图示景观设计实践与现代科研的错位与解决途径

BRIDGING THE GAPS BETWEEN LANDSCAPE DESIGN PRACTICE AND SCIENTIFIC RESEARCH: A GRAPHICAL INTERPRETATION

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摘要

景观规划设计从业人员似乎并不会利用其他领域已有的知识与科研成果，同时，他们开展的研究往往直接涉及其他学科领域，但其成果却无法和相关领域的科研人员竞争。造成这一现象的核心原因是景观规划设计实践与现代科研的错位，即“整体与解构”“要素与功能”以及“图示与文字”的差异。本文提出了解决这些错位的两种重要的途径与方法，包括发现与分析问题以及归纳与图示化科研成果。

关键词

科研实践界面；规划设计；实践研究；错位

ABSTRACT

Practitioners in the fields of landscape planning and design seem less taking advantage of, or even paying no attention to, existing findings of scientific research in other disciplines; and, they often conduct so-called “transdisciplinary” study on their own, but most of the outcomes are uncompetitive with those proven research findings in relevant fields. The author believed that it is essentially resulted from several dislocations between landscape practice and modern scientific research, that are, the gaps between holism and deconstruction, elements and functions, as well as graphics and texts. To bridge such gaps, this article puts forward two solutions: one is problem-finding and -addressing, and the other is synthesizing and visualization of research results, particularly through graphical interpretation.

KEY WORDS

Interface between Research and Practice; Planning and Design; Practice Research; Dislocation

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1 现代景观设计实践与研究的悖论

现代景观设计实践与研究存在一系列悖论，主要体现为：

1）虽然景观规划设计一直被认为是科学与艺术的结合体，但在实践操作中，科学性成分常常被无限压缩；

2）即便现代科研手段越来越发达、议题越来越深刻，但应用程度却不高。景观规划设计对于很多问题（如生态或可持续性）的理解依然以理论构建和理念倡导为主，并未对现有科研成果进行有效利用[1]；

3）“生态城市”“低碳城市”“海绵城市”等一轮又一轮的口号式运动并未明显改善现实中的城市化问题；

4）虽然相关从业人员，特别是学校教职人员一直在努力做科研，但往往一着手就会发现自己进入到一个陌生的领域，且研究成果大都因为方法以及数据的欠缺无法被相关领域认可。

景观规划设计从业人员似乎并不会利用其他领域的知识与科研成果，也没有学会像

其他领域的人员一样去做研究。造成这一现象的核心原因是设计实践与现代科研之间的错位，本文将以图示的方式加以说明。

2 错位原因剖析

“整体与解构”错位的根本在于，现代科研的“解构性”源于现代科学对于还原主义的强化，认为复杂系统以及复杂事物可以被化解为一系列小的组成部分来加以理解和描述。仅以生态学科研为例，其在现代的发展已细分为众多学科。比如，按照所研究的生物系统结构分类就有个体生态学、种群生态学、群落生态学、生态系统生态学等；而按照应用领域分类又可被分为农业生态学、环境生态学、生态信息学、城市生态学、景观生态学等。生态实践却完全不同，在城市设计和景观规划设计层面，政府管理部门和设计师面对的问题永远是如何制定场地整体决策，而这种基于场地的设计需要以多种思路综合考虑各类问题[2]，但上述学科分类方式无法为场地设计提供支持。

“要素与功能”以及“图示与文字”的错位在于实际操作层面。景观规划设计实践通过调整景观要素将设计意图展现在图纸上；而现代科研则主要关注功能层面，且主要是以文字和数据的形式表达。一类景观或土地利用要素可以承载多种功能，一种功能也可能需要多种景观要素来支撑。要素与功能密不可分，只是设计的着眼点是要素，而科研的出发点多是功能。同时，设计师需要用浅显易懂的图纸、PPT、视频等可视化形式来传达思路以及问题的解决方法。但科研成果往往会充满设计师看不懂且无法转化的图表，研究问题也可能并不针对实践需求，或者根本没有提出具体的实践指导建议[3][4]。

3 解决方法与途径

显而易见，单一问题的现代科研以及多种问题（且多要素）混合的规划设计实践之间缺乏有效的沟通与衔接。我们亟需创新的教学与研究方法以纠正科研与实践之间的错位，这其中两个核心创新将会是：

3.1 发现与分析问题的途径与方法

该过程是由整体向解构、由要素向功能转化的一部分。设计师需要通过一定的方法与途径详细分解场地层次、了解场地问题及其影响因素，并提炼出核心问题。这一过程的意义在于：1）避免简单套用设计概念（如“低碳”“海绵”等）与图形，深刻理解场地设计的重点以及待解决问题；2）使设计师知道，如希望进行科学循证，应以何种思路、往哪个方向、寻找哪些具体科研结果。

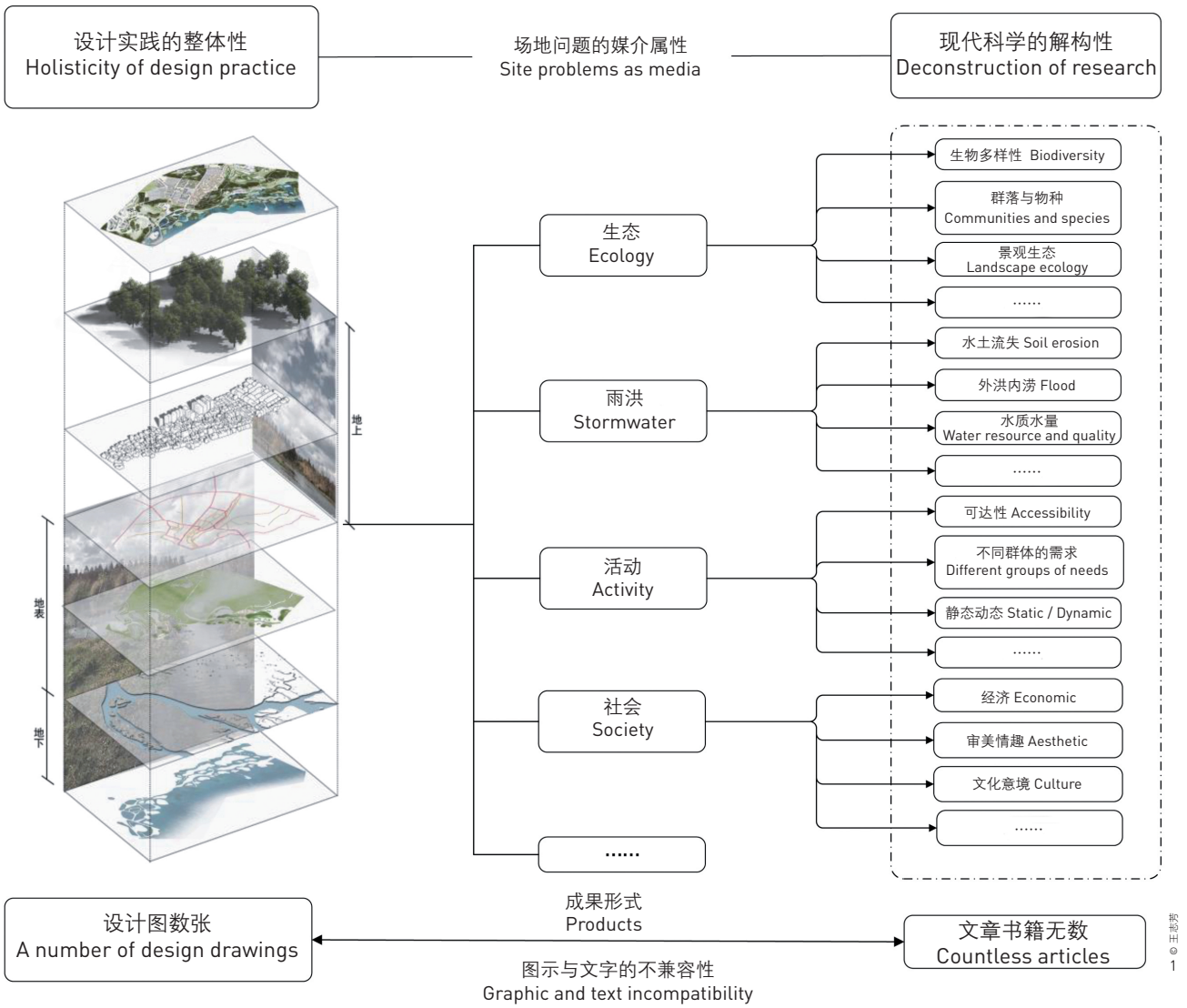
3.2 归纳与图示化科研成果的途径与方法

该过程是由解构向整体、由功能向要素、由文字向图示的整合。也许现代科研不能解决所有问题，但确实有许多发现与成果散落在林林总总的期刊和科研报告中。要将现代科学转化为可实践知识，需解决现今科研成果晦涩、解构、缺乏场地针对性的问题，即需要对散点知识进行重组和白话阐释，实现从“四散结论”到“归集发现”、从“生涩发现”到“直白的问题解决途径”、从“字面解决途径”到“空间图面策略”的转化过程[5]。这种将各种零散的专业知识与科研发现（涉及水文、气候、景观生态等领域）转化成设计导则或空间模式的过程，就是归类知识的形成过程。例如爱娜·T·克拉森在其文章中所归纳总结的区域设计导则[6]、美国农业部整理的生态过渡带设计导则等[7]。

4 结语

概括而言，景观规划设计实践与现代科研的错位在于“整体与解构”“要素与功能”以及“图示与文字”的差异。而解决这些错位的两个重要手段即是发现与分析问题以及归纳与图示化科研成果。

需要特别指出的是，本文提出的错位是基于景观或城市维度的，因为在诸多生态维度及视角下，城市及景观规划设计是最常见的改变物质环境的过程之一，且这一过程需要整合多种思维和视角。其他维度的生态问题，特别是小尺度生态问题及其修复，可能并不存在科研与实践的错位，因为单纯的生态问题完全可以依赖生态科研或自然本身的自我修复能力解决。城市及景观规划设计涉及的物质环境改变由于社会因素的介入而变得更加多维且复杂，生态科研与生态实践的矛盾才愈发突出[8]。**LAF**



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1. 景观规划设计实践与现代科研的错位在于“整体与解构”“要素与功能”以及“图示与文字”的差异。

1. Dislocations between landscape planning and design practice and modern scientific research reflect as the gaps between holism and deconstruction, elements and functions, as well as graphics and texts.

1 The Inconsistencies of Modern Landscape Practice and Research

Modern landscape practice and research sees ironies and inconsistencies, including:

1) Landscape planning and design is supposed as a discipline that integrates sciences and arts as its distinctive quality; but, in fact, planning or design practice takes little scientific knowledge into consideration;

2) Nowadays the means and aims of modern scientific research are increasingly advanced; but, only few of them is applied to solve reality problems. In landscape planning and design, agendas and issues such as ecology and sustainability are still responded with conceptual plans, seeing few concrete science-based applications[1];

3) Aggressive urban construction movements like Eco-cities, Low-carbon Cities, and Sponge Cities fail providing effective solutions to the problems in China's urbanization process;

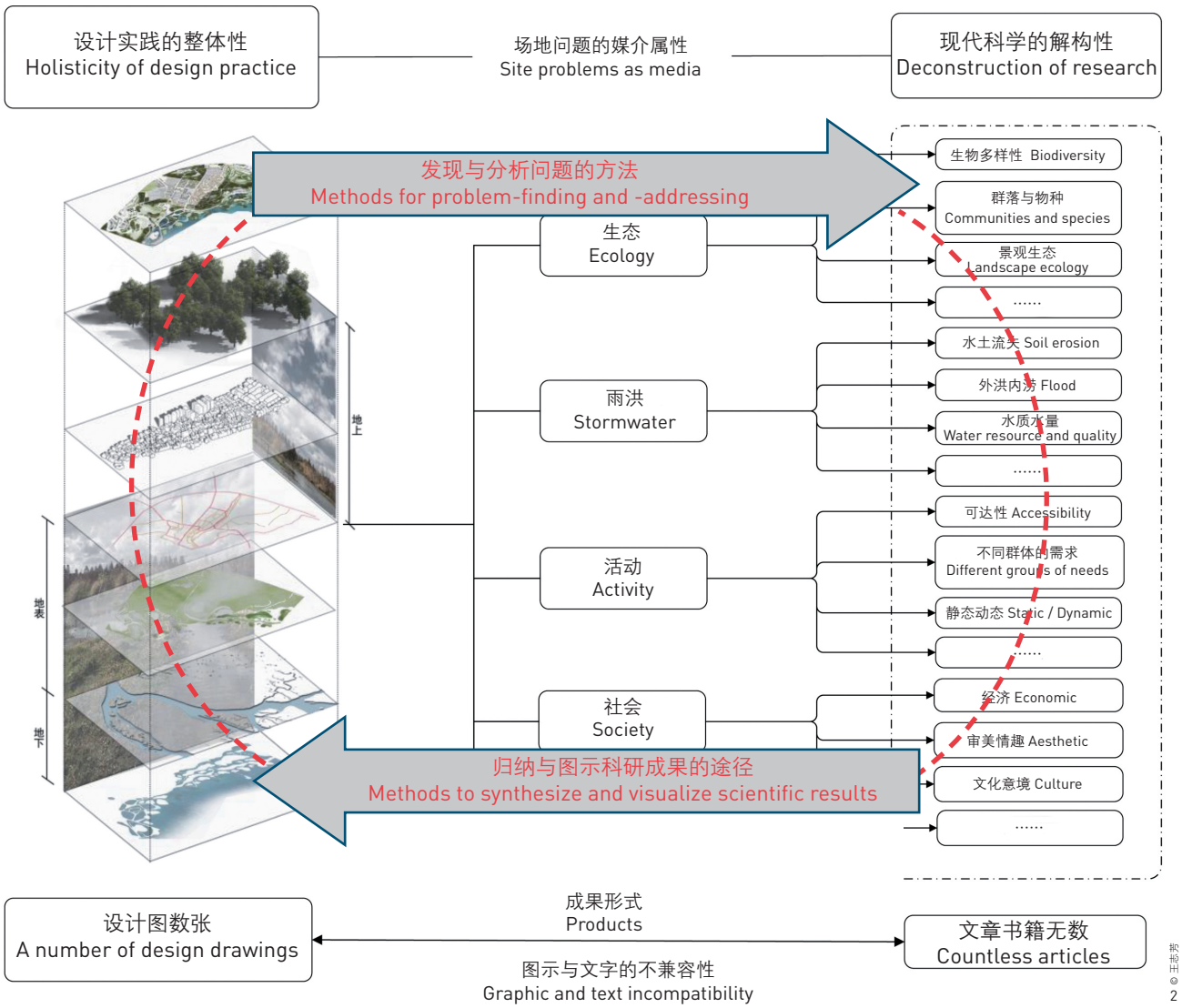
4) Although landscape professionals, especially college faculties, have been working hard on scientific research, they find themselves often step into an unfamiliar academic territories, resulting in that most of the outcomes could not be recognized in relevant fields because of specialty gaps and the lack of data.

Practitioners in the fields of landscape planning and design seem less taking advantage of existing scientific findings in other fields, or conducting rigorous research as that of other disciplines. It is essentially resulted from several dislocations between landscape practice and modern scientific research. This article puts forward two solutions that will be visualized with a graphical interpretation.

2 Reasons of the Dislocations

The dislocation of holism and deconstruction stems from the intensification of reductionism in modern sciences that has promoted deconstruction as a means to describing and examining a complex system into several smaller components. Modern ecological-science research, for example, has been developed into a series of sub-disciplines, such as Autecology, Genecology, Community Ecology, and Ecosystem Ecology sorted by ones' biological system structure, and Agricultural Ecology, Environmental Ecology, Ecological Informatics, Urban Ecology, and Landscape Ecology according to ones' application fields. Ecological practice, however, sees a completely different situation: in urban and landscape planning and design, governmental agencies and designers are often asked to develop scenario-based holistic plans for the sites. It requires integrated design solutions to respond different demands with various considerations[2], which cannot be approached within the existing ecological disciplinary system.

The dislocation of elements and functions, as well as graphics and texts, is caused by the disjunction between landscape design and implementation. Design ideas are translated into tangible drawings through arrangements of landscape elements. However, contemporary scientific research focuses on functional configuration, which is mainly represented with narrative texts or data displays. A landscape element or a land-use form can accommodate a variety of functions, and a function of a place may also be supported by a variety of landscape elements. To landscape planning and design, elements and functions are inseparable and should be integrated by allying research and practice. At the same time, designers need to use intelligible drawings, PPTs, videos, or other visualized tools to convey ideas and to promote solutions. However, most research findings are often presented in forms of complicated diagrams that confuse designers or are hard to be grasped; besides, some outcomes fail meeting real needs for practice[3][4].



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3 Solutions and Approaches

Evidently, an effective integration between single-aimed modern scientific research and multi-goaled planning and design practice (that involve multiple elements) is urgently required. Such gaps can be bridged through innovative methods in teaching and scientific research.

3.1 Methods for Problem-Finding and -Addressing

Problem-finding and -addressing is part and parcel of bridging holism with deconstruction and linking elements with functions. Designers need to profoundly examine the physical and social settings of sites, understand impacting factors, and abstract the key problems. This process is to: 1) avoid blind application of generic design concepts (like building up a low-carbon place or an urban sponge) or forms, and to identify specific design objectives to tackle site problems; 2) make designers be aware of how to conduct an evidence-based design, what scientific support they need, and where to obtain them.

3.2 Methods to Synthesize and Visualize Scientific Results

Research result synthesizing and visualization is required for integrating deconstruction with holism, linking

2. 解决这些错位的两个重要手段即是发现与分析问题以及归纳与图示化科研成果。

2. A graphical interpretation of the dislocations between landscape design practice and modern scientific research and the solutions

functions with elements, and visualizing textual description into graphical interpretation. Modern scientific research might not be able to solve all reality problems, but a great number of research findings and results have been presented or recorded in various forms of publications. Such scattered, complicated findings and results need to be synthesized, translated, and represented into clear and tangible visualized forms to better support physical applications in planning and design practice[5]. In other words, this representing process gathers scientific discoveries and knowledge from different disciplines (such like Hydrology, climate sciences, Landscape Ecology), and synthesizes and reinterprets them into certain plain guidelines or patterns for spatial planning and design (e.g. the regional design guidelines summarized by Aina T. Classen[6], and the guidelines for design of eco-transition belts published by U.S. Department of Agriculture[7]).

4 Conclusion

To sum up, the dislocations between landscape planning and design practice and modern scientific research reflect as the gaps between holism and deconstruction, elements and functions, as well as graphics and texts, which can be closed by strengthening problem-finding and -addressing, and synthesizing and visualizing of research results particularly through graphical interpretation.

It is important to note that the dislocations in this article are argued in landscape or urban dimensions. In ecological dimensions, urban and landscape planning design is one of the most commonly found processes that change our physical environment, and requires a combination of multiple thinking modes and perspectives. Ecological problems at other scales, particularly small-scale ecological problems and related restoration processes, may not see a dislocation of scientific research and practice. Because pure ecological problems can be completely resolved through scientific study or the resilient self-maintenance mechanism of natural communities themselves. We ought to understand that urban and landscape planning and design alters and shapes physical environments in a more complex way and involves multiple-dimension considerations impacted by social factors, resulting in a more serious dislocation between ecological research and ecological practice[8]. **LAF**

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