. As discussed above, recent research has turned away from a focus on early states and social complexity (long central to both settlement pattern studies in the West and archaeological research in China), developing new location- and community-driven narratives. This approach has proven to be hugely successful, producing large amounts of fine-grained data that allows scholars to understand local developments that – when viewed together with and connected to local developments in other regions – allow for reconstructing broader developments over larger regions. At the same time, comparative research between different regions researched in

this in-depth manner provides a great opportunity to question long-held assumptions about general patterns of human behavior and societal developments over time, thus improving our understanding of the human condition at large.

China has proven a valuable testing ground for methods of field research. The projects introduced above have demonstrated the necessity for simultaneous investigation at various levels combining remote sensing, pedestrian survey, (random) sampling, (test) excavation, and ideally a variety of scientific applications including geomorphology, paleoenvironmental research, absolute dating, and various types of artifact analysis. Preferably, all data would be made freely available for further analysis. There are naturally always constraints that prevent ideal study scenarios, be they limitations in funding, time, workforce, permits, or storage space. Projects in China have found creative solutions that can be adopted elsewhere, be it the research on thickly layered alluvial environments of the Yellow River Valley, the lush vegetation of the Chengdu Plain, or the steep slopes on the rim of the Tibetan Plateau. At the same time, particularities of local environments are not merely limiting but can also help rethink perception of landscapes in terms of traversability and habitability, as the work in supposedly 'marginal' parts of China has shown.

It has also become clear that while detailed research plans need to be made beforehand, there is a need for experimenting and adjustment, especially in international projects led by a team of people from different academic backgrounds and in an area that may not have undergone systematic survey-work before. Some problems and their solutions may be localized. Nevertheless, methodologically reflective project publications such as the Chifeng volume which also reflect on unresolved disagreements on method, theory, and interpretation, are invaluable for a variety of reasons: 1. They allow for a realistic evaluation of the data produced rather than trying to mask issues. 2. They prepare participants on future projects for potential issues and possible solutions. 3. They allow for multi-vocal accounts on remaining theoretical and methodological issues and differences that other research can and should investigate further, thus moving the discipline as a whole forward. 4. They provide a release valve for potentially lingering frustrations about project-internal disagreements smoothing the way for future collaboration. The Chifeng project has had multiple follow-up projects, suggesting that the open-debate and multi-voiced approach has been productive. Here, a particular area of China has thus been a testing ground not just for social evolutionary models and survey methods, but also for ways of conducting and reporting on fieldwork with all its complications and limitations – and in a bilingual format that targets a wide readership.

Such reflections speak not only of conflict but of actual dialogue, a sphere where traditional Chinese approaches are not simply replaced by Western theories and methods but where Western scholars become accustomed to having their approaches questioned in turn. As Zhang Zhongpei put it: 'In order to realize the true potential of scientific approaches in archeology, we must not be satisfied that what we can accomplish at present is a complete and accurate reconstruction of ancient reality. A scientific attitude requires a high degree of methodological skepticism and continued striving toward better and more accurate knowledge of the past' (Chifeng 2003, 91). For non-Chinese scholars, working together with Chinese archaeologists on Chinese material is thus a fruitful way of questioning and improving theories and methods while transforming them into something neither 'Chinese' nor 'Western' but a globally relevant contribution to world archaeology. This kind of exchange comes very close to what K.C. Chang envisioned: an international archaeology in which China is not only at the receiving end of Western influence but provides a 'data base sufficient in its own right from which new social science hypotheses can be generated' (Chang 1989, 161).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Anke Hein is Associate Professor in Chinese Archaeology at the University of Oxford and St Hugh's College. She is an anthropological archaeologist focusing on issues of culture contact, identity formation and expression, and the history and practice of archaeology as a discipline, particularly in the Chinese border regions.

ORCID

Anke Hein http://orcid.org/0000-0002-5052-1504

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