

Area Studies for Urban Sustainability Research: Current Practice and Untapped Potential

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Abstract

This paper discusses the potential of Area Studies to inform scientific inquiry for urban sustainability. It draws from two strains of scholarship: the systemic and place-based research on sustainability and the post-1989 reflection on the conceptual foundations of Area Studies. The author starts from the assumption that Area Studies and sustainability research share a similar concern over place(s), shaped over time by human-to-nature and human-to-human relations. He then lays down two pathways for the contribution of Area Studies to urban sustainability research. The first reflects the role of Area Studies in overcoming disciplinary and sectorial barriers, fostering holistic understandings of sustainability. The second relates to the capacity for self-reflexivity inherent in Area Studies, which nurtures critical approaches to the study of sustainability. Once its epistemological and ethical potential is unearthed, Area Studies can become a thriving trans-disciplinary field informing socio-ecological transformations.

Keywords: Area Studies, urban sustainability, place, transdisciplinary research, Asia

1. Introduction

Our epoch is filled with concern about the anthropogenic menace to the survival of human civilisation on Earth (Beck 2011, McNeill / Engelke 2016). Environmental awareness has spurred novel forms of mobilisation (Temper et al. 2018), epitomised by the Fridays for Future and the Extinction Rebellion movements. Academia plays an important role in exploring change for sustainability and informing a caring commitment towards the planet (see e.g. Capra / Mattei 2016, and the German network Scientists for Future, www.scientists4future.org). With over 50% of human beings now living in urban areas (UN 2018), cities play a pivotal role in sustainability innovation. Against this background, this paper explores the potential of Area Studies (AS) to in-

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form scientific enquiry for urban sustainability. The latter is hereby understood as (a) inclusive of environmental, cultural, social and economic dimensions; and (b) informed by values of environmental and social justice (UCLG 2010, Haugthon 1999). I draw from two strains of scholarship: the systemic and place-based research for sustainability; and the post-Cold War reflection on the theory and practice of AS. The reason why I take the end of the Cold War as starting point for this analysis is that 1989 was followed by a naturalisation of the “Western” mode of civilisation, based on capitalism and (neo) liberal democracy. To a large extent, this cultural process jeopardised the rationale for area-based knowledge and deprived AS of its critical edge. In the 1990s and early 2000s, the idea of AS as a repository of technical expertise with no theoretical significance, subservient to social sciences and instrumental to economic interests, became widespread (Ludden 1997, Wang 2010). In fact, AS has often been instrumental to the ideology of globalisation, depoliticising its inherent inequality (Wang 2010). On the other hand, these processes have opened windows of opportunity to debate the role of AS as a critical form of knowledge.¹ This paper seeks to contribute to this debate.

In the first section, I reframe the definition of AS based on the notion of place. I also illustrate how AS and sustainability research may share a common concern about socio-ecological interactions unfolding in places. In the second section I lay down two complementary pathways of AS contribution to the study of urban sustainability. The first reflects the practice of AS in multi- and interdisciplinary research on sustainability. This is common currency in many academic organisations seeking to integrate contributions from different strains of scholarship. However, its practice remains fragmented, due to the lack of a shared ethical and cognitive framework. The second pathway has to do with the potential for self-reflexivity of AS. The latter can be an important resource for a deeper comprehension of human-nature relations and of their global significance, as well as for the promotion of a radical rethinking of socio-ecological patterns. In the concluding section, I summarise the key messages of this paper and their relevance for sustainability research and politics. In the paper I bring examples of AS scholarship relevant for sustainability, also based on first-hand experience in inter- and trans-disciplinary² projects.

1 An important contribution in this respect has been made by David Palumbo-Liu, with specific reference to ethnic studies. The latter, he argues, provide a locus for “a critique of the ideological apparatuses that distribute power and resources unevenly among the different constituencies of a multi-cultural society” (Palumbo-Liu 1995: 2, in Wang 2010: 422).

2 Unlike interdisciplinarity, transdisciplinarity “challenges the entire framework of disciplinary thinking and seeks to assemble new approaches [. . .] using materials from existing scholarly disciplines for new purposes” (Bernstein 2015, n.p.). Moreover, it is intrinsically open to the integration of informal knowledge (e.g. indigenous knowledge).

2. Area Studies, Place and Sustainability Studies share similar concerns

2.1. A definition of Area Studies

In *The Politics of Knowledge*, social anthropologist David Szanton defines Area Studies as a heterogeneous group of fields, sharing a commitment to: (a) intensive language study; (b) field research; (c) the comprehension of local histories, perceptions, materials and interpretations; (d) elaborate grounded theory by means of in-depth observation; and (e) the integration of complementary disciplinary approaches (Szanton 2002). The field of AS is therefore understood as an exemplar of interdisciplinary intellectual work (Calhoun 2017, Ludden 1997) with a distinctive territorial nature. In fact, AS subfields are divided into areas whose geographical boundaries may vary based on historical facts, political factors and particular interests (Ludden 1997). Ideally, these subdivisions embed scientific taxonomies, modelled on different patterns of human civilisation. This allows AS to generate knowledge attentive to context, i.e., sensitive to geographical, historical and cultural variation (Khun 1984; on the notion of context see also Geertz 1973).

Self-reflexivity is another important feature of AS. This can be understood as the researcher's awareness of the socio-cultural, political and economic conditions of the production of knowledge; and of his/her own position and role with respect to such processes (Lee 2001). Self-reflexivity translates into the recognition that any given approach employed in research is by definition limited (Jacobs 2015, Blackman / Featherstone 2015). This rejection of claims of universality derives from the daily scientific practice of AS scholars, which exposes the inadequacy of narrow epistemologies and sharp separations between disciplines (c.f. Wallerstein et al. 1996).

This position is also rooted in the experience of the precursors of Oriental studies in the XVI and XVII centuries. Back then, no rigid disciplinary compartments existed and the euro-centrism that would characterise modern techno-scientific thought had not yet fully emerged. The Jesuit missions in China and Japan, for example, are revealing in this respect. Despite being primarily remembered for their contributions in the humanities, Jesuits were engaged in a complex variety of scientific practices, encompassing also natural philosophy (Harris 2005). The same applies to other Europeans working in Arab countries, such as Jacobus Golius (1596–1667) (IBTTM 2019). This versatility was instrumental to confessional, political and economic goals, whose attainment was facilitated by the function of these scholars as knowledge brokers (Harris 2005; Brombal 2018). And yet their holism resonates with the contemporary debate on the scientific and societal contributions of AS.

The key element of interest for the purpose of this paper is the potential of AS to produce knowledge that enables our comprehension of a core driver of human civilisation, i.e., the interaction between human beings and nature (Schäfer 2010). In the next two sections, I put forward a few concepts that are useful for reframing AS in a socio-ecologically aware fashion. I will start by introducing the notion of place and its potential for establishing a connection between AS and sustainability studies.

2.2. The notion of place as a key entry point to AS for sustainability

Despite being often defined spatially, the theory and practice of AS can be better understood by employing the notion of place. Rather than being defined by physical boundaries, place is made of relations that both shape the physical space and permeate it with subjective and collective meaning(s) (Doreen 2004, Cheng et al. 2003). Such relations consist of interactions among human beings and between human beings and more-than-human entities,³ be they living or inanimate. The essence of place is therefore both social and ecological. It encompasses the interdependency between human communities and natural environments (Marsden 2011), thus overcoming the anthropocentrism that informs most conceptualisations of space, to start with that of Lefebvre in *The Production of Space* (1991). The importance given to interrelations – rather than boundaries – also implies that place-making processes are highly context-dependent. They consist of systemic interactions among cultural, social, political and biophysical elements, peculiar to a certain place at a certain time in history.

Due to its context-sensitive and multi-faceted nature – cultural, linguistic, political and ecological – the category of place is of great relevance to AS (LIAS 2013). At the same time, AS is ideally positioned to contribute to scholarship about places, by drawing from a vast cumulative knowledge, acquired through an intimate and prolonged relation with cultures and societies. This relation nurtures AS scholars' *Fingerspitzengefühl*, i.e., their capacity to intuitively comprehend places to which they have devoted their studies (Schäfer 2010). Besides being an analytical tool for AS practice, the notion of place unearths the reflexive potential of AS. Bengali historian Dipesh Chakrabarty made an important – albeit probably involuntary – contribution in this respect. In his volume *Provincializing Europe. Postcolonial Thought and Historical Difference*, Chakrabarty forcefully states the importance of place in his intellectual journey:

3 This expression encompasses all non-human entities on Earth. It defies the human-nature dichotomy and endorses the obligation to care for the planet (Brombal 2019).

It was thus incumbent on me to demonstrate from where – what kind of a place – my own critique issued, for this being-from-a-place is what gave the critique both its charge and its limitations. I needed to think through forms of life that I knew with some degree of intimacy. (Chakrabarty 2009: xviii)

By departing from the assumption that “thought is related to places”, Chakrabarty rejects the placelessness of Eurocentric modernity and defies scientised claims of truth that uphold its edifice (Calhoun 2017; see also Wang 2002). Based on this rejection of homogeneity, Chakrabarty endorses the necessity to shift our focus from the normative concept of the “transition” to modernity to the one of “translation”. Modernity then becomes an open-ended process, iteratively shaped within places and by their interaction with global trends (Chakrabarty 2009). This is consistent with the idea that indigenous knowledge(s) can help us in envisioning socio-ecological patterns, casting off modernist and pro-development biases (see Norman 2017). It is also of fundamental importance for AS, because it resonates with the idea that places – and hence languages, cultures, social structures, landscapes and ecosystems – play a role in shaping civilisation, by translating locally the global drivers of change and civilisational challenges. In the epoch of the Anthropocene, this means first and foremost tackling the troubled relation between humans and the natural environment (Crutzen 2002).

2.3. The city as an important locus of study for place-based sustainability

Urban studies has long employed the perspective of place and place-making. This approach has been further elaborated in the field of environmental sustainability (Simon et al. 2008). In fact, urbanisation is shaped over time by the interaction between people and biophysical elements. It is therefore of clear socio-ecological interest. The importance attributed to cities in sustainability research is reinforced by the fact that they epitomise the interaction between socio-ecological systems at different scales. Cities are at the same time at the receiving end of global cultural, socio-economic and environmental trends, and potential agents of institutional and technological change for sustainability (Brombal et al. 2018). Also, cities can be seen as in-between-nodes within wider networks, where different forms of knowledge and practices are exchanged and brokered.

Although environmental quality and health have been for centuries an important issue in city planning, the debate about urban sustainability has been mainstreamed only in recent decades. A milestone was the 1992 UN Rio Conference on Environment and Development, which streamlined concepts of sustainable territorial planning and management. The process opened by the Rio

Conference eventually resulted in a specific framework for urban intervention, the Local Agenda 21. The Agenda called for a comprehensive approach to sustainability, integrating economic, social and environmental aspects, to be pursued by means of meaningful consultations with the public. A number of different positions have emerged on how to translate these objectives into reality. Despite their heterogeneity, we may subdivide them into two overarching groups. On the one hand, there are visions of the future inspired by the norm of weak sustainability (Scoones 2016, Gutiérrez 1996, Martinez-Alier 1995). They share a faith in the capacity of technology and economic capital to mitigate the anthropogenic destruction of the planet and if necessary to repair – or replace altogether – ecosystems vital to human life. This approach sees nature as instrumental to human needs and tends not to bestow any intrinsic value upon it. Very often, this translates into actions and narratives informed by viability – combining economic growth and environmental quality – rather than comprehensive sustainability, inclusive of social aspects (Brombal et al. 2018). Projects of smart/eco/green(er) cities – and the narratives underlying them – are typical expressions of such faith in technology and money to promote a more efficient relationship between mankind and nature. One of the main reasons for the popularity of these projects among technical and political elites lies in their scalability and replicability, facilitated by the possibility to measure their results according to standardised parameters and quantitative metrics (see e.g., Riegler 2017).

On the other hand lies strong sustainability, which acknowledges the irreplaceability of natural capital and posits that technology cannot make up for the disruption of ecosystem services. Moreover, it attaches importance to social justice and its interconnection to unequal access to resources (Gutiérrez 1996, Martinez-Alier 1995). Strong sustainability implies both the inclusion of social and cultural elements and a more comprehensive understanding of prosperity, often encompassing the well-being of more-than-human entities living with us on the planet. By highlighting the need to include other dimensions and entities, this vision reframes the kind of change we would need in order to pursue sustainability. Building on the tenets of system thinking, it highlights the importance of cognitive and emotional attitudes as leverage points for radical, transformative change. This makes it more open to embracing the contribution of indigenous movements and bottom-up participation. Mobilisation for the urban commons, community-based regeneration and resistance to gentrification are just a few examples of urban practices that draw from this conceptualisation.

By substituting technology with culture as the primary locus of change,⁴ this vision endorses difference over homogeneity. In fact, change generated by this

4 This does not mean that it eliminates the role of technology altogether, however.

approach is hardly measurable by standardised parameters, both in terms of processes and outcomes. To a large extent, this is due to the fact that such processes are much more context-dependent – and therefore fuzzier and unpredictable – than those based on the adoption of advanced technology. In other terms, they embrace the idea that place is crucial in reframing and responding to global challenges, echoing Chakrabarty's proposition illustrated in the previous section. As we shall see, both of these visions underlying urban sustainability can encompass the role of AS.

3. Area Studies and Urban Sustainability Research

3.1. The relevance of AS to sustainability research: key themes and trends

In a nutshell, one reason for the relevance of AS to sustainability research lies in its capacity to advance the understanding of place-based values and norms driving socio-ecological relations. Seen from a systemic perspective, AS is concerned with those patterns, structures and mental models that run deep within societies and which translate into biophysical modifications of the natural environment. There are plenty of examples in this respect.

In the sub-field of Chinese Studies, the most notable example is provided by sociologist and Sinologist Karl August Wittfogel. In his volume *Oriental Despotism* (1957) he provides an *ante litteram* socio-ecological account of the norms of political power in Asia. His idea is that a close relation exists between the establishment of irrigation systems over large territories, the pervasiveness of political power and the development of societies.⁵ Despite being heatedly discussed among historians (Perry 1988), Wittfogel's thesis still stimulates debate among researchers in the field (Bichsel 2016).

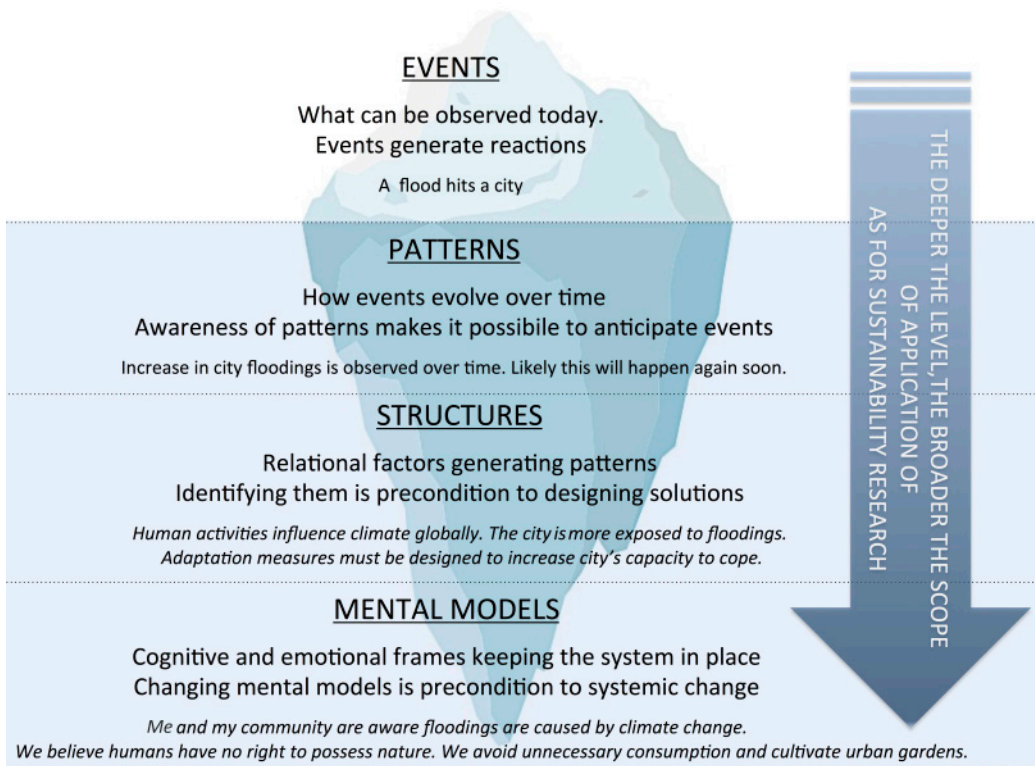
While Wittfogel's focus was very much skewed towards the vertical, top-down dimension of political dynamics shaping human-nature relations, more up-to date scholarship has stressed the importance of horizontal structures and multi-scalar decision-making. An important example is provided by proponents of fragmented authoritarianism – Kenneth Lieberthal, Michael Oksenberg and more recently Andrew Mertha – whose works all devote particular attention to water resources (Lieberthal / Oksenberg 1988, Mertha 2009). With regard to sustainability, the value of their work is twofold: on the one hand, they expose hegemonic norms of development; on the other, they inves-

⁵ Hence the definition of so-called “hydraulic societies”. On the nexus between agricultural production, transportation and water infrastructures in China's densely populated areas, see also the work by Daniels and Menzies (1996), published in the series *Science and Civilisation in China*.

tigate avenues for actors traditionally excluded from the political arena to influence policy-making.

Other contributions have focused on the science–society–policy nexus. Susan Greenhalgh’s *Just One Child. Science and Policy in Deng’s China* (2008) is a milestone contribution in this respect, as it unveils the instrumental use of technological discourses to remove diverging voices from the political arena. Her findings have clear implications for political ecology in China and elsewhere, as the use of Science and Technology narratives is very often employed to justify developmentalism and to curtail the possibility of envisioning possible alternatives, particularly in city development. This strain of research has been pursued also by other scholars of Chinese language and society such as Michael Schoenhals, who studied the subtle mechanisms that cause the scientific and rational to be identified with the positions of those in power (Schoenhals 1992). This is echoed in another well-known contribution to the study of China’s political ecology, *Mao’s War Against Nature* by Judith Shapiro. The book is an account of policies and discourses that led to widespread environmental destruction during Mao’s years in power (Shapiro 2001).

Figure 1: Systemic thinking and Area Studies



Source: Compiled by author, based on The Donella Meadows Project 2019

Finally, another strain of sustainability-relevant research covered by AS is religious and spirituality studies, in particular when focusing on the capacity of traditional thought to inform a re-adjustment of socio-ecological relations (Goldin 2005). An important project in this respect has been the Yale Forum on Religion and Ecology,⁶ founded in 2006 by Mary Evelyn Tucker and John Grim to promote the creative use of religious legacies to find comprehensive solutions to environmental problems. Another important contribution has been made in recent years by James Miller with his work on Daoism, ecology and the quest for sustainable futures (Miller 2017; see also Weller 2012).

Despite these valuable examples of commitment, AS scholars have seldom framed their work in terms of contribution to the sustainability debate. This may be due to institutional limitations, lack of awareness or to the absence of commitment towards nature and the environment. Sometimes, this may also be caused by the fear of accusations of being instrumental to the agenda of other disciplines. To overcome these limits and expand AS boundaries, the field should be framed more accurately in terms of its contribution to sustainability research. In the next two sections, I try to do so by employing two complementary frames, relevant to (a) methodologies employed for the study of urban sustainability; and (b) different conceptual approaches to socio-ecological relations.

3.2. AS, multi- and inter-disciplinary research for urban sustainability

Multi- and inter-disciplinary approaches are common currency in urban sustainability studies, due to the multidimensional nature of socio-ecological relations in densely populated territories. Despite often being used interchangeably, these approaches are different with respect to processes and intended outcomes. Multi-disciplinary research collates inputs from different disciplines, without a unified analysis or synthesis. It does not question normative assumptions inherent in specific fields. Inter-disciplinary studies are a step forward in integrating disciplines employed in the process of research. They pursue a holistic knowledge of the issue at hand (Bernstein 2015).

Urban sustainability assessments employ multi- and inter-disciplinary research. Often carried out to support evidence-based policy making, sustainability assessments usually focus on the visible outcomes of human-nature and human-human interactions in cities and the formal institutions – rules and policies – that affect and govern these relationships. They are therefore primar-

⁶ A retrospective on the work done by Tucker and Grim within that project is available here: <https://environment.yale.edu/news/article/20-years-of-the-yale-forum-on-religion-and-ecology/>. On Tucker's and Grim's work, see also the Emerging Earth Community website.

ily concerned with measuring the evolution of tangible phenomena (e.g., pollution, economic growth, poverty, etc.) vis-à-vis human decisions influencing such trends in cities.⁷

The contribution of AS to this field focuses on the collection, collation and analysis of urban policy materials, either via desk research, the study of archives or fieldwork. The knowledge of local languages plays a fundamental role in this respect. Perhaps more importantly, AS scholars bring into play their awareness of dominant discourses embedded in sectoral jargons, a resource scarcely available outside AS. The Chinese expression *kexue faxhanguan* 科学发展观 provides a good example of the role of AS scholars in this respect. Translated literally as “scientific outlook on development”, the expression became popular in the early 2000s in China’s political jargon to describe a shift towards sustainable development. The term “scientific” (*kexue* 科学) is often employed in China to characterise political decisions. It entails the notion of a both rational and well-pondered choice, reflecting a “scientific” reality and therefore not debatable (Schoenhals 1992). Any policy review informing urban sustainability assessment lacking this awareness – rarely available to scientists outside of AS – would miss a critical element. First, because it would overlook sources of information labelled with *kexue faxhanguan* 科学发展观. More importantly, because it would miss a core ideological trait of political processes concerning sustainability, i.e., the instrumental use of science to remove issues from the arena of public debate (Greenhalgh 2008).⁸

AS also plays an important role in relating localised, place-based phenomena to wider global trends. AS scholars often play a role similar to that of their predecessors centuries earlier, brokering different scientific and institutional mindsets. This can be seen especially during the theoretical modelling of sustainability appraisals, when researchers are faced with defining the conceptual frame of their analysis. Concepts such as green development, ecological city and smart city are often charged with diverse meanings in different contexts. The same applies to analytical criteria of relevance for urban governance and appraisal, such as wellbeing and social capital. When engaged since the very beginning in collaborative groups, AS scholars can strengthen the researchers’ awareness about these diversities, establishing a common language across components of the group.

A less common but equally important contribution made by AS scholars to sustainability research is the retrieval of information on the state of the environment and society from sources that are usually inaccessible to natural and social scientists, such as historical records, artwork, etc. These texts allow experts to extend the availability of environmental monitoring data back in time. A notable example is the way data about locust outbreaks reported by

7 See e.g. the work of the Urban China Initiative, <http://www.urbanchinainitiative.org/en/index.html>.

8 This also impacts processes of public participation, which we will touch upon in the next section.

local officials and laypeople in pre-modern China are used to feed climate models (Tian et al. 2011).⁹

To sum up, AS scholars contribute to multi- and inter-disciplinary urban sustainability research in a number of ways: (a) they can retrieve data and information that others can hardly access and supply them to sustainability assessment models; (b) they can translate concepts, data and information in ways that are understandable and useful for the common endeavour of the research group; (c) they can unravel scientised discourses that may jeopardise the accuracy and reliability of the research.

This said, despite AS being a field where boundaries between scholarly traditions can be overcome (Ludden 1997), contribution to multi-disciplinary and inter-disciplinary research is often perceived by many AS scholars as instrumental to the agenda of other research fields. This position shows a lack of awareness about the reasons why we should pursue disciplinary integration and a lack of ethical commitment. In fact, multi- and inter-disciplinary research is not about parochial interests, but rather about how to bring together expertise to solve complex issues of common interest. As we shall see in the following section, this close interconnection between epistemology and ethics – the way we generate knowledge and why we should contribute to this – is even more intimate in trans-disciplinary research. It is in this respect that AS can make the most critical contribution to sustainability studies for urban sustainability.

3.3. Trans-disciplinary research, sustainability transformations and the untapped potential of AS

In 2013, conservationist and former dean of the Yale School of Forestry and Environmental Studies Gus Speth told a journalist:

I used to think that top global environmental problems were biodiversity loss, ecosystem collapse, and climate change. I thought that with 30 years of good science we could address these problems, but I was wrong. The top environmental problems are selfishness, greed, and apathy, and to deal with these we need a spiritual and cultural transformation. And we scientists don't know how to do that. (Hunt / Marlow 2019: 7)

Speth's words echo the tenets of strong sustainability, i.e., that meaningful and durable change for sustainability originates from a deep reflection over values. Such a position is held to be true also by the recent scholarship in system thinking, which places importance on the role of soft institutions in generating sustainability transformations.¹⁰ While inspirational in showing the need

⁹ Other examples are more localised, as in the case of Venice, where the line of seaweed visible on old paintings on bridges and *fondamenta* is employed today to understand the trend in sea level rise in recent centuries (Zaggia 2019).

¹⁰ See Capra 1982, The Donella Meadows Project 2019, Capra / Mattei 2015, Nørgård et al. 2019, Feola 2015.

for sustainability transformations, Speth's words also show the limits that have often undermined efforts in this direction. Claiming that "scientists don't know how to do that", he endorses the epistemological separation between (natural) sciences and culture that has long driven our approach to sustainability. Overcoming this dichotomy between humans and nature is the precondition to radical ruptures from the socio-ecological status quo. Methodologically, this requires restructuring the ways we pursue and use knowledge. Trans-disciplinary research provides a conceptual framework to embark on this challenging journey. Besides pursuing the integration of different disciplines – as in inter-disciplinary studies – trans-disciplinary processes legitimate sources of knowledge that are usually excluded from science-making. These include actors and organisations outside the field of institutionalised science, who may nonetheless contribute to the common endeavour of generating knowledge for socio-ecological change (Schäfer 2010, Brombal 2019).

Another feature that is common in trans-disciplinary research is the outright rejection of rigid, disciplinary-based normative assumptions. This rejection is often ethically grounded. Researchers who embrace it renounce claims of objectivity, positioning themselves and their work consistently within the pursuit of a declared goal of societal interest. This attitude must not be misunderstood as an expression of anti-scientific spirit. To paraphrase ecologist Garret Hardin (1968), it rather means finding moral solutions to civilisational challenges recognised by the scientific community (Toynbee 1972, in Capra 1982: 26, Capra / Mattei 2016, Brombal 2019).

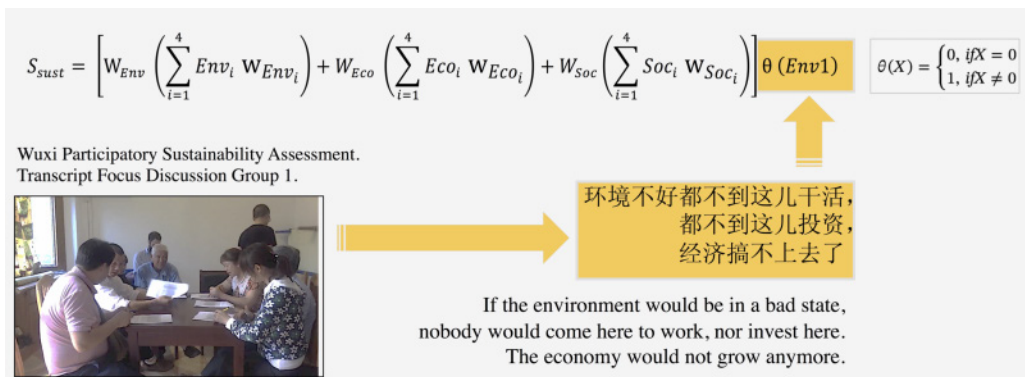
On a conceptual level, two main factors explain why AS is relevant for these efforts. The first lies in the concern of AS for places and therefore for the interaction of the human and the natural in shaping human civilisation. This attitude is aligned to the project of bringing to an end the epistemological dichotomy between humans and nature (Wallerstein et al. 1996, Ludden 1997). The second reason lies in the possibility to engage in mutual learning with communities and laypeople, a corollary of Chakrabarty's place-based translational agenda (Chakrabarty 2009).

In the field of urban sustainability research, AS can support these efforts by: (a) enabling a critical debate on the tenets of sustainability, deconstructing technocratic claims to placelessness and revaluing place-based solutions to global environmental issues; and (b) by unearthing and sustaining mental models useful for triggering radical change for strong sustainability. In consideration of the current debate on urban sustainability, largely informed by weak sustainability and driven by powerful economic interests, both of these aspects require engaging and empowering marginalised voices.

The concrete practice of AS for transformative sustainability research in cities is generally about establishing avenues by which local communities can meaningfully contribute to research and envision alternatives for a sustainable

future. Generally, the earlier this involvement takes place, the more transformative the potential of research is. A concrete example is provided by the involvement of laypeople in multi-criteria-decision-analysis (MCDA), a set of modelling approaches commonly used in urban sustainability research (Munda 2005). Consultations with individuals and communities are often employed in MCDA to define which criteria should bear more importance in the assessment carried out by researchers. Participatory practices can also be used to sharpen the political edge of the analysis, by translating radical statements made by people about the need to prioritise the attainment of a certain sustainability goal over others. The example below – taken from a case study in the Chinese city of Wuxi (Jiangsu) – nicely illustrates this aspect. The equation calculates a “sustainability score” attained by the socio-ecological system of the Lihu lake basin, based on 12 attributes (four for each of three dimensions of sustainability: environmental, socio-cultural and economic).

Figure 2: Participatory research in MCDA modelling for urban sustainability assessment – an example of engagement of AS scholars, Wuxi (Jiangsu), China.



S_{sust} is the sustainability score of the assessed program, in a specific point in time; W_{Env} , W_{Soc} , and W_{Eco} are the weights of the environmental, social, and economic dimensions; Env_i , Soc_i , and Eco_i are the scores of each criterion; W_{Env_i} , W_{Soc_i} and W_{Eco_i} are the weights of each criterion. Compiled by author (see also Brombal et al. 2018: 58).

In the first phase, Focus Discussion Groups (FDGs) were conducted, where participants defined the weights of criteria and attributes. During an ex-post qualitative analysis of transcripts, AS scholars, including myself, who had been coordinating the FDGs realised that the local residents had expressed a very strong preference for the attainment of environmental quality, not entirely reflected in the weights chosen at the end of the FDG. The research group (see Brombal et al. 2018) therefore opted for the inclusion of a veto function (θ) in the equation, associated with the attribute constituting the major reason for concern among the local community and policy makers, i.e., water environ-

mental quality (*Env1*). This way, researchers tried to ensure the model's responsiveness to the local socio-cultural and political context. In fact, in the event of a poor performance of the attribute "water environmental quality", the outcome of the model would be equal to zero (null), regardless of any possible improvement in other areas.

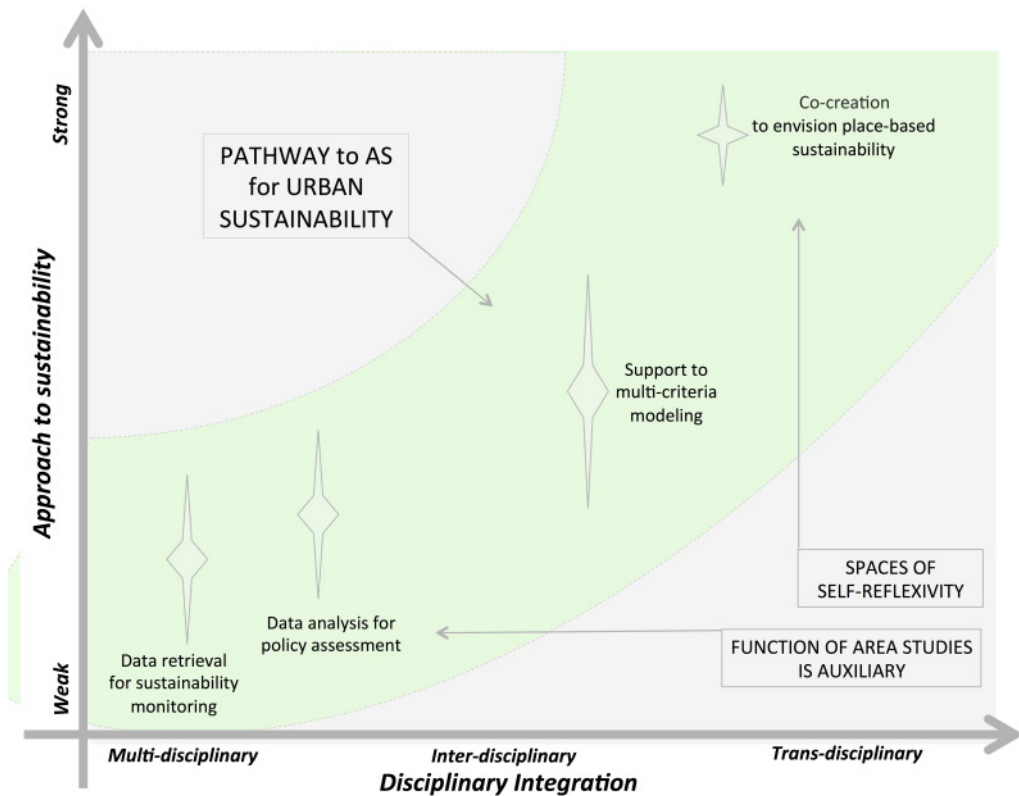
Apart from modelling – which largely relies on quantitative methods – qualitative approaches offer ample room for involvement of AS as well. According to the specific objective of the research, they can take different forms, ranging from collaborative workshops about pressing issues to co-creative exercises aimed at envisioning the future of communities and the urban environment they inhabit. Co-creative approaches are informed by the idea that places are made of linkages of communities to ecological processes. Therefore they de-value top-down approaches and engage people to question dominant assumptions about cities, first of all the idea that they are largely isolated from eco-systems. A promising approach is the use of art-based methods to envision sustainability, often combined with the embodiment of other entities, such as trees, birds, buildings, water, etc. This can support the evolution of societal understandings of urban sustainability beyond their current, largely anthropocentric boundaries. Moreover, it can help in stretching the time horizon of reflection, something very useful when talking about sustainability: a tree in a public square, the theatre next to it and the hill upon which they stand have a much longer life-span than human beings (Pearson et al. 2018). To date, there is no evidence indicating that this approach has been used consistently within the AS community working on urban sustainability.

However, it was recently tested during a study retreat coordinated by AS scholars in Cansiglio forest, located in the Italian Alps. The retreat involved a group of international researchers and practitioners investigating socio-ecological scenarios involving the Belt and Road Initiative (BRI), a China-led project that promotes the establishment of infrastructural ties across Eurasia (Ca' Foscari News 2019). Given the centrality of built environments in the BRI, one-third of participants came from the disciplines of architecture and urban studies. In crystallising desirable scenarios for human-nature interactions, participants made full use of embodiment techniques. Scenarios resulting from this reflection differed in substantial ways from the mainstream narratives about the BRI obsessed with economic growth. Participants envisioned the relationship between built environments, human beings and more-than-human entities in ways that resonated with value-laden ideas of coexistence, ecological integrity and a caring relationship with places (Brombal et al. 2019).

Both in quantitative and qualitative trans-disciplinary approaches, the sensitivity to context inherent in AS and its capacity of relate and feel deeply about places is an important resource. And yet the expertise available to AS scholars is very seldom employed in this respect. Besides institutional fragmen-

tation and the lack of incentives and commitment already mentioned above, the scarce engagement of AS in trans-disciplinary research is due also to the low level of cross-disciplinary scientific literacy. In fact, while in multi-disciplinary research scholars can focus on their individual contribution without worrying too much about the general picture, trans-disciplinary research requires a much closer interaction. The entire research process can be seen as an iterative translation of cognitive frames among researchers and between researchers and the public. This requires at least some degree of fluency in diverse disciplinary, sectoral and cultural background, something that requires considerable commitment and time.

Figure 3: Current role and untapped potential of AS for Urban Sustainable Research



Source: Compiled by author

4. Conclusions

In this paper I have tried to establish categories through which the contribution of AS to urban sustainability research may be framed and acted upon. The most general of such categories is the idea of place, useful for bridging the sustainability debate with the scientific practice of AS. The latter can contribute to place-relevant knowledge and to understanding long-term interactions between human beings and the natural environment they inhabit. AS also offers ways to counteract technocratic approaches to sustainability that jeopardise socio-ecological connections by not recognising the relations between a place's ecosystem and its historical, cultural, spiritual and communal significance. The major potential of AS for sustainability lies in its capacity for criticising claims of universality found in development norms that characterise late modernity, including those which inform mainstream sustainability. This potential is still largely untapped and should be further explored. It may offer resources for imagination and change that are badly needed to cope with the current crisis in human-nature relations, epitomised by the unchallenged growth of urbanisation. The practice of AS can unearth mental models and collective norms that promote a caring attitude towards places, inclusive of human and more-than-human entities alike. The importance of this process can be hardly underestimated, because it moves the deepest leverage points for socio-ecological transformation: what we value most, and the way we want our future to be.

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