

一次关于城市景观对人类健康影响的学术对话（上） A Dialogue on the Impact of Urban Landscape on Human Health (I)



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摘要

此次对话强调了城市景观对人类身心健康的影响这一议题的重要性。围绕这个主题，从以下4个方面展开了探讨：（1）研究议题的重要性；（2）关于城市景观如何影响身心健康的实证研究证据；（3）城市景观如何影响社会交往；（4）欣赏自然对于健康的益处。对话的最后，探讨了在这一领域展开国际教育合作的可能性。

关键词

城市景观；身心健康；科学证据；社会交往；环境公平

Abstract

This dialogue emphasized the importance of exploring multiple impacts of urban landscapes on human health. We identified four main aspects of research on this topic: (1) The importance of this issue; (2) Empirical evidence regarding connection between landscape and human health; (3) How urban landscape influences social interactions; (4) The health benefits of contacting with nature. In the end, we discussed how to develop an international education collaboration in this field.

Key words

Urban Landscape; Human Health; Empirical Evidence; Social Interaction; Environmental Justice

1 简介

2012年4月，在威廉·C·苏利文（以下简称苏利文）教授的私宅里，我们以“城市景观对人类健康的影响”为主题展开了一次自由的学术讨论。我们还就如何开展一个力图通过国际协作和交流，在全球范围内推进城市景观与人类健康的研究和设计工作的国际教育合作项目进行了探讨。

苏利文：欢迎大家的到来。我们将利用这次机会探讨有关城市景观如何影响人类健康和幸福的一系列问题。张教授，您对这些问题的研究已持续了多长时间？

张俊彦（以下简称张）：我对这一领域的问题已经展开了10年左右的研究。我发现相对自然环境而言，城市环境容易使人们的精神变得越来越紧张，并引发各种各样的健康问题。人们都在

1 Introduction

In April 2012, the three of us had a free dialogue in Professor William C. Sullivan's (SULLIVAN hereafter) house. Our discussion focused on the impact of urban landscape on human health. In addition, we discussed our plans to initiate an international education program to accelerate the progress of research and design approaches that promote human health on a global scale.

SULLIVAN: Gentlemen, it is so good to see you in my home, and to have a chance to explore a range of issues about how urban landscape influences human health and wellbeing. Professor Chang, how long have you been examining landscape and health issues?

Chun-Yen CHANG (CHANG hereafter): I have been examining

追求更加宜居的生活环境，希望能将更多的绿地带回城市社区。于是我逐渐开始思考城市绿地对人类健康的影响。

苏利文：对于景观和人类健康来说，您认为目前哪些问题最值得我们去探索？

张：这是一个很难回答的问题。总体来说，现在人们逐渐意识到，居住在一个亲近自然的环境中，更胜于生活在一个拥有奢华装饰但却被停车场和混凝土（建筑）包围的豪宅中。

苏利文：西方曾经出现过一个叫做“小住宅运动”的思潮，指的是人们选择居住在约140m²而非常见的370m²的住宅中。这对美国人来说是一个很大的转变。小面积的住房被设计为更高标准的住宅，以拥有更多与自然接触的机会、良好的日照、大量的窗户、精巧而高效的结构。这样的住宅与超大面积但设计粗犷的传统住宅形成了鲜明的对比。

姜斌（以下简称姜）：20多年前，相关学者开始将西方景观生态学的理论引入中国。从那时起，人们开始关注建成环境的健康问题。但是，人们更加关注的是生态健康而非人类健康。建成环境与人类健康的关系，至少在景观设计学领域是被忽视的，这一状况直到最近几年才有所改善。但直到目前，也只有少数研究对这个问题进行了探讨。因此今天的讨论旨在通过我们的宣传，使人们意识到环境的健康不仅仅是指生态的健康，亦包括居于其间的人们的身心健康，从而推动这个领域的发展。

2 城市景观与人类身心健康的相关研究证据

苏利文：已有充分的证据表明设计对人类身心健康具有一定的影响。例如，东京的一项研究显示拥有较多绿地的社区更能吸引老年人在户外步行¹⁾。对于拥有相同步行习惯的居民来说，居住在一个拥有更多绿色步行空间的社区中的居民将比居住在普通社区中的居民拥有更长的寿命。英国的理查德·迈克尔和弗兰克·波普汉姆在2008年对邻里绿地的数量是否与人口死亡率存在关联这一问题进行了调查。调查就英国5年内共计36.6万的死亡人口进行

了研究，在排除其他影响死亡的因素后得出了以下结论：对于中低收入人群来说，邻里绿化程度越高，死亡率越低。由此我们可以清晰地看到，接触城市绿地和寿命之间存在关联性。这种关联性存在于大众人群这个尺度上，否则前面提及的这些研究不会具有如此显著的统计结果。现在的问题是：这是怎么发生的？是什么因素在起作用？又是通过何种机制发生的？我们应该如何将这些研究成果转化为设计原则和城市规划政策，从而创造更健康的城市？

环境的健康不仅仅是指生态的健康，亦包括居于其间的人们的身心健康。

姜：目前有关这方面的研究大部分是在西方国家完成的。但在中国这样的发展中国家，大部分的城市居民居住在高层公寓中，无法像美国那样拥有足够的空间去建造宽敞的后花园。因此，我们必须发掘不同的方式以促使人们在公共空间中接触自然。张教授，您怎么看待这个问题？我想台北这样的城市也存在类似的问题。

张：我们需要从不同的尺度来考察“接触自然”这个问题。苏利文教授所提到的英国的研究是建立在城市绿地这一尺度上的。但是我们亦可在非常小的尺度上看待这个问题，比如公寓里

1. 印度普纳贫困的低收入社区，摄于2011年。© William C. Sullivan
2. 芝加哥罗伯特·泰勒之家，摄于1995年。© William C. Sullivan
3. 芝加哥罗伯特·泰勒之家空旷的公共空间，摄于1996年。© William C. Sullivan
1. Barren, low-income neighborhood in Pune, India, 2011. © William C. Sullivan
2. Robert Taylor Homes, Chicago, 1995. © William C. Sullivan
3. Barren public space in Robert Taylor Homes, Chicago, 1996. © William C. Sullivan



the relationships between healthy landscape and healthy people for about 10 years. I noticed that compared to more natural settings, urban settings can make people more and more stressed, and that a lot of people have health problems in urban areas. These people often seek better living environments. They hope the city can add some green spaces back into their neighborhoods. Gradually, I began to think about the health consequences of green spaces in urban areas.

SULLIVAN: What do you think are the most important issues we need to explore right now with respect to healthy landscapes and healthy people?

CHANG: This is a hard question. Generally, people are gradually coming to understand that it may be more important to live in a setting that has a connection to the natural environment rather than a house with beautiful artificial decorations that is surrounded by parking and concrete.

SULLIVAN: In the West, there is a drive called the Small House Movement. This refers to building houses that are about 1,500 square feet instead of 4,000 square feet. For Americans, it is a sizable reduction to go from 4,000 to 1,500. The idea is to have a small home that has been designed to a higher standard, with more contact with nature, wonderful daylight, a lot of windows, and thoughtful, sophisticated, efficient construction rather than poor design with a great deal of square feet.

Bin JIANG (JIANG hereafter): Around 20 years ago, people brought ideas of landscape ecology from the West back to China. From then on, researchers gradually realized the importance of health of built environment. But the focus was primarily on ecological health. The relationship between the built environment and human health has rarely been emphasized until recently, at least not from the field of landscape architecture. Even now, only a few articles in the field of landscape architecture have examined the relationship between the built environment and human health. So the purpose of our discussion today is to push this forward a little bit in the hopes that doing so will help people understand that when we are talking about the health of environment, it is not only about ecological health but also about human health.

2 Evidence Regarding Urban Landscapes and Human Health

SULLIVAN: There are compelling evidences regarding the health benefits of design. For instance, a study in Tokyo showed that when

old people lived in spaces that invited people to walk in greener neighborhoods, these spaces predicted a host of outcomes related to health^[1]. People who lived in places that offered more opportunities to walk in greener spaces live longer than the other peers who were similarly engaged. In less-green spaces, people walk less. In another study by Richard Mitchell and Frank Popham (2008), the impact of neighborhood green spaces we examined to see if they were related to the likelihood that people would die over the 5-year span of the study. They examined over 366,000 people who died over a five-year period in Britain and showed the greener the nearby neighborhood, the less likely people in the middle and low income classes were to die. This was after controlling a host of variables we know to be related to mortality. So there clearly is an impact associated with exposure to urban nature and longevity. It is clearly visible at the population level — otherwise, these kinds of studies would not show impacts. So the question becomes: How is that happening? What is going on and by what mechanisms? How can we translate that knowledge into design guidelines and urban planning policies, to create healthier cities?

JIANG: Most publications are from Western countries. But in cities of developing countries like China, citizens are living in a much different urban environment. The majority of people in China, for instance, live in high-rise apartment buildings. They do not have space to create large back yards like Americans do. So we have to develop different pathways for people to connect with nature within public spaces. What do you think about that, Dr. Chang? I think Taipei has a similar challenge.

CHANG: Regarding the need for contacting with nature, I think we have different scales of observation that we need to pay attention to. Like the study Prof. Sullivan just mentioned — that is a study about green spaces at the national scale. But we can also consider a much smaller scale such as planting a pot of flowers in an apartment. Although doing so is a very small scale intervention, it still has the possibility of benefiting people who live in dense cities such as Taipei. Many studies demonstrate that people benefit from contacting with nature at various scales. Even in different countries, plants often represent health and life in a way that is not limited by space — plants represent life at small and large scales.

JIANG: I find there are environmental justice problems related to urban green space. Wealthy families often have more opportunities for outdoor exercise and social interactions. But if you are poor in an

的一盆花。尽管这是一个很小尺度上的环境干预，但是居住在类似于台北这样的高密度城市中的居民仍可以从中受益。有很多研究表明人们在不同的尺度下都能因接触自然而获益。即使在不同的国家，植物都意味着健康和生命，这是不受空间限制的——在各个尺度上植物都意味着生命。

姜：我发现城市绿地与环境公平问题息息相关。富裕的家庭往往拥有更多机会进行户外锻炼和社交活动。但是，如果你来自一个城市中的低收入家庭，则很可能居住在一个缺少树木和开放空间的拥挤社区中（图1）。在发展中国家，很多人都居住在缺乏绿色、不利于健康的社区环境中。这个问题的原因是复杂的，值得注意的是有很多的公共绿地正在被转化为半公共甚至私人化的空间。富裕的社区占据着大块的滨水地段，仅为其内部居民提供优质的、私密的滨河绿地。所以城市的自然资源是在一种不公平的分配状态下对市民的健康产生影响的。这一情况也存在于发达国家，例如居住在纽约中央公园周围公寓里的居民都来自富裕阶层，而贫民是没有机会居住在那里的。

苏利文：是的，收入水平的确是预测居民绿地占有率的一个重要指标。在西方的传统里，高尔夫球场被刻意设计成狭长的形状，以便在其周围布置更多的住宅。因为投资方知道住宅的价格会因毗邻高尔夫球场而升高。

姜：的确如此。我想临近的、步行可达的城市绿地对于生活在城市低收入社区的人们来说更加重要，因为他们缺乏时间、金钱和私人交通工具前往郊野公园或远距离的自然度假村进行休闲活动。

3 居住环境对社会交往的影响

姜：苏利文教授，您曾经对芝加哥的一个名叫“罗伯特·泰勒之家”的高层公寓群进行了一系列重要研究。您和研究伙伴共同考察了社区绿地对居民，特别是对儿童的行为和心理健康的影响。您能为我们做一些介绍吗？

苏利文：如果从直升飞机上俯瞰这个社区，这些高层公寓组团呈U或H形，从而创造出绿色的庭院空间（图2）。随着时间的推移，一些庭院仍然郁郁葱葱，一些则被硬质铺地覆盖，除了少量的草地，没有其他树木（图3）。这样的环境使我们有机会随机抽取居住在不同组团中的人们进行比较：一些人透过窗户就可看到绿地，而另外一些人只能看到寸草不生的停车场。“罗伯特·泰勒之家”拥有28栋造型完全相同的建筑，因此成为了一个理想的研究对象^[2]。

在第一项研究中，我们简单地在地图上标记出人们出现在户外空间的位置，并得出了令人惊讶的结果：在栽植了树木的社区

空间，有更多的成年人出现，并且逗留时间相对较长；而在没有树木的空间中，则很少有成年人出现。于是我们猜想，如果人们更愿意在树下逗留，是否会对邻里间的熟识程度产生可预测的影响？是否会对居民彼此间的社会支持或社会纽带的强度产生影响？

带着这些问题，我们进行了另一项研究。我们首先对每一位受访居民所居住的公寓户外绿地进行了逐一的测量，随后在不告知受访者研究假设的情况下，询问了他们的社会关系以及与邻居之间的关系（图4）。其结果十分惊人：所居住公寓的户外植被密度是受访者邻里交往的一个强有力、正相关的预测因素^[3]。与寓所户外绿地较少的居民相比，拥有更多户外公共绿地的居民有更多的社交活动和来访者，并且认识更多的邻居。这表明邻里间更加愿意相互帮助和支持，居民拥有更强的社区归属感。我想出现以上现象的原因在于绿地为人们创造了在户外逗留更长的机会，人们因此有机会相遇和彼此熟悉，这是一件非常积极而美好



4. 芝加哥罗伯特·泰勒之家的居民社会关系调查，摄于1995年。© William C. Sullivan

5. 城市公园可以作为社交场所，摄于2010年。© Bin Jiang

4. Interview of residents' social ties at Robert Taylor Homes, Chicago, 1995. © William C. Sullivan

5. Urban parks can be places for social interaction, 2010. © Bin Jiang

urban area, you have a much higher probability of living in a dense neighborhood without many trees and without much open space (Fig. 1). For too many people in developing countries, people live in barren settings that do not support health and wellbeing. This problem is compounded because in many developing countries, great amounts of public open spaces have been transformed into semipublic or even private spaces. For example, some rich neighborhoods have occupied large sections along the waterfront, which provide residents a private, wonderful riverfront green space. But by privatizing that space along the river, it is no longer available to the public. So the allocation of natural resources within a city can influence people's health in a way that is disproportionate depending on a person's wealth. This happens in developed countries too: Even in New York, people living in apartments around Central Park are very wealthy — poor people have no chance to live there.

SULLIVAN: Yes, income is a very important predictor of exposure to green space. In the Western tradition, golf courses are intentionally designed as long and narrow as possible in order to allocate as many homes along the course as possible because builders know the price of houses will go up if they are around the golf courses.

JIANG: Yes. I think nearby green space within a walking distance is even more important for people in low-income neighborhood because of their lack of time, capital, and private vehicles for recreation activities in a rural park or an vacation in a distant natural resort.

3 The Impact of Residential Environment on Community Interaction

JIANG: I remember in your important studies of Robert Taylor Homes, a neighborhood with high-rise apartments in Chicago. You and colleagues examined the impact of community green spaces on residents', especially children's behaviors and psychological health. Could you introduce more about that?

SULLIVAN: If you look down from a helicopter, the buildings would clustered in U- or H-shapes (Fig. 2), creating green courtyard spaces. Some courtyards were green, but some had been paved and had no trees and very little grass (Fig. 3). This setting gave us the ability to compare people who were randomly assigned to apartments that had barren parking lots outside their windows to people who had green spaces outside. Robert Taylor Homes at that time had 28 architecturally identical buildings, so it made for very nice field experiment ^[2].

In the first study, we simply mapped where people were outside, and the results were amazing. In neighborhood spaces with trees, we were very likely to find adults, and the adults lingered outside a little longer where there were trees. But you would rarely find adults in the areas where there were no trees. Then we got thinking, if people are hanging out more under trees, does this have any measurable implications for how well the neighbors know each other? For how much they support each other or for the strength of their social ties?

If people know each other more, they care more about the environment. They also have a more positive attitude toward the environment and society.

With these questions in mind, we just did another study. We independently measured, for every person we interviewed, the amount of nature right outside of their apartment. Without telling them our hypothesis, we asked about their social ties and their relationships with their neighbors (Fig. 4). The results were quite striking: the density of vegetation outside people's apartment was a strong and positive predictor of their connections with their neighbors ^[3]. The greener the outdoor spaces, the stronger the neighborhood social ties near that space. Compared to residents living adjacent to relatively barren spaces, individuals living adjacent to greener common spaces had more social activities and more visitors, knew more of their neighbors, reported their neighbors were more concerned with helping and supporting one another, and had stronger feelings of belonging. I think what happened here was that green spaces created opportunities for neighbors to linger outside a bit longer and in doing so, they got to meet and know each other and that turned into a very positive and wonderful thing.

CHANG: Having contact with nature is a basic human need. It does not matter if you are rich or poor. I think it relates to environmental justice. The government needs to provide a healthy environment for people, it is not enough to build concrete buildings and put people inside. People need spaces for activities and for going out to meet and talk to their neighbors (Fig. 5). Several studies talk about how if people know each other more, they care more about the environment. They also have a more positive attitude toward the environment and society.

4 The Beneficial of Appreciating Nature

JIANG: According to the results from several surveys, humans

的事情。

张：不论贫穷还是富有，与自然接触都是人的一种基本需求。我想这关乎环境公平问题。政府需要为人们提供一个健康的环境。仅仅建造很多钢筋混凝土的房子然后把人塞进去是不够的。人们需要绿色的活动空间，需要到户外与邻居见面和交流（图5）。一些研究表明，如果邻里之间更熟悉，人们会更加珍视自己的居住环境，同时对待环境和社会的态度也会更积极。

4 欣赏自然对身心健康的益处

姜：我们的一些调研结果表明，人类有一种与生俱来的与自然接触的渴望。当与自然接触时，人们会感到更加开心，这是人的本能反应。但是有时候，城市居民生活忙碌、终日不得闲暇，以至于不懂得如何去欣赏身边的一草一木。

苏利文：我并不完全赞成这样的界定，即人只有去欣赏自然才能从中受益。我认为人只要与自然接触就足够了。假设你有一条爱犬，而你对绿地的存在与否并不是很在意。但是，只要在绿



6. 城市绿色空间能够帮助人们缓解压力和精神疲劳，摄于2010年。© Bin Jiang
7. 伊利诺伊大学和台湾大学之间的合作项目，摄于2011年。© Chun-Yen Chang
6. Urban green space can relieve stress and mental fatigue, 2010. © Bin Jiang
7. Collaboration between University of Illinois and Taiwan University, 2011. © Chun-Yen Chang

地中遛狗，我就可以预言绿地将对你产生很大的益处，不论你是否欣赏它。你很可能感到紧张的精神得到了舒缓，并能够更好地集中注意力。这两种结果使你变得更有效率。不论人们是否在主观上意识到了这一点，变化确实发生了。

姜：您认为绿地的新奇性在人们的自然反应中会起到重要的作用吗？人们喜欢远离他们熟悉的环境，去到遥远的乡村公园或自然保护区旅行，这些地方和他们每天的生活环境完全不同。我们能否这样认为，越具新奇性的绿地对人体健康越有益？

苏利文：我认为新奇感与远离感（远离日常生活）是两个不同的概念。远离感是人们精神恢复的重要预测指标。我不知道新奇感在这一问题上是否重要。我认为（仅仅）到一步之遥的户外就能体会到一种远离的感觉，远离意味着让你摆脱压力、束缚以及日常生活的负担。例如当你从实验室繁重的工作中回到家，坐在户外的一棵树下享用晚餐、呼吸新鲜空气、享受离开充满压力的实验室的时光之时，你并不会感到这有多新奇，实际上这可能是你每天都要经历的事情，但你的确产生了远离感。我认为这才是最重要的（图7）。

5 教育合作项目

苏利文：下面我们谈一谈关于景观与健康的教育问题。我们拥有来自伊利诺伊大学与台湾大学的专业资源，并且一直在思考如何让世界各地的学生共享这些资源。于是，我们创立了一个国际交流学习项目（图7）。美国的学生可以在台湾大学学习一个学期，而来自东方的学生也在伊利诺伊大学学习一个学期。学生们将专注于理解场所与人类健康及幸福之间的关系并通过改善人居环境来促进人类的身心健康。

张：同学们都很期待参与这个项目。2013年，第一批学生将从台北来到伊利诺伊参与这项新的合作。学生们对这个研究课题表现出很大的兴趣，我想对这个问题的跨文化理解应该是非常有意义的。

很多学生都知道景观设计与规划并不仅仅关注地方尺度的东西——这些学科会在区域尺度上影响经济健康、生态健康和人类健康。你无法将这些问题局限在某种特定的文化里——你需要向不同的文化和其他学科学习。这也正是我们发起这个项目的原由。

苏利文：此外，我也想与中国大陆的大学进行交流——让更多的中国大学生有机会参与这个全新的项目。我期待与有意愿参与这一领域学习的大陆学生取得联系，并期待与中国的老师开展教育合作。我相信通过这样的努力，中国大陆学生可以获得相应的知识和技能，从而为数亿人民带来福祉。LAF

have an urge to feel connected to nature. People feel better when they are connected to nature. That is a very basic response. But sometimes, for people living in urban areas who are just very busy and their brains are quite occupied. So they pass by a tree and do not know how to appreciate it any more.

SULLIVAN: You know, I do not know if I quite agree with that framing, that you need to appreciate nature. I think it is enough to just be engaged in nature. Maybe you have a dog, and you love the dog, and you do not care about the green space at all. But if only you walk the dog in the green space. I can predict that walking in the green space will have a huge benefit for you, whether you appreciate it or not. After you walk your dog in a green area, you are likely to feel less stressed. You will likely have increased your capacity to pay attention. These two outcomes right there will make you more effective. But the fact is people are more effective, whether they consciously know it or not.

JIANG: Do you think the novelty of green space plays an important role in our reactions to it? People like to be away from the environment they are familiar with. They travel long distances to rural parks or natural preserves, which are much different from their everyday living environment. Can I say a green space with a higher degree of novelty would benefit human health more?

SULLIVAN: I do not think it is the novelty as much as the sense of being away. The sense of being away is a very important predictor of a restorative experience. I do not know it is so important that it is novel. I think you can get the sense of being away right next door. Being away is about taking you away from the stresses, strains, and demands of your everyday life. Let's say you did a series of stressful things in your lab today and then you come home. You have a little table outside under a tree. You can sit there and eat dinner, inhale the fresh air in the shade and experience being away from your pressure in your lab. This will not feel novel — indeed it may be your regular pattern — but you do feel being away. I think that is what is important (Fig. 6).

5 Education Collaboration Project

SULLIVAN: Let's talk briefly about education related to landscapes and health. We have expertise from the University of Illinois and Taiwan University and have been thinking about how can we make this expertise available to students from many places around the world. Thus, we created a study abroad program (Fig. 7). Students from the U.S. study for one semester at Taiwan University and students from the

East study at the University of Illinois for a semester. Students focus on understanding the relationships between places and human health and wellbeing, and improve living environment to promote human health.

CHANG: Students are eager to have this program. In 2013, the first group of students will travel from Taipei to Illinois to take part in this new collaboration. There is a great deal of interest on the part of students to understand the ways in which the built environment impacts health and wellbeing and to have a cross-cultural understanding of these impacts can be really powerful.

People feel better when they are connected to nature. That is a very basic response.

Many students are aware that landscape architecture and planning are not merely local concerns — they understand that these disciplines impact regional economic health, ecological health, and human health. You cannot limit that in one specific culture — you need to learn from different cultures and other disciplines. That is the reason we have initiated this program.

SULLIVAN: I also want to reach universities in the mainland of China — to have students from universities there gain access to this new program. I look forward to connecting with students in the mainland of China who want to study landscape and health. We also look forward to collaborating with the faculty members there as they work to prepare students whose work will benefit hundreds of millions of people because they have this knowledge and capacity to serve. **LAF**

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