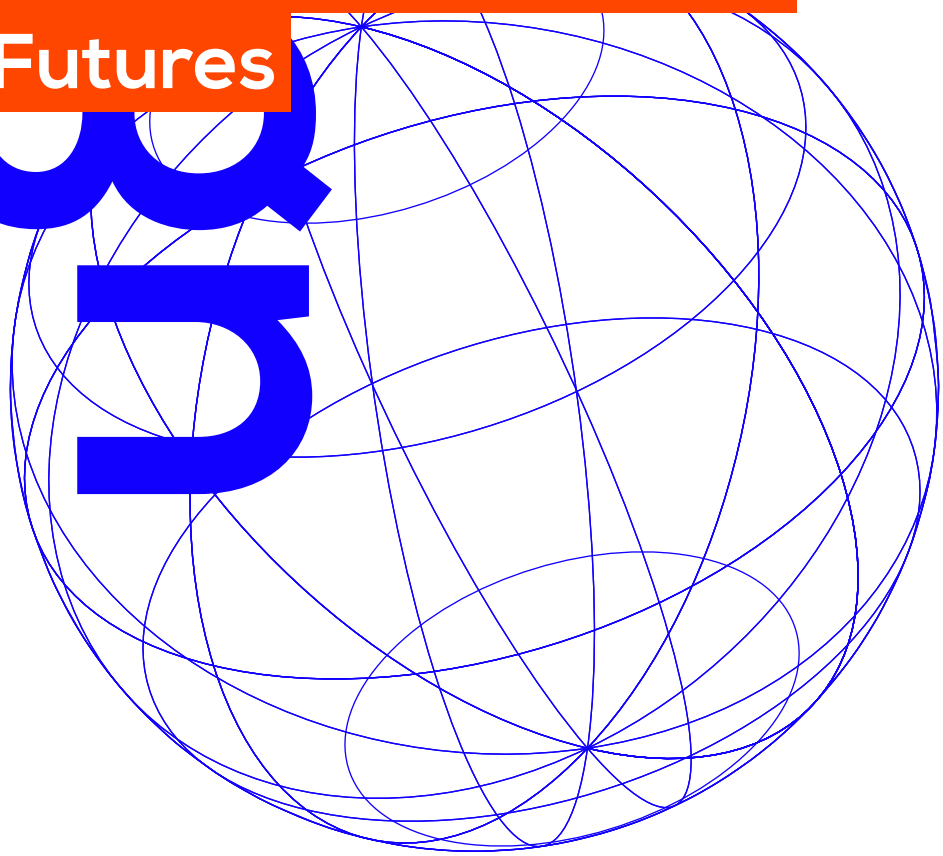
ICDF DESIGN FUTURES

設計未來

2020设计未来线上国际会议

Online International Conference on Design Futures 2020



清華大學 Tsinghua University

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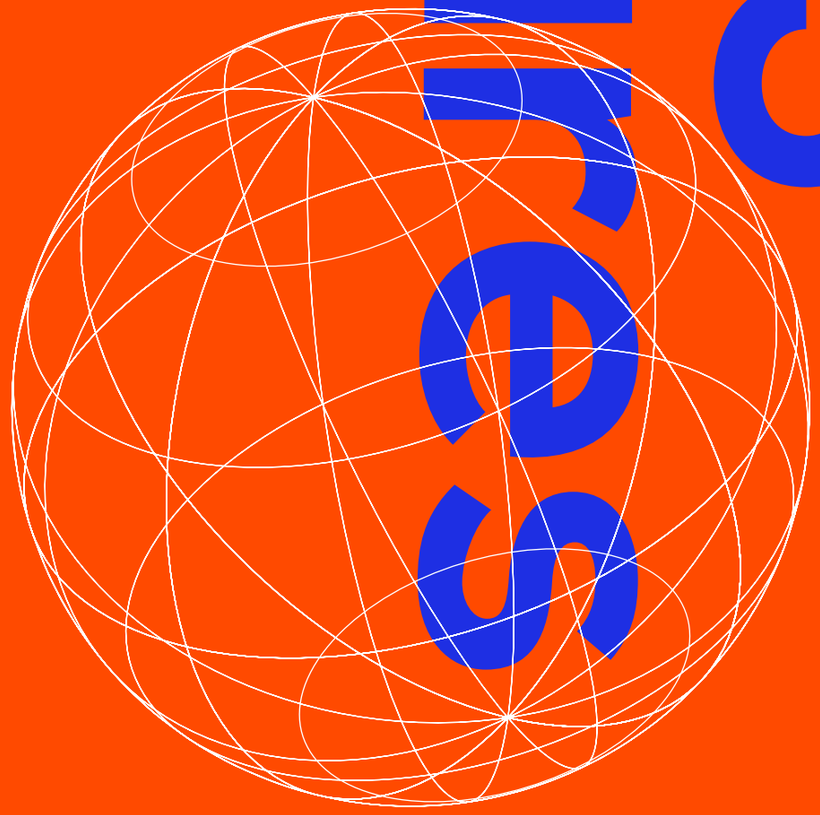

在急剧变化的当下，探讨趋势、审视变革、通过设计创造未来价值，成为全新的议题。从以物为中心、以用户为中心、以社会为中心，以自然为中心，到以未来为中心的设计，设计未来将所有事物的未来可能性——包含人类主体与外在客体的动态发展——作为设计的新内容与标准。

以设计学和未来学为基础，设计未来从人文视野展望未来研究，在产品与服务中融入对世界观、价值观的社会人文视角宏观思考；它为设计赋予时间变量，将演变过程与趋势视为设计的有机组成，为设计思考和实践注入未来思维，帮助创造者通过未来审视当下设计与技术发展路径。

本次论坛将从四个维度展开设计未来对话：
未来探索——新常态下塑造未来社会文化；
未来学说——将未来思维融入设计方法；
未来赋能——多层次视角下产业与创新趋势；
未来趋势——未来生活场景实验与智慧社会实践。

我们希望这次会议可以成为设计未来的对话开端，激励更多创新力量加入到设计未来的队伍，一起创造合意的未来！

As the current situation is under the dramatic variation, tendency discussing, revolution surveying and future values creating through design, have increasingly become the innovative topics.

From material-centered, user-centered, society-centered, nature-centered to future-centered design, design futures takes the future possibilities of all things, which includes the dynamic development of human internal subjects and external objects, as the brand new content and standard of design.

Basing on design and futurology, design futures vision the future research through humanistic perspective, integrating the macro views of world and value into the products and services, endowing design with time variables, regarding evolution processes and tendency as organic components, infusing future thinking into design researches and practices, which can help innovators to examine current design and technology development paths through the futures.

Design future dialogue of the forum will be unfolded from these four dimensions:
1. Future Exploration: Shaping the future social culture under the new normalcy;
2. Future Theory: Integrating future thinking into design method;
3. Future Empowerment: Multiple perspective view of the industry and innovation tendency;
4. Future Trend: Future life experiment and intelligent society practice.

Expecting this Design futures international conference could be the origination of design futures dialogue, which absorbs new blood to join the team and co-create a preferable future.

2020设计未来国际会议

INTRODUCTION TO INTERNATIONAL CONFERENCE ON DESIGN FUTURES 2020

2020 年 11 月 7-8 日、14-15 日，由清华大学主办，清华大学中意创新基地协办，美国卡耐基梅隆大学设计学院和米兰理工设计学院联合主办的设计未来国际会议 ICDF 2020 在线上召开。本次会议的大会主席是清华大学副校长杨斌，执行主席是清华大学中意设计创新基地主任郦金梁，会议的学术主席分别是来自卡耐基梅隆大学的皮特 • 司库佩里（Peter Scupelli）教授、来自米兰理工大学的安娜 • 芭芭拉（Anna Barbara）教授和来自清华大学的付志勇教授。

会议全程在线上举行，持续 4 天，历经两个周末。11 月 7 日、14 日是主旨演讲和圆桌论坛，共邀请了 7 位国内和 17 位分别来自美国、意大利、英国、德国、比利时、阿联酋的知名学者给出演讲，分享他们的前沿理论与实践。11 月 8 日、15 日的 Future Ideas Lab 未来创想实验室环节则邀请了 16 位在各自领域内有突出成果的青年学者参与四个不同主题的工作坊中。

2020 设计未来线上国际会议于 2020 年 11 月 15 日星期日北京时间下午 16 时圆满结束。来自国内外著名机构学者专家共聚云端，围绕设计未来探讨前沿学术思路，分享跨界创新实践。

本次会议围绕“设计未来”（Design Futures）”的主题，探讨“未来研究”和“思辨设计”对创新思维的启发、“短期未来”与“长期未来”对创新

On November 7-8 and 14-15, 2020, the international conference ICDF 2020 on the future of design, sponsored by Tsinghua University, CO sponsored by Sino Italian innovation base of Tsinghua University, and jointly sponsored by the school of design of Carnegie Mellon University and the school of design of Milan Institute of technology, was held online. The chairman of the conference is Yang Bin, vice president of Tsinghua University, and the executive chairman is Li Jinliang, director of Sino Italian design innovation base of Tsinghua University. The Academic Chairmen of the conference are Professor Peter scupelli from Carnegie Mellon University, Professor Anna Barbara from Milan University of technology and Professor Fu Zhiyong from Tsinghua University.

The conference was held online for 4 days and lasted for two weekends. On November 7 and 14, the keynote speech and round table forum invited 7 domestic and 17 well-known scholars from the United States, Italy, Britain, Germany, Belgium and the United Arab Emirates to give speeches and share their cutting-edge theories and practices. On November 8 and 15, 16 young scholars with outstanding achievements in their respective fields were invited to participate in workshops on four different topics.

The 2020 design future online international conference was successfully concluded at 16 p.m. Beijing time on Sunday, November 15, 2020. Famous institutional scholars and experts from home and abroad gathered in the cloud to explore cutting-edge academic ideas and share cross-

趋势的影响、“未来思维”和“设计思维”对创新实践的推动。会议将为海内外设计与创新领域的教育者、研究者、实践者、学生以及其他跨界创新人士提供一个探索学科前沿领域、讨论未来变革方向，构建国际学术社区的合作平台。

border innovation practices around the future of design.

Focusing on the theme of "design futures", this meeting discussed the inspiration of "future research" and "speculative design" on innovative thinking, the impact of "short-term future" and "long-term future" on innovation trend, and the promotion of "future thinking" and "design thinking" on innovation practice. The conference will provide a cooperation platform for educators, researchers, practitioners, students and other cross-border innovators in the field of design and innovation at home and abroad to explore frontier disciplines, discuss future change directions and build an international academic community.

设计未来国际作品展

EXHIBITION INTRODUCTION ON DESGIN FUTURES

“远见 • 可见”——2020 设计未来国际作品展（Foresight • Visible — International Exhibition on Design Futures 2020）作为 2020 设计未来线上国际会议（ICDF2020）主题论坛的延伸，分别从未来纪事、未来赋能、未来演进与未来展望四个视角呈现。在急剧变化的当下，探讨趋势、审视变革、通过设计创造未来价值，成为全新的议题。“设计未来”从人文视野展望未来科技对社会生活影响，将演变与转型视为创新的有机组成，支持创造者融合未来思维与设计思维，以远见引领行动，使未来可期可见，协力构建人类命运共同体的合意未来。

“远见 • 可见”——2020 设计未来国际作品展于 2020 年 11 月 27 日在成都市天府新区紫光 • 天府芯城正式启动，由清华大学中意设计创新基地主办，成都天府新区天府文创城（中意文化创新产业园）管理委员会、清华大学艺术与科技创新基地、紫光 • 天府芯城联合承办。展览当天，天府文创城管委会副主任刘杰、清华大学中意基地副主任付志勇教授、紫光海阔集团品牌中心总经理王元等嘉宾莅临现场，清华大学中意设计创新基地主任郦金梁连线参与，来自政府、企业、学校等关注和支持设计创新的各界人士热情观看了此次展览。展览为期 10 天，于 12 月 6 日闭幕。

"Foresight • visible - International Exhibition on design futures 2020", as an extension of the theme forum of icdf2020, is presented from four perspectives: future chronicle, future empowerment, future evolution and future outlook. In the current era of rapid changes, exploring trends, examining changes and creating future value through design have become new topics“ "Design the future" looks forward to the future impact of science and technology on social life from a humanistic perspective, regards evolution and transformation as an organic component of innovation, supports creators to integrate future thinking and design thinking, leads actions with foresight, makes the future visible, and works together to build a consensual future of a community of human destiny.

"Vision • visible" -- 2020 design future international exhibition was officially launched in Ziguang Tianfu core city, Tianfu new area, Chengdu on November 27, 2020. It was hosted by Sino Italian design innovation base of Tsinghua University and jointly undertaken by the Management Committee of Tianfu cultural and creative city (Sino Italian Cultural Innovation Industrial Park), art and scientific and technological innovation base of Tsinghua University and Ziguang Tianfu core city, Tianfu new area, Chengdu. On the day of the exhibition, Liu Jie, deputy director of Tianfu cultural and creative city management committee, Professor Fu Zhiyong, deputy director of Sino Italian base of Tsinghua University, Wang Yuan, general manager of Ziguang haikuo group brand center, and other guests attended the exhibition. Li Jinliang, director of Sino Italian design innovation base of Tsinghua

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Organizer
Tsinghua University

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School of design, Carnegie Mellon University
Facolta del Design, Politecnico di Milano

Undertaker
Sino Italian design innovation base of Tsinghua University

清華大學 Tsinghua University

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国际会议

INTERNATIONAL
CONFERENCE

Future Design Forum

国际会议介绍

INTRODUCTION TO INTERNATIONAL CONFERENCE

2020 设计未来线上国际会议由清华大学主办，清华大学中意创新基地协办，美国卡耐基梅隆大学设计学院和米兰理工设计学院联合主办，于 2020 年 11 月 7 日星期六北京时间下午 2 时 45 分正式拉开了帷幕。来自国内外著名机构学者专家共聚云端，围绕设计未来探讨前沿学术思路，分享跨界创新实践。

本次会议以设计学和未来学为基础，设计未来从人文视野展望未来研究，在产品与服务中融入对世界观、价值观的社会人文视角宏观思考；它为设计赋予时间变量，将演变过程与趋势视为设计的有机组成，为设计思考和实践注入未来思维，帮助创造者通过未来审视当下设计与科技发展方向。

The 2020 design future online international conference was hosted by Tsinghua University, CO sponsored by the Sino Italian innovation base of Tsinghua University, and jointly sponsored by the school of design of Carnegie Mellon University and the Institute of design of Milan Institute of technology. It officially opened at 2:45 p.m. Beijing time on Saturday, November 7, 2020. Famous institutional scholars and experts from home and abroad gathered in the cloud to explore cutting-edge academic ideas and share cross-border innovation practices around the future of design.

Based on design and futurology, this conference looks forward to future research from a humanistic perspective, and integrates Macro Thinking from a social humanistic perspective on world outlook and values into products and services; It gives time variables to design, regards the evolution process and trend as an organic component of design, injects future thinking into design thinking and practice, and helps creators examine the current design and scientific and technological development direction through the future.

对未来世界的思索和展望既是设计创新出发点也是它的落脚点。纵观人类社会的发展，每一次社会的革新或生活的改变都建立在新问题的产生和有效解决上，会议将以“激活·创造·未来”为核心主题，邀请专家学者从设计创新视角呈现对未来的展望，致力于推动设计学科在智慧城市、人工智能以及数字科技等高端产业的发展，挖掘领域中潜在的创意领军，以“点”带“面”式推动设计学科的全面发展。

本次会议在海内外进行同时直播，累计观看量80,319 人。

Thinking and looking forward to the future world is not only the starting point of design innovation, but also its foothold. Throughout the development of human society, every social innovation or life change is based on the generation and effective solution of new problems. The conference will take "activation, creation and future" as the core theme, invite experts and scholars to present their prospects for the future from the perspective of design innovation, and strive to promote the development of design disciplines in smart cities, artificial intelligence, digital technology and other high-end industries, Explore potential creative leaders in the field and promote the all-round development of the design discipline with "point" and "surface".

The conference was broadcast live at home and abroad, with a total of 80319 viewers.

国际会议活动

INTERNATIONAL CONFERENCE ACTIVITIES

本次国际会议立足于在当下这样一个极具变化的时代，意图通过设计行动创造未来价值。以设计学和未来学为基础，从人文视野展望未来研究，为设计赋予时间变量和未来思维，帮助创造者通过未来审视当下设计与科技发展方向。

本次会议是全程线上进行的。整个会议持续 4 天，历经两个周末。11 月 7 日和 14 日是主旨演讲和圆桌论坛，邀请在国际上享有盛誉的海内外知名学者，分享他们的前沿研实践和理论。

主旨演讲和圆桌论坛共邀请了 7 位国内嘉宾和 17 位来自美国、意大利、英国、德国、比利时、阿联酋的嘉宾给出演讲。线上论坛的主题演讲从设计未来、未来学、思辨设计、设计探索四个方向进行对话。专题论坛分别从以下四个角度展开：未来探索（思辨、韧性、共益）：新常态下塑造未来社会文化趋势；未来学说（方法、工具、教育）：未来思维融入设计方法与教育模式；未来赋能（科技、产业、生态）：多层次视角下的产业与创新趋势；未来趋势（城市、场景、服务）：未来生活场景实验与智慧社会实践。

This international conference is based on the current era of great change and intends to create future value through design actions. Based on design and futurology, it looks forward to future research from a humanistic perspective, endows design with time variables and future thinking, and helps creators examine the current development direction of design and science and technology through the future.

The meeting was held online. The whole meeting lasted four days and lasted two weekends. On November 7 and 14, the keynote speech and round table forum invited well-known scholars at home and abroad with international reputation to share their cutting-edge research practice and theory.

The keynote speech and round table forum invited 7 domestic guests and 17 guests from the United States, Italy, Britain, Germany, Belgium and the United Arab Emirates to give speeches. The keynote speech of the online forum carries out dialogue from four directions: design future, futurology, speculative design and design exploration. The special forum was launched from the following four perspectives: future exploration (speculation, resilience and mutual benefit): shaping the future social and cultural trend under the new normal; Future theory (methods, tools, education): integrating future thinking into design methods and

未来创想实验室 IdeasLab 则面向国内青年学者，开展观点分享及论坛讨论。共邀请了 16 位在各自领域内有突出成果的青年研究者参与进来。分别从思辨未来，未来教育、未来传达、未来城市四个话题展开分享。

educational models; Future empowerment (Science and technology, industry and Ecology): Industry and innovation trend from a multi-level perspective; Future trend (city, scene, service): future life scene experiment and smart society practice.

IdeasLab, the future creation laboratory, is open to domestic young scholars to share views and discuss in forums. A total of 16 young researchers with outstanding achievements in their respective fields were invited to participate. Share from four topics: thinking about the future, future education, future communication and future city.

“设计未来”国际会议致辞

OPENING SPEECH AT THE "DESIGN FUTURES" INTERNATIONAL CONFERENCE

杨斌
YANG BIN

清华大学副校长
Vice-principa, Tsinghua University

首先感谢美国卡耐基梅隆大学设计学院和意大利米兰理工大学设计学院，与清华大学一起联合举办本次“设计未来”国际会议，为各位提供交流平台，围绕“设计未来”探讨前沿学术思路并分享跨界创新实践。欢迎各位！

习近平总书记指出，世界发展正面临“百年未有之大变局”。新冠肺炎疫情仍在全球蔓延，全球性挑战日益严峻。唯有加强对话，以创新的方式主动应对挑战，才能在危机中育新机、于变局中开新局。察势者智，驭势者赢；以超前的眼光规划未来、在时代的浪潮中砥砺前行，这是历史赋予高等教育的责任与使命。此次会议正是希望从学术的角度寻求解决方案，促进科技与经济、社会协同共生、融合发展，将“未来思维”融入创新实践，以应对充满不确定性的未来。

清华大学关注前沿科研学术领域的发展，致力于为国内外教育、科研、人文领域的合作与交流搭建战略性平台，并融合艺术、科技、文化、创新的力量，探索未来历史变革的趋势，为全球可持续发展做出贡献。

此次大会从未来探索、未来学说、未来赋能和未来趋势四个维度，共同探索“未来思维”与“设计思维”的融合。未来探索从思辨、韧性、共益三个角度展开，探索如何在新常态下塑造未来社会文化；未来学说从方法、工具、教育三个类别细化，探讨将“未来思维”融入设计方法与教育模式的可能性；未来赋能从科技、产业、生态三个领域深入，探究多层次视角下的产业与创新发展的方向；未来趋势从城市、场景、服务三个关键词入手，探寻未来生活场景实验与智慧社会实践的潜力。

未来已来，今天来自世界各地的专家学者云端相聚，交流前沿学术成果、探讨跨界创新实践，是高等教育为全球可持续发展做出的一项非常有价值、有意义的举措。希望此次大会可以吸引更多创新力量，加入“设计未来”这一前沿对话，携手应对风险挑战、共建美好地球家园。

First of all, I would like to thank the school of design of Carnegie Mellon University in the United States and the school of design of Milan University of technology in Italy for jointly organizing this International Conference on "design future" with Tsinghua University, providing you with an exchange platform to discuss cutting-edge academic ideas and share cross-border innovation practices around "design future". Welcome!

General secretary Xi Jinping pointed out that the development of the world is facing "a great change in the past hundred years". The novel coronavirus pneumonia epidemic is still spreading all over the world, and global challenges are becoming increasingly serious. Only by strengthening dialogue and taking the initiative to respond to challenges in innovative ways can we cultivate new opportunities in the crisis and open up a new situation in the changing situation. Those who observe the potential are wise, and those who control the potential win; It is the responsibility and mission of higher education entrusted by history to plan the future with an advanced vision and forge ahead in the tide of the times. It is the hope of this conference to seek solutions from an academic perspective, promote the coordinated symbiosis and integrated development of science and technology, economy and society, and integrate "future thinking" into innovative practice to deal with the uncertain future.

Tsinghua University pays attention to the development of cutting-edge scientific research and academic fields, is committed to building a strategic platform for cooperation and exchange in the fields of education, scientific research and Humanities at home and abroad, integrates the forces of art, science, technology, culture and innovation, explores the trend of future historical changes, and makes contributions to global sustainable development.

The conference explored the integration of "future thinking" and "design thinking" from four dimensions: future exploration, future theory, future empowerment and future trend. The future exploration is carried out from the perspectives of speculation, resilience and mutual benefit to explore how to shape the future social culture under the new normal; The future theory is divided into three categories: methods, tools and education, and discusses the possibility of integrating "future thinking" into design methods and educational models; In the future, empowerment will go deep into the three fields of science and technology, industry and ecology to explore the direction of industrial and innovative development from a multi-level perspective; The future trend starts with the three keywords of city, scene and service to explore the potential of future life scene experiment and smart society practice.

The future has come. Today, experts and scholars from all over the world gather in the cloud to exchange cutting-edge academic achievements and explore cross-border innovative practices. It is a very valuable and meaningful measure made by higher education for global sustainable development. It is hoped that the conference can attract more innovative forces, join the cutting-edge dialogue of "designing the future", work together to meet risks and challenges and build a better earth home.

“设计未来”线上国际会议致辞

SPEECH AT THE "DESIGN FUTURES" ONLINE INTERNATIONAL CONFERENCE

丽金梁
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由清华大学主办，中意设计创新基地承办，卡耐基梅隆大学设计学院、米兰理工大学设计学院合作举办的“设计未来”线上国际会议将在今天正式启动。

承办本次会议的中意设计创新基地，是清华大学在欧洲设立的首个教育科研基地，是中意两国开展设计创新合作的综合性平台。中意设计创新基地整合中外优势教学科研资源，培养具备全球胜任力的拔尖创新型人才和中国设计创新领军人才，致力于带动中国工业设计创新发展，建设具有全球影响力的设计创新中心，实现从“中国制造”到“中国创造”突破。促进中意及中欧教育科研和文化交流，服务国家“一带一路”倡议。

今年新冠疫情的全球大流行，给全人类带来了前所未有的挑战，这一充满变革的时刻让我们认识到，以对话、协作与交流来探索解决之道的重要性。同时也应该积极规划“远景目标”作为行动指南，分享创新理念，共享创新方法来提升应对挑战的能力。

中意设计创新基地承办本次会议，正是以实际行动作出积极回应。本次会议将围绕“设计未来”（Design Futures）的主题，探讨“未来研究”和“思辨设计”对创新思维的启发、“短期未来”与“长期未来”对创新趋势的影响、“未来思维”和“设计思维”对创新实践的推动。会议将为海内外设计与创新领域的教育者、研究者、实践者、学生以及其他跨界创新人士提供一个探索学科前沿领域、讨论未来变革方向，构建国际学术社区的合作平台。

感谢本次会议联合学术主席，美国卡耐基梅隆大学的 Peter Scupelli、米兰理工大学 Anna Barbara 和清华大学付志勇的精心策划和组织，目前已经邀请国内外著名院校、实验室和机构的 24 位专家学者（包括美国 7 位、意大利 5 位、英国 2 位、德国 1 位、比利时 1 位、阿联酋 1 位、国内 7 位）发表精彩的讲演。11 月 7 日和 14 日，与会专家学者将从“未来探索”——新常态下塑造未来社会文化、“未来学说”——将未来思维融入设计方法、“未来趋势”——未来生活场景实验与智慧社会实践、“未来赋能”——多层次视角下产业与创新趋势，这四个主题展开分享和研讨。

11 月 8 日和 15 日，本次会议将举办四场在线“未来创想实验室”，采用嘉宾分享与引导互动的模式，围绕“思辨未来”、“未来教育”、“未来传达”、“未来城市”的议题，20 位青年学者将与大家在云端进行交流和对话，希望通过头脑风暴和创意激发，达成更广泛的共识、引发更有价值的行动。

此外，会议中还将发布“2020 服务设计蓝皮书”和“创新 • 新基建概念视频”，分别展现清华大学在服务设计领域的研究成果和设计驱动创新的模式探索。

本次会议将向海内外进行直播，特此感谢各媒体平台的支持。期待大家能够在交流和互动中，深化跨界创新的理念，发展“设计未来”的方法，以远见引领实践，共同创造合意的未来！

Sponsored by Tsinghua University and undertaken by Sino Italian design innovation base, the "design future" online international conference jointly organized by the school of design of Carnegie Mellon University and the school of design of Milan Polytechnic University will be officially launched today.

The Sino Italian design innovation base hosting this conference is the first educational and scientific research base established by Tsinghua University in Europe and a comprehensive platform for Sino Italian design innovation cooperation. Sino Italian design innovation base integrates advantageous teaching and scientific research resources at home and abroad, trains top-notch innovative talents with global competence and leading talents in Chinese design innovation, is committed to driving the innovation and development of Chinese industrial design, building a design innovation center with global influence, and realizing the breakthrough from "made in China" to "created in China". One belt, one road, and one China, one European and one European region.

This year's global pandemic COVID-19 has brought hitherto unknown challenges to all mankind. This time of change has made us realize that it is important to explore solutions with dialogue, collaboration and communication. At the same time, we should actively plan the "vision" as a guide to action, share innovative ideas and innovative methods to improve our ability to meet challenges.

The Sino Italian design innovation base hosted this meeting, which is a positive response with practical actions. Focusing on the theme of "design futures", this meeting will discuss the inspiration of "future research" and "speculative design" on innovative thinking, the impact of "short-term future" and "long-term future" on innovation trend, and the promotion of "future thinking" and "design thinking" on innovation practice. The conference will provide a cooperation platform for educators, researchers, practitioners, students and other

cross-border innovators in the field of design and innovation at home and abroad to explore frontier disciplines, discuss future change directions and build an international academic community.

Thanks to the joint academic chairman of this conference, Peter scupelli of Carnegie Mellon University, Anna Barbara of Milan University of technology and Fu Zhiyong of Tsinghua University for their careful planning and organization. At present, 24 experts and scholars from famous universities, laboratories and institutions at home and abroad have been invited (including 7 from the United States, 5 from Italy, 2 from the United Kingdom, 1 from Germany, 1 from Belgium, 1 from the United Arab Emirates 7 in China) delivered wonderful speeches. On November 7 and 14, the participating experts and scholars will share and discuss the four themes of "future exploration" - shaping future social culture under the new normal, "future theory" - integrating future thinking into design methods, "future trend" - future life scene experiment and smart society practice, "future empowerment" - industry and innovation trend from a multi-level perspective.

On November 8 and 15, the conference will hold four online "future creation laboratories", which will adopt the mode of guest sharing, guidance and interaction. Around the topics of "thinking about the future", "future education", "future communication" and "future city", 20 young scholars will communicate and talk with everyone in the cloud, hoping to stimulate their creativity through brainstorming, Reach a broader consensus and trigger more valuable actions.

In addition, the conference will also release "2020 service design blue book" and "innovation • new infrastructure concept video" to show the research results of Tsinghua University in the field of service design and the exploration of design driven innovation mode respectively.

This meeting will be broadcast live at home and abroad. I would like to thank all media platforms for their support. We look forward to deepening the concept of cross-border innovation, developing the method of "designing the future", leading practice with foresight and jointly creating a desirable future in the exchange and interaction!

主题演讲嘉宾分享

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KEYNOTE SPEAKERS

本次大会有八位嘉宾进行主旨演讲

第一组主旨演讲的主题是未来学，由清华大学美术学院教授蔡军老师带来演讲《为未来社会的挑战而设计》，和未来学家、皇家艺术学院、帝国理工学院、中央美术学院客座教授 Clive van Heerden 为观众分享《Why Futures？为什么要探索未来？》

第二组主旨演讲的主题是设计未来，由清华大学的付志勇教授和美国卡耐基梅隆大学的 peter scupelli 教授为大家呈现最新的设计未来方法工具和教育实践。付老师给出了演讲《从设计思维到未来思维 远见引领变革》，Peter 介绍了他名为 Design futures 的一门在线开放课程。

第三组主旨演讲的主题是设计探索，米兰理工大学的 anna Barbara 教授分享了将时间作为设计工具的方法，清华大学美术学院涂山教授以《技术的遮蔽》为题，介绍了他对于技术手段的审慎思考。

最后一组主旨演讲的主题是思辨设计。由广东工业大学的张黎教授给出演讲《不确定驱动的设计未来：论新兴设计实践的思辨转向》带观众一起重新审视设计中的思辨转向，由美国佐治亚理工学院副教授、Design Issues 编委会成员 Carl DiSalvo 博士分享他对思辨设计以及面向未来的设计的相关思考。

Eight guests will give keynote speeches at the conference

The theme of the first group of keynote speeches is futurology. Cai Jun, a professor at the Academy of fine arts of Tsinghua University, gave a speech "designing for the challenges of the future society", and Clive van Heerden, a futurist, a visiting professor at the Royal Academy of Arts, Imperial College of technology and Central Academy of fine arts, shared "why futures?"? Why explore the future

The theme of the second group of keynote speeches is designing the future. Professor Fu Zhiyong of Tsinghua University and Professor Peter scupelli of Carnegie Mellon University present the latest methods, tools and educational practice of designing the future. Mr. Fu gave a speech from design thinking to future thinking: foresight leads change. Peter introduced an online open course called design futures.

The theme of the third group of keynote speeches is design exploration. Professor Anna Barbara of Milan Polytechnic University shared the method of using time as a design tool. Professor Tu Shan of the Academy of fine arts of Tsinghua University introduced his careful thinking on technical means with the title of "shielding of technology".

The theme of the last group of keynote speeches is speculative design. Professor Zhang Li of Guangdong University of technology gave a speech "uncertainty driven design future: on the speculative turn of emerging design practice", which led the audience to re-examine the speculative turn in design. Dr. Carl disalvo, associate professor of Georgia Institute of technology and member of the editorial board of design issues, shared his thoughts on speculative design and future oriented design.

演讲题目 TOPIC OF SPEECH

主旨演讲：未来学 Keynote: Futurology

为未来社会的挑战而设计

DESIGNED FOR THE CHALLENGES OF THE FUTURE SOCIETY

蔡军
CAI JUN

清华大学美术学院教授
清华大学艺术与科学研究中心
设计管理研究所所长
曾任清华大学美术学院工业设计系主任

Professor, Institute of Industrial Design, Academy of Arts & Design, Tsinghua University
Director of the Institute of Design Management, Art and Science Research Center, Tsinghua University

蔡军老师从今年形式出发，指出人类今年在经历一个巨大的变革时期，这个变革由于过去的经济、科技、社会等能量的聚集已经呈现一种山雨欲来风满楼的状态，而新冠疫情加速了对此的冲击，这样的“黑天鹅”现象是大家都不曾预料的。在这个时期，我们站在一个十字路口，看到过去的冲击，同时又在面临巨大变革。

另外，蔡军老师以澳洲森林大火、日本福岛地震为例，指出除了疫情之外，全球的生态环境、人工环境现在也在面临巨大的冲击状态，以及超级大国的核威胁，说明世界正在变得越来越不平静，所有的矛盾和焦点看似都在冲突和爆发。

接下来蔡老师提出：设想过去，我们昨天设想的未来是不是就是今天?

人类的历史社会中间，其实一直不断地在去设想明天会怎样。从自动驾驶等案例来看，昨天人们设想的与今天在人们眼前的，其实非常相似。
昨天的人在设想今天，我们今天的人是否设想的未来就是明天呢?

蔡老师带领我们回顾了近年来人们对于未来机器人的探索，以微软小冰、索菲亚机器人为例，指出，人工智能正在改变人们生活状态，不管是虚拟的人，还是机器表现的类似真实的人，正在逐步地侵入我们的世界和生活，在跟我们对话，而这种发展是有利有弊的，带来方便与与高效的同时也可能带有一定危险性。

在这样的状态中间，未来人和机器之间的关系是什么?

在研究未来的机构中间提出了非常有意思的未来三个发展思路的描述，一是传统的世界，二是一个野蛮人世界，三是未来的世界。

因此，塑造新的思维模式是面向未来挑战非常重要的一个基础。

我们如何去塑造一个未来思维?

未来思维是在设计思维的基础上，去增强未来认识、构建洞察未来的方法论。

1） 构建未来的伦理
形成一个具备社会责任的组织架构，使新的企业适应未来的发展。

2）构建未来的知识结构
不能从单点思维的角度去思考问题，更多地需要从系统的角度去讨论

3） 教育的重要性
未来是可以通过设计赋能的，因为设计本身涉及到的思考、工具、逻辑和处理问题的过程，涉及到了从产业到社会创新、生态、环境、金融、服务等等，最为核心的就是设计具有的思维发展、发散和整合的能量。

From the beginning of this year, Mr. Cai Jun pointed out that mankind has undergone a great change this year. This change has already presented a state of rain and wind coming from the past, such as economic, technological, social and other energy gathering, and the new crown epidemic has accelerated the impact. Such a "black Swan" phenomenon is not expected. In this period, we stand at a crossroads, see the impact of the past, and are facing great changes at the same time.

In addition, taking the forest fire in Australia and the Fukushima earthquake in Japan as examples, Cai Jun pointed out that in addition to the epidemic, the global ecological environment and artificial environment are now facing a huge impact, as well as the nuclear threat of the superpower, indicating that the world is becoming more and more restless, and all contradictions and focuses seem to be in conflict and outbreak.

Next, Mr. Cai proposed: imagine the past. Is the future we imagined yesterday today?

In fact, in the middle of human history and society, we have been constantly imagining what will happen tomorrow. From the cases of automatic driving, what people imagined yesterday is actually very similar to what people see today.

Yesterday's people are imagining today. Are we imagining tomorrow as the future?

Mr. Cai led us to review people's exploration of future robots in recent years. Taking Microsoft Xiaobing and Sofia robots as examples, he pointed out that artificial intelligence is changing people's living conditions. Whether virtual people or real people represented by machines are gradually invading our world and life and talking to us. This development has both advantages and disadvantages, While bringing convenience and efficiency, it may also be dangerous.

In such a state, what is the relationship between man and machine in the future?

Among the institutions studying the future, this paper puts forward a very interesting description of three development ideas in the future, one is the traditional world, the other is a barbarian world, and the third is the future world.

Therefore, shaping a new mode of thinking is a very important basis for facing future challenges.

How do we shape a future mind?

Future thinking is based on design thinking to enhance future understanding and build a methodology for insight into the future.

1) Constructing future ethics
Form an organizational structure with social responsibility to make new enterprises adapt to future development.

2) Building the future knowledge structure
We can't think about problems from the perspective of single point of thinking, but we need to discuss them from the perspective of system

3) The importance of Education
The future can be empowered through design, because the design itself involves thinking, tools, logic and the process of dealing with problems, from industry to social innovation, ecology, environment, finance, services, etc. the most core is the energy of thinking development, distribution and integration of design.

演讲题目

TOPIC OF SPEECH

主旨演讲：未来学

Keynote: Futurology

为什么要预测未来?

WHY FUTURES?

克莱夫 • 范 • 希尔登
CLIVE VAN HEERDEN

vHM 设计未来创始人
皇家艺术学院、帝国理工学院、
中央美术学院客座教授

Founder and Director, vHM Design Futures, London
Visiting Lecturer of RCA, Imperial College, Central Academy of Fine Art

克莱夫·范·希尔登教授希望能够在政治、经济、文化、社会、环境等方面做预测，更准确地描述可进行长期预测的环境背景，更好地做新类型的产品创新。他指出，我们的目标是能够创造出一些线性增量发展的未来替代品，在企业当中，我们经常肯定他们在技术发展上是线性的、渐进式的，所以希望能够找到更广的视角，看到社会当中的变化，这样可以对一些事件提前预警，同时也可以提前发现一些新机遇。

克莱夫·范·希尔登教授希望我们能够通过历史的回溯来创造出一个未来。我们首先要了解未来是什么样的背景，然后我们需要真正的把它创造出来，让人们能够理解一个潜在的未来，我们用当代的、设计的语言来去诠释未来。

接下来， 克莱夫·范·希尔登教授举了电子纹身的例子，并强调了生态城市案例。在未来宜居城市的项目中，克莱夫·范·希尔登教授发现，从全球的角度来说，我们的产品在技术、流程、设计上都是考虑不周的。在以前的设计中，不管是工程设计，还是艺术设计，都没有具体考虑到它的产出和结果。他希望能够用量身定制的方法，去把各种不同的过程分离开来，希望能够设计出一个生态系统，让一个物体的产出可以成为另外一个物体的投入。而在 20 年后的现实世界，由于人口的翻倍增长，所以我们需要增加基本资源。我们和有预见性洞察的艺术家或非政府机构等合作，他们运用了各种不同的惊艳的技术，来处理人们的卫生问题。

克莱夫·范·希尔登又以降解处理器为例，讲解了其原理，展示了微型生态环境的构成和测试，并且分享了在设计过程中的感悟。他认为，因为人们现在缺少对于生态环境有响应的解决方案，更多的时候人们进行的是一种线性的发展规划，技术的发展是循序渐进的，但是我们更希望做到的是对未来进行预测，而不是简单的按部就班。 而且我们也会在

不同的领域进行未来的测试，创造一种在家庭当中的日常行为，产生对于社会、对于未来更好的影响。

通过这样的设计、创新和测试方式，我们可以进行非常宏观的，以前完全不可预测的行为的测试。我们更加关注基于问题的社会反应来进行实验，改变人们的思维，让人们以不同的视角去看待未来。

我们的思维方式不是去设定好一个结果，而是在这个领域当中，探索如何可以找到一个更好的应用，给未来带来更多的可能性。基于更加广泛的领域，比如政治、经济、技术、自然、生态等进行未来的描述，去应对各种不同的状况，去解决不同的问题。

Professor Clive van Hilden hopes to make predictions in politics, economy, culture, society and environment, more accurately describe the environmental background that can be predicted for a long time, and better make new types of product innovation. He pointed out that our goal is to create some future substitutes for linear incremental development. Among enterprises, we often affirm that they are linear and progressive in technological development, so we hope to find a broader perspective and see changes in society. In this way, we can early warn some events and find some new opportunities in advance.

Professor Clive van Hilden hopes that we can create a future by looking back on history. We must first understand what the future is like, and then we need to really create it so that people can understand a potential future. We use contemporary and design language to interpret the future.

Next, Professor Clive van Hilden gave an example of electronic tattoo and emphasized the case of eco city. In the future livable city project, Professor Clive van Hilden found that from a global perspective, our products are poorly considered in technology, process and design. In the previous design, no matter engineering design or art design, its output and results were not specifically considered. He hopes to use customized methods to separate different processes, and hope to design an ecosystem so that the output of one object can become the input of another object. In the real world 20 years later, due to the doubling of population, we need to increase basic resources. We work with visionary artists or NGOs who use a variety of amazing technologies to deal with people's health problems.

Clive van Hilden took the degradation processor as an example to explain its principle, show the composition and testing of micro ecological environment, and share the insights in the design process. He believes that because people lack solutions responsive to the ecological environment,

more often people carry out a linear development plan, and the development of technology is gradual, but we prefer to predict the future rather than simply step by step. Moreover, we will conduct future tests in different fields to create a daily behavior in the family and have a better impact on the society and the future.

Through such design, innovation and testing methods, we can test very macro and previously completely unpredictable behavior. We pay more attention to the problem-based social response to experiment, change people's thinking and let people look at the future from different perspectives.

Our way of thinking is not to set a result, but to explore how to find a better application in this field and bring more possibilities to the future. Describe the future based on a wider range of fields, such as politics, economy, technology, nature and ecology, to deal with different situations and solve different problems.

演讲题目 TOPIC OF SPEECH

主旨演讲：设计未来 Keynote: Design futures

从设计思维到未来思维：远见引领变革

FROM DESIGN THINKING TO FUTURES THINKING: FORESIGHT LEADS CHANGE

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Director, Tsinghua University Innovation and Entrepreneurship Teaching (special) Committee

付志勇老师的演讲包括了三方面的内容：从设计思维到未来思维，激发多元价值思辨；未来思维融入设计教育，培养反思的实践者；从未来设计到设计未来，远见引领当下行动。

未来学是社会学的分支，是综合研究人类重大领域的未来趋势、可能图景、面临挑战、应对策略等内容的学科，关注于更宏观、更复杂的世界系统。在这个领域已经发展了非常多的设计方法，我们希望把这样的方法应用在我们的设计当中。Future 变成 Futures 反映了“有多种可能性的”、“多元的”未来。未来思维是一种创造性的探索过程，运用不同的思维规划多元化的情景，寻求多种可能的答案，并且承认具有不确定性。

付老师援引夏威夷大学政治学系未来研究中心的教授兼主任 Jim Dator 的话，“未来不能被预测，但是替代性未来可以被预见。未来不能被预知，但是合意的未来可以被设想、发明、实施、连续评估、修订和重新设想。”

付老师展示了未来锥的图像。这是关于未来学非常重要的象征，也是大会 logo 的形象来源。我们更多追求的是合意的未来。替代性未来有四种：转型、成长、自律、崩溃。这个研究是把未来放在不同的视野中看未来的冲击对替代性未来的影响。

谈到“设计思维到未来思维”这个问题，付老师首先列举了设计思维发展的时间表。从传统设计到设计思维再进入到计算思维，这个过程应对的是当下的移动计算和前沿科技。在这样的趋势下，系统思维是一个更大的图景研究，未来思维是研究未来的可能性，设计思维是解决复杂问题的方法过程。我们会思考它们之间的区别和联系。

付老师用上图说明了设计思维和未来思维之间的区别和联系。设计思维是从当前的世界出发，通过洞察，发现了需求再去定义、构思，最终实现一个原形和产品。未来思维更强调从趋势出发，发现未来的信号，寻找相应的驱动力，通过对未来的预见，达成对多样化未来的描述。这通常会通过各种各样的人工制品进行呈现，从而呈现出可能的未来多元世界。

从以物为中心，到以用户为中心、以社会为中心，再到以未来为中心，这个过程体现了变革的趋势。本次会议发布了《2020 服务设计蓝皮书》，其实在各个设计领域，包括人机交互领域，未来思维也都有很多介入。

从论文研究的角度讲，付老师希望寻找一种可能的方式和方法，将设计虚构应用于交互设计和服务设计中，来应对城市或社会的各种复杂变化因素。

对于“未来思维融入设计教育，培养反思的实践者”，付老师表示，教育界需要思考如何将“设计未来”的概念引入教学。从当下行动、近期赋能与长期趋势结合的角度思考：未来思维如何增强设计教学中的思辨能力的培养？如何将思辨设计作为培养反思的实践者的手段？未来思维如何为设计教学发展提供启发与思考？

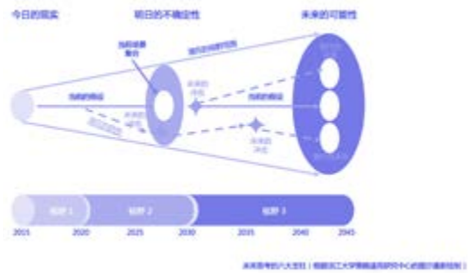
“设计未来”着眼于探索短期与长期未来对当下社会的影响，通过未来思维引领产业变革与社会进化，以共创性模式、思辨性方法、反思性实践，设计更合意的未来。

下图展示了几个概念之间的区别。思辨设计更强调批判性思维；设计虚构强调叙事实验；设计未来则以反思性实践输出产品与服务，最终促进产业发展。

对于“从未来设计到设计未来，远见引领当下行动”，付老师表示，“未来设计的主语是设计，设计未来的主语是未来，即如何设计多种未来，用我们的远见去引领当下的行动”。我们希望通过共创的方式，跨学科的合作，将未来思维融入设计思维。在学术界的研究中，针对设计虚构、思辨设计到未来研究，相关研究不尽相同。我们希望这样的研究可以具体指导到相关的实践当中。从“未来思维”到“设计未来”，综合考虑社会、科技、经济等等因素，把原形创新、场景创新、趋势创新与当下产业发展、城市建设和社会变革结合，推广到合意的未来。

付老师介绍了清华大学所做的“智慧实验室”的探索。这是将研究和实践相结合的尝试。living lab 是实验环境、生态系统，同时也是创新孵化服务。用这样的方式将城市和创新连接在一起，引导产学研合作，从而找到最终的解决方案。

付老师最后援引了《思辨一切》的作者安东尼·邓恩（Anthony Dunne）和菲奥娜·雷比（Fiona Raby）的话“设计是实现社会梦想的催化剂”。付老师希望通过对未来思考进而支持共益社会建设，通过长期的趋势研究赋能当下，通过行动来实现共创。



Mr. Fu's speech includes three aspects: from design thinking to future thinking, stimulating multi value speculation; Integrating future thinking into design education and cultivating reflective practitioners; From future design to future design, foresight leads current action.

Futures studies is a branch of sociology. It is a discipline that comprehensively studies the future trends, possible prospects, challenges and coping strategies of major human fields, focusing on a more macro and complex world system. Many design methods have been developed in this field. We hope to apply this method to our design. The transformation of future into futures reflects the "multiple possibilities" and "multiple" future. Future thinking is a creative exploration process, which uses different thinking to plan diversified scenarios, seek a variety of possible answers, and recognize uncertainty.

Mr. Fu quoted Jim dator, professor and director of the future research center of the Department of political science of the University of Hawaii, as saying, "the future cannot be predicted, but the alternative future can be predicted. The future cannot be predicted, but a desirable future can be conceived, invented, implemented, continuously evaluated, revised and re conceived. "

Teacher Fu showed the image of the future cone. This is a very important symbol of futurology and the image source of the conference logo. What we pursue more is a desirable future. There are four alternative futures: transformation, growth, self-discipline and collapse. This study is to look at the impact of future shocks on the alternative future from different perspectives.

Talking about the problem of "design thinking to future thinking", Mr. Fu first listed the timetable for the development of design thinking. From traditional design to design thinking and then to computing thinking, this process deals with the current mobile computing and cutting-edge technology. Under such a trend, system thinking is a larger picture research, future thinking is to study the possibility of the future, and design thinking is the method and process of solving complex problems. We will think about the differences and connections between them.
Mr. Fu explained the difference and connection between design thinking and future thinking with the figure above. Design thinking starts from the current world, finds the needs through insight, defines and conceives, and finally realizes a prototype and product. Future thinking puts more emphasis on starting from the trend, discovering the future signal, looking for the corresponding driving force, and achieving the description of the diversified future through the prediction of the future. This is usually presented through a variety of artifacts, thus presenting a possible future pluralistic world.

From taking things as the center, to taking users as the center, to taking society as the center, and then to taking the future as the center, this process reflects the trend of change. The conference released the 2020 service design blue book. In fact, there are many interventions in various design fields, including human-computer interaction.

From the perspective of thesis research, Mr. Fu hopes to find a possible way and method to apply design fit to interaction design and service design to deal with various complex changing factors of the city or society.

For "integrating future thinking into design education and cultivating reflective practitioners", Mr. Fu said that the educational community needs to think about how to introduce the concept of "design future" into teaching. Thinking from the perspective of the combination of current action, recent empowerment and long-term trend: how can future thinking enhance the cultivation of speculative ability in design teaching? How to use speculative design as a means to cultivate reflective practitioners? How can future thinking provide inspiration and thinking for the development of design teaching?

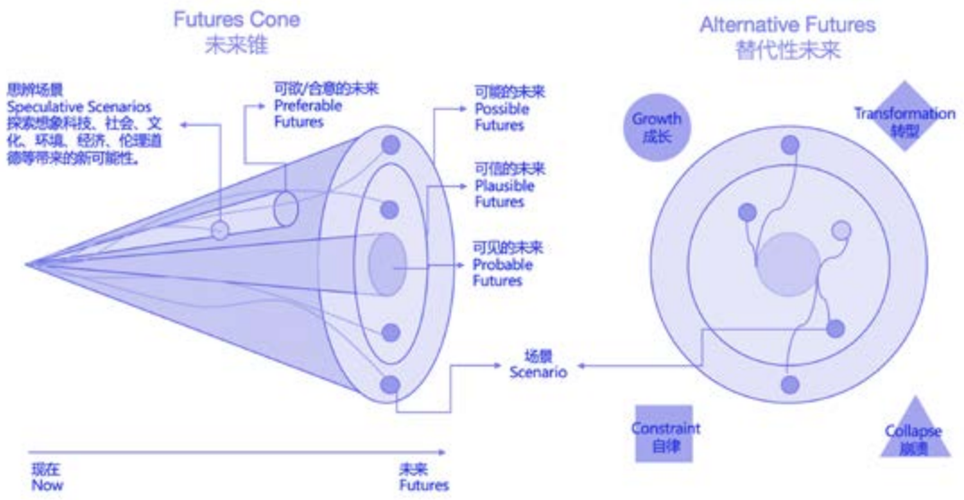
"Designing the future" focuses on exploring the impact of the short-term and long-term future on the current society, leading industrial change and social evolution through future thinking, and designing a more desirable future with CO creative mode, speculative method and reflective practice.

The following figure shows the differences between several concepts. Speculative design emphasizes more critical thinking; Design fiction and emphasize narrative experiment; Designing the future outputs products and services through reflective practice, and finally promotes industrial development.

For "from future design to future design, foresight leads current action", Mr. Fu said, "the subject of future design is design, and the subject of future design is the future, that is, how to design a variety of futures and use our foresight to lead current action". We hope to integrate future thinking into design thinking through co creation and interdisciplinary cooperation. In the academic research, the relevant research is different from design fiction, speculative design to future research. We hope that such research can be specifically directed to relevant practice. From "future thinking" to "designing the future", comprehensively consider social, scientific and technological, economic and other factors, and combine prototype innovation, scene innovation and trend innovation with current industrial development, urban construction and social reform to promote the desired future.

Mr. Fu introduced the exploration of "smart laboratory" made by Tsinghua University. This is an attempt to combine research and practice. Living lab is not only an experimental environment and ecosystem, but also an innovation incubation service. In this way, the city and innovation will be connected together to guide industry university research cooperation, so as to find the final solution.

Mr. Fu finally quoted Anthony Dunne and Fiona Raby, the authors of thinking about everything, as saying that "design is the catalyst for realizing social dreams". Mr. Fu hopes to support the construction of a mutually beneficial society by thinking about the future, empower the present through long-term trend research, and realize co creation through action.



演讲题目 TOPIC OF SPEECH

主旨演讲：设计未来 Keynote: Design futures

设计未来的教学

TEACHING TO DEXIGN FUTURES

皮特·司库佩里
PETER SCUPELLI

卡耐基梅隆大学尼伦伯格设计副教授
卡耐基梅隆大学学习环境实验室主任
Nierenberg Associate Professor in Design and Director of the Learning Environments Lab, School of Design, Carnegie Mellon University

我们的未来有很多不确定性，未来情境变得越来越复杂，诸如气候问题、全球疾病大流行等。同时社会也面临着“白人至上”、“种族主义”等问题。对此，皮特教授提出了疑问：我们的设计师如何应对这样的问题，用什么样的设计去解决社会上的挑战?

作为设计教育者，皮特教授经常向学生提出以上问题。设计思维是一个很强大的工具，它使我们的视角变得更宽广。当前人类对地球的影响是前所未有的，而设计在这其中可以发挥非常重要的作用。

皮特教授提到了“去未来化”，这是指我们当下“不去思考未来，但保有着未来的视角”。这意味着我们今天的所作所为是为了我们可以拥有共同的美好未来。

皮特教授强调了设计 4.0 的概念。他表示，设计 1.0 是传统的设计，设计 2.0 是产品的设计，设计 3.0 是组织性的转型设计，而设计 4.0 是社会转型的设计，它包括了国家、社会、星球所面临的挑战等等。

皮特教授还援引了 Arnold Wasserman 的研究。在 Arnold Wasserman 看来，设计 1.0 是以物品为中心，2.0 是着重于以人为本，设计 3.0 关于改变世界、改变社会以及社会的变革等，而设计 4.0 则是把以上设计理念都包含在转型设计上。当设计者面对整体社会层面上越来越大的问题时，各个层次的设计都需要调动起来。

作为一个设计教育者，皮特教授经常向学生提出以上问题。设计思维是一个很强大的工具，它使我们的视角变得更宽广。当前人类对地球的影响是前所未有的，而设计在这其中可以发挥非常重要的作用。对此，皮特教授提出了要解决的三个问题：时空中的设计、特定价值的设计、去全球化的设计。为了解决以上问题，皮特教授提出了“乌托邦”和“去乌托邦”。表示想要实现有理想的世界，我们需要对设计者进行教育。并且介绍了他在卡耐基梅隆大学相关的课程设置。他介绍了“设计未来”、“设计未来课堂导论”、“设计未来场景导论”三门课程。

皮特教授着重介绍了“设计未来”这一课程。课程采取翻转课堂的形式，面向大三、大四学生，包含了线下课和线上课。

皮特教授加入了学生的“反思实践”环节，学生在课堂上思考、讨论课上所学，帮助他们加深学习效果，让他们更好地将其应用到自己的设计工作中。在课程结束后，学生会在白板上罗列成果。这一课程包括了 15 周和 7 周两种课程设置。

皮特教授还强调了课程的相关内容是在和世界各个高校包括清华大学在内的教授学者的通力合作下完成的。课程目前在清华大学学堂在线有慕课课程。

We live in interesting times, with global challenges such as: Climate Emergency, COVID-19 pandemic, Black Lives Matter, and so forth. Such societal level challenges require a broader version of design than Design Thinking (e.g., empathize, define, ideate, prototype, test). Design educators worldwide seek to prepare designers to engage with such challenges. The societal challenges mentioned are global in nature and require at least three expansions on design thinking: designing in time, designing for sustainable, futures oriented values, and designing for planetary scale outcomes.
First, designing in time. Societal challenges such as the UN Sustainable Development Goals, require operating in both short-term and long-term time horizons. For example, according to the IPCC 2018 1.5C report, the climate emergency requires people to reduce their carbon emissions by over 50% by year 2030, and 100% by year 2050. Consequently, short-term design action needs to align with such long term goals.

Second, designing for sustainable, futures oriented values for planetary scale problems requires moving beyond Modernist design values (e.g., aesthetics, consumerism, economic growth) to include a futures oriented values-based approach. The Climate Emergency requires designers to commit to and act upon futures centered values so that short term actions today lead to desirable long term collective futures. Designers need to transition to new values and worldviews and design accordingly.

Third, the Anthropocene Era was created by design and affects life forms all over the planet. Likewise, solutions to planetary level problems need to work on multiple levels and scale globally.

Design education for 21st century challenges can significantly benefit from the field of Futures Studies. In this talk, I describe the Dexign Futures (DF) course and the related open-source project. Dexign Futures differs somewhat from other rich design futures traditions represented at this conference such as Design Fiction, Speculative

Design, Discursive Design, Experiential Futures, and so forth.

The term Dexign was originated by Arnold Wasserman in 2013 while we were co-teaching athe “Dexign the Future” course at Carnegie Mellon University. The term Dexign Futures explicitly focuses on aligning near-term design action with sustainable futures. The “X” signifies an experimental form of design combining design thinking with futures thinking to align near term design action with long-range vision goals – while navigating uncertainty and accelerating innovation toward desired futures. The 2013 Dexign the Future course lead to a series of related courses over the years: Introduction to Dexign Futures, Dexign Futures Seminar, and finally the “Dexign Futures” course.

The “Dexign Futures” course was created to teach undergraduate design students in the School of Design at Carnegie Mellon University a new set of design methods that combine futures thinking with design thinking. The course is taught with a flipped-classroom pedagogy. “Flipped” courses shift new-content exposure to pre-class work and use class time for hands-on application activities. Pre-class work includes online readings, videos, and interactive activities with immediate feedback; as well as a mechanism for students to submit questions to the instructor ahead of each class session. Weekly reflections asked students to explain how they might integrate futures methods into their design practices. These course materials have been taught five times at and iteratively improved. DF this semester is being taught as a flipped-class over ZOOM.

The flipped classroom materials described are available as open-source teaching materials through the dexignfutures.org open source project. Portions of the course materials are being tested with three global partners: at Tsinghua University in Beijing, China, Politecnico di Milano, Italy; and Georgia Tech University in Atlanta, Georgia, USA. In this lecture, I describe challenges and opportunities I’ve observed regarding teaching design students how to learn to apply futures methods within their nascent design practices.

演讲题目 TOPIC OF SPEECH

主旨演讲：设计探索 Keynote: Design Exploration

时间的设计是如何影响世界上的重大事件的

DESIGN FUTURE TIME_BASE PARADIGMS

安娜 • 芭芭拉
ANNA BARBARA

米兰理工大学室内和空间设计专业副教授
Associate Professor, Interior and Spatial Design, Politecnico di Milano

安娜 • 芭芭拉（Anna Barbara）指出，时间的设计是最重要的全球趋势之一，我们应将未来作为设计现在的重要工具。

安娜 • 芭芭拉（Anna Barbara）提出问题：我们生活在怎样的现在？
首先，她解释了收缩的现在的含义，告诉我们时间的形式在发生变化，我们正像一辆汽车一样，朝着未来行驶，从后视镜里面看到的是过去，而现在就简化为一瞬间。这就是我们当下的状况。

我们将情感和见解分解，通过智能手机、摄像机等过滤器去过滤我们给世界留下的遗产，这就让我们在现实和相关问题之间产生了距离，让我们和社会责任产生了距离，选择生活在舒适区，让我们变成了被动的旁观者而不是主动的参与者。

安娜 • 芭芭拉（Anna Barbara）提出，现在有越来越多的不同的视角，给我们带来了不同的见解，这也在改变我们设计和即将生存的空间的质量。我们希望对于所生存的空间、体验、经历做出反应，而我们的空间更多可能是 50 年前设计出来，完全不是现代的设计。与此同时，数字时代又给我们带来了完全不同的生活。

另外，对于时间的探索很重要的一点，是和移动、交通领域的创新细细相关。安娜 • 芭芭拉（Anna Barbara）以上图望着游泳池的人为例，屏幕上的游泳池比现实中的更让人兴奋，提出社交的方式使生活变得不再社会化。过度使用社交媒体，使我们有了界定感和存在感，我们现在跟身边人不亲近了，但与另外一个空间的人建立了联系。回到刚才所说的这一点，事实上我们在空间中漫步，同时我们漫步的时候并没有移动我们的脚步。我们现在甚至并不存在于空间中，我们的存在即是不存在。

在时间的压缩或者扩张中，不仅是设计者，人们最大限度提高生产率。我们都在不断地调整我们对于时间的适应性。现在到底是什么样的？随着时间不断压缩、扩张，我们变得越来越高效，我们的生产力得到了最大化，我们都像身在养殖场中的鸡一样，使用人造的，升起落下的太阳，但以一种不可持续的方式，使它们产出更多的鸡蛋。

我们现在变成了空间的消费者，我们对于地方的感觉和体验被扭曲、诱惑、享受和娱乐，即使在这个过程中使我们的生理节奏妥协，我们也变成了过度兴奋的消费者，产生了情绪上的暴食症。

最后安娜·芭芭拉（Anna Barbara）提出问题：对于未来设计而言，现在应该是什么样的？

学生才是生活在未来的人，她要求学生们设计一个希望能够去生活的空间，可以看到他们对未来的展望。她认为作为教师应当走出知识的反思，让自己站出去，能够让自己容纳进去，去教授方法，抛弃观念，教给学生们如何去问正确的问题，而不是仅仅简单给予答案。使学生们能够真正生活在一个有意识的时间空间里，建立真正的相近性、共享经济和开放知识。如果教师们能够承担起不抛下任何人，不论社会、文化背景，针对所有性别的年轻人的、平等的方案，在未来，学习将是高度可持续性的。

Anna Barbara pointed out that the design of time is one of the most important global trends, and we should take the future as an important tool for designing the present.

Anna Barbara asked the question: what kind of present do we live in?

First of all, she explained the present meaning of contraction and told us that the form of time is changing. We are driving towards the future like a car. What we see in the rearview mirror is the past, and now is simplified to a moment. This is our current situation.

We decompose our emotions and opinions and filter our heritage to the world through smart phones, cameras and other filters, which gives us a distance between reality and related problems, between us and social responsibility, and choose to live in a comfortable area, making us passive bystanders rather than active participants.

Anna Barbara pointed out that there are more and more different perspectives, which have brought us different opinions, which is also changing the quality of our design and the space we will live in. We hope to respond to the living space, experience and experience, and our space may have been designed 50 years ago, not modern design at all. At the same time, the digital age has brought us a completely different life.

In addition, the exploration of time is closely related to the innovation in the field of mobile and transportation. Anna Barbara, for example, looks at the swimming pool in the above figure. The swimming pool on the screen is more exciting than in reality. She puts forward a social way to make life no longer socialized. Excessive use of social media gives us a sense of definition and existence. Now we are not close to the people around us, but we have established contact with people in another space. Back to the point just mentioned, in fact, we walk in space, and we don't move our steps when

we walk. We don't even exist in space now. Our existence is nonexistence.

In the compression or expansion of time, not only designers, people maximize productivity. We are constantly adjusting our adaptability to time. What is it like now? With the continuous compression and expansion of time, we become more and more efficient, and our productivity has been maximized. We all use artificial, rising and setting sun like chickens in farms, but make them produce more chicken eggs in an unsustainable way.

We have now become consumers of space. Our feelings and experiences of place have been distorted, seduced, enjoyed and entertained. Even if our physiological rhythm is compromised in this process, we have become over excited consumers, resulting in emotional bulimia.

Finally, Anna Barbara asked: what should it be like for future design?

Students are the people who live in the future. She asked students to design a space where they hope to live and see their prospects for the future. She believes that as a teacher, we should go out of the reflection of knowledge, let ourselves stand out, be able to accommodate ourselves, teach methods, abandon ideas, and teach students how to ask correct questions, rather than simply give answers. So that students can really live in a conscious time and space, establish real proximity, sharing economy and open knowledge. If teachers can afford equal programs for young people of all genders without leaving anyone behind, regardless of social and cultural background, learning will be highly sustainable in the future.

演讲题目 TOPIC OF SPEECH

主旨演讲：设计探索 Keynote: Design Exploration

技术的遮蔽

TECHNOLOGY'S ALETHEIA

涂山
TU SHAN

清华大学美术学院游艇及水上环境设计研究所 (IYNED) 所长
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涂山教授经常问学生一个问题，“为什么这个时代我们还会用石头来做建筑？”这个问题涂山教授得到过各种各样的回答。谈到技术的方式和外在的形式，涂山教授以风车为例，提到了它跟自然共同工作，与自然之间互动、合作的关系。

实际上，在人类生产生活的其他方面，我们也是同样地与自然合作：自然下雨，我们收割，获取到种子。然而现在人类的技术进步使得人与自然之间的关系产生了很大的变化。现在的建筑在形态方面使用了全新的语言，获取能量的电厂也早已变成与自然对抗的状态，来显现它的能力。人类的技术实际上是在榨取资源，通过压迫自然来获取能量。可持续发展的概念正好相反，我们更多回归到风能和太阳能，更多去跟自然直接获取能量。

而建筑的形式上，金字塔与中央电视台形态上的对比非常完整地反映了现代形态的变化。金字塔的技术在当时是最好的，现在很难想象在没有目的的情况下，凭借宗教信仰把巨型的石块堆积起来形成和自然、重力完全吻合的建筑。现代的中央电视台更多则忽视了重力，它不再是一个自下而上或者自上而下单边环形的形态。建筑的形态对比说明了时代的技术能力，同时从形态上做了一定的去弊。技术本身揭示了一些内容，它具有非常强的指向作用。

OPPO 与清华合作了一个项目，希望通过对 OPPO 的理解对其技术理念进行创新，并将其结合到商业的店面展陈里。通过一年的时间，涂山完成了装置的设计。结合 OPPO“智美无边界”的理念，涂山从“边界”出发做了第一个装置。装置由两个部分组成。第一个内容为“雾宫”，它是由玻璃组成的迷宫。“雾宫”在通电情况下完全透明，观者进入后通过重力装置触发周边的玻璃使其变得不透明。从“有边无界”进去后反而迷失，更加找不到自己的路，这其实也体现了对技术的一种迷失：远看很清晰，近看完全看不清路径，所谓“不识庐山真面目，只缘身在此山中”。

在 751 国际设计周上，涂山在会场中展示了新的装置：L=C。L=C 通过炒饭艺术小组的舞团在其间的互动，讲述了技术和人的关系。表演在论坛开始之前与装置相结合进行了演出。炒饭小组扮演了三种不同的角色：人、神、兽，三个部分由不同的空间组成。

L=C 不是一个公式，是一个关于边界、空间的围合。L 是短的形态，等号是平行，C 是围合。L 体现了方向性，同时既保持了开放性又有一定的防御性。等号是一种平行世界，没有交集，没有交叉。这个结构是最不稳定的，非常脆弱。C 最接近完整，且有一个出口，实现了兼顾，体现了自由实际上非常受限。

以上是涂山教授分享，他认为工具不只是达成目的的手段，而是世界构造的一个方式，是物凸现自己的方式。什么物能出场，什么物不能出场，以什么方式出场取决于我们的技术。

Tu Shan often asks students a question, "why do we still use stones to build buildings in this era?" Tu Shan has received various answers to this question. When it comes to the way and external form of technology, Tu Shan takes the windmill as an example and mentions the relationship of interaction and cooperation between it and nature.

In fact, in other aspects of human production and life, we also cooperate with nature: when it rains, we harvest and obtain seeds. However, the technological progress of mankind has made great changes in the relationship between man and nature. Today's architecture uses a new language in form, and the power plant that obtains energy has already become a state of confrontation with nature to show its ability. Human technology is actually extracting resources and obtaining energy by oppressing nature. The concept of sustainable development is just the opposite. We return more to wind energy and solar energy and get more energy directly from nature.

In the form of architecture, the comparison between the pyramid and CCTV completely reflects the changes of modern form. Pyramid technology was the best at that time. Now it is difficult to imagine that without purpose, huge stones are piled up by virtue of religious belief to form a building completely consistent with nature and gravity. Modern CCTV ignores gravity more. It is no longer a bottom-up or top-down unilateral ring shape. The comparison of architectural form shows the technical ability of the times, and at the same time, it has done some disadvantages in form. Technology itself reveals some contents, which has a very strong directional effect.

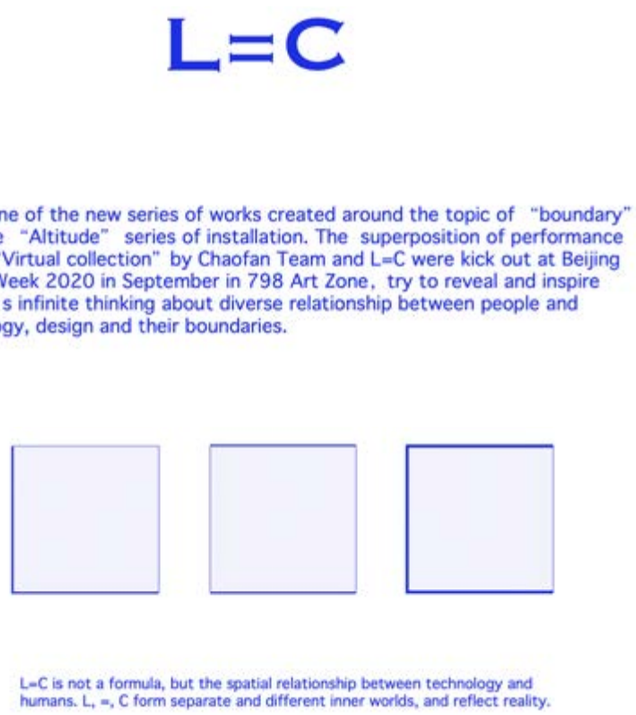
Oppo has cooperated with Tsinghua University in a project, hoping to innovate its technical concept through the understanding of oppo and integrate it into the commercial store exhibition. In one year, Tu Shan completed the design of the device. Combined with oppo's concept of "Zhimei has no boundary", Tu Shan made the first device from the "boundary". The device consists of two parts.

The first content is "fog Palace", which is a maze composed of glass" The "fog Palace" is completely transparent when powered on. After the viewer enters, the gravity device triggers the surrounding glass to make it opaque. In fact, it also reflects a kind of loss of Technology: it is very clear to see from a distance, but it can't see the path from a close look. The so-called "I don't know the true face of Lushan Mountain, but only because I am in this mountain".

At the 751 international design week, Tu Shan showed a new device in the venue: I = C. L = C tells the relationship between technology and people through the interaction between the dance troupe of the fried rice art group. The performance was performed in combination with the installation before the beginning of the forum. The fried rice group plays three different roles: man, God and beast. The three parts are composed of different spaces.

L = C is not a formula, but an enclosure of boundary and space. L is a short form, the equal sign is parallel, and C is encirclement. L reflects the directionality, while maintaining both openness and a certain degree of defense. The equal sign is a parallel world with no intersection and no intersection. This structure is the most unstable and fragile. C is the closest to integrity and has an exit, which realizes both consideration and reflects that freedom is actually very limited.

The above is shared by Professor Tu Shan. He believes that tools are not only a means to achieve an end, but a way of world construction and a way for things to highlight themselves. What can play, what can't play, and how to play depends on our technology.



演讲题目 TOPIC OF SPEECH

主旨演讲：思辨设计 Keynote: Speculative Design

新兴设计实践的思辨转向

THE SPECULATIVE TURN OF EMERGING DESIGN PRACTICES

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人类世现实叠加技术新自由主义与资本全球主义的双重压力，近年来全球设计学界兴起了一股“以事物为中心”（thing-centered design）、“不止是以人为中心的设计”（More-Than Human Centred Design）、“物志学”（thing ethnography）等这类以“去人类中心”为意图、具有“后人类”意义的实践趋势。实际上，理论界已经较早地讨论并预判了这种趋势。新物质主义（new materialism）的思潮首先表现在技术哲学、人类学、文学理论等领域，由于 AI 与物联网技术的普及与渗透，直到近两年其在设计领域的影响力才逐渐体现出来。比如 HCI 领域已发生的三次知识浪潮（Harrison et al 2007）、美国游戏设计师伊恩·博格斯特（Ian Bogost 2012）提出的“异形现象学”（alien phenomenology）、以及 Bardzell 和 Bardzell（2015, 2016）提出的“人文主义交互设计”（humanistic HCI）的研究方法等。

上述实践与理论研究共同指向了一种“思辨转向”，以不确定性为驱动，以设计虚构与思想实验为主要方法去想象多重未来的可能，并提供替代性的选择以启发，并为大众赋能，使其可以重估自身处境、反思人与物以及世界的关系、并谨慎研判新兴技术的社会影响等。本次演讲将首先阐明不确定性美学的民主优势与政治潜能，并以后人类设计（posthuman design）、物导向设计（object-oriented design）、女性主义思辨设计（feminist speculative design）、话语性设计（discursive design）为例，分别论述上述设计实践的差异化特点，以及共性的思辨转向趋势。在以思辨转向为特点的当代设计思潮中，设计被重点塑造为修辞的当代形式，借助设计实践擅长的可视化与日常属性，借助信仰的传播并推动行动的发生。

后人类设计：“人并不是唯一的能动者”的这一观点，不论是拉图尔于 20 世纪 80 年代确立的“行动者网络理论”（ANT）及其之后形成的反人类中心主

义、还是在后人类主义、亦或是人类世的反思中，均得到了不同程度的认同。反思人类本位的设计原则，对“以人为中心”设计本体论进行修正，以“非人”为另一种主体去推测后人类（post-human）时代的可能。

物导向设计：以物导向本体论（object-oriented ontology）为哲学基础，以物具有超出关系的实在性作为认识论核心，对处于物联网或被人工智能技术赋能的物及其交互方式进行以物作为异形主体的推测与思辨，从而实现对“人导向设计”的补充，以后人类的态度对人类世进行反思，对现代性逻辑中人本主义进行纠正。物导向设计既是为了对抗人类中心主义的话语霸权，也从以物为主的视角为交互设计提供了更多创新的可能。

女性主义思辨设计：以性别多元主义与关怀伦理作为主旨，在技术、资本、男权的三种支配性力量之下，女性的处境及其问题尤其值得关注。结合女性主义的性别批判立场，思辨设计、思辨虚构（speculative fabulation）、思辨制定（speculative enactment）等实践，借助情境假设、隐喻修辞、反事实、归谬法等思想实验，能有效规避或突破女性在现实语境中的各种限制性条件，有效释放出有利于性别多元化发展的话语空间与实践可能。

话语性设计：在设计的实用主义维度之外，更加关注设计在智识方面的影响力，以物作为发问和开启对话的媒介，以传达观念和信仰并引起反思。在以修辞学、符号学、传播学、人类学等学科共同构建出的知识框架中，以想象力对事实进行虚构化的叙事，话语性设计将对时代与社会的批判性思考嵌入到人工制品及其日常生活的语境当中，并致力于形成某种新的、替代性话语。

Since the reality of the Anthropocene is superimposed on the dual pressures of technological neoliberalism and capital globalism, recently, a wave of ‘thing-centered design’, ‘more-than-human-centered design’, and ‘thing ethnography’ has emerged in the global design academia. Such practical trends with the intention of ‘de-human centered’ and with the meaning of ‘post-human’ are gradually crystal. In fact, the theoretical community has discussed and predicted this tendency earlier. The tide of new materialism was first expressed in the fields of philosophy of technology, anthropology, literary theory, etc. It was only because of the popularization and penetration of AI and the IoT technology that its influence in design practice was gradually manifested in the past two years. For example, the three paradigms have occurred in the HCI field (Harrison et al. 2007), the ‘alien phenomenology’ proposed by American video game designer Ian Bogost (2012), and Bardzell and Bardzell (2015, 2016) proposed the‘humanistic HCI’as design research methods.

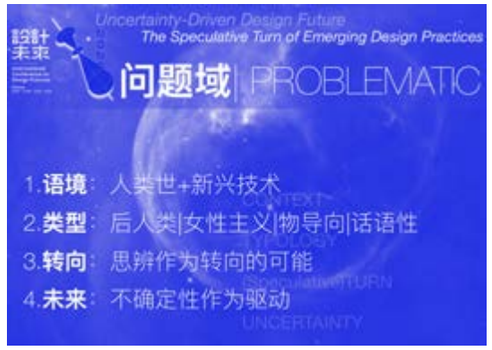
The above-mentioned practical and theoretical researches jointly point to a ‘speculative turn’, which is driven by uncertainty, using design fiction and thought experiments as the main methodology to imagine multiple future possibilities, and provide alternatives to inspire and empower the public to reassess their own situation, reflect on the relationship among human, things and the world, and discreetly judge the social impact of emerging technologies. This lecture will first clarify the democratic advantages and political potential of the aesthetics of uncertainty, and then demonstrate the common trendy of ‘speculative turn’ from the perspective of post-human design, object-oriented design, feminist speculative design, and discursive design. In the contemporary thought trend of design practice based on the speculative turn, design is shaped as a current form of rhetoric, with the superiority of its visualization and mundane attributes, which promotes the occurrence of actions by the spread of beliefs.

Post-human Design: The idea of ‘Humans are not the only agents’, whether it is the ‘Actor Network Theory’ (ANT) established by Latour in the 1980s and the anti-anthropocentrism formed thereafter, or In post-humanism, or reflections on the Anthropocene, it has been recognized to varying degrees. Reflecting on the human-based design principles, revising the ‘human-centered’ design ontology, the post-human design uses "non-human" as an alternate subject to speculate on the possibility of the post-human era.

Object-oriented Design: Based on the philosophical foundation of object-oriented ontology, the core of epistemology is the reality of things beyond the relationship, and speculation on the things as the alien subject, and the way of interacting with things empowered by IoT and AI, the object-oriented design realizes the supplement to the ‘human-oriented design’, reflects on the Anthropocene with the post-human stand, and corrects the humanism in the logic of modernity. Object-oriented design is not only to fight against the discourse hegemony of anthropocentrism, but also to provide more innovative possibilities for HCI from the object-oriented perspective.

Feminist speculative design: With gender pluralism and caring ethics as the main theoretical sources, the situation and problems of women are particularly worthy of attention under the three dominant forces of technology, capital, and patriarchy. Combining feminist gender-critical stance, speculative design, speculative fabulation, speculative enactment, etc, in virtue of situational assumptions, metaphorical rhetoric, counterfactuals, reductionism, and other thought experiments, it can effectively avoid or penetrate various restrictive conditions for women in the real world, in order to release the discourse space and practical possibilities that are conducive to the development of gender pluralism.

Discursive Design: In addition to the pragmatic dimension of design, it pays more attention to the intellectual influence of design that using objects as a medium for asking questions and opening dialogues to convey ideas and beliefs and arouse reflection and critique. In the knowledge framework jointly constructed by rhetoric, semiotics, communication, anthropology, and other disciplines, fictional narratives of facts are made with imagination, and the discursive design embeds the critical thinking about the times and society into the artifacts and contexts of everyday life and committed to forming a new and alternative discourse.



演讲题目 TOPIC OF SPEECH

主旨演讲：思辨设计 Keynote: Speculative Design

从思辨对象到思辨事件

FROM SPECULATIVE OBJECT TO EVENTS

卡尔 • 迪赛欧
CARL DISALVO

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卡尔·迪赛欧分享了对于“思辨设计以及对未来的设计”的想法和理念。
我们现在生存的世界有很多问题，而解决这些问题就要求我们能够用不同的方式想象未来。我们需要不同的未来。我们需要改变设计的方式，来帮助我们实现这些未来。

卡尔·迪赛欧分享了 Anthony Dunne 和 Fiona Raby 的“万物思辨”（Speculative Everything）项目。Anthony Dunne 和 Fiona Raby 的独特之处在于，他们不是工程师或者计算机科学家，他们不做复杂的机制或者算法。他们通过产品想象未来，从设计师的角度出发，通过每天的生活环境来想象未来。在这个项目当中，技术探索了未来机器人是怎样的。

项目描绘了一个圆形的机器人。它看上去很奇怪，它可以在地上和我们以一种非常奇怪的方式来互动。还有的机器人可以通过拾捡来与其互动，还有的就像是一个电视或者电脑的显示器一样，通过把它放到地上去倾听，通过沟通对话来与之互动。这些机器人的形式与设计是我们对于未来和这些智能设备一起生活的想象。这些并不是特别复杂的技术，但却是非常神奇的产品，设计师是可以做到的。

思辨设计的独特之处在于它并不仅仅聚焦未来，而是作为一个概念的持续存在和对于这个概念的认知。下方关于椅子的绘图体现了标准化的设计工作流程。对于一个传统的产品设计者，从草图到椅子，概念转化为了产品。然而未来的设计则可以让设计仅停留为一个概念，把它作为思想的工具，让我们去思考未来会是怎样的。这和标准的设计不一样，比如思辨设计，它可以停留在展示，不一定成为产品。它促使我们真正思考在特定环境下将如何生活。

Extrapolation Factory 非常独特的一点在于他们感兴趣的是在公共场合“思辨”如何发声。他们不

仅仅在博物馆或是昂贵的产品上发声，而是在每天日常的生活中发声。

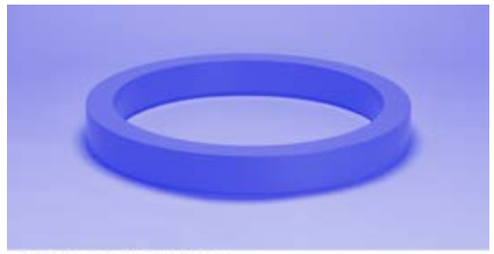
在美国，99 美分店非常受欢迎，人们可以去买非常廉价的产品。

99 美分店在玻璃上有一个“未来桶”。这不仅仅是设计，而是把这些设计产品都放到商店里，将物品放到真实的环境中。观者可以在其间走动，在商店中去看到这些 99 美分的物品，真正想象和体验一个廉价的未来。

把产品放到 99 美分店使我们看到一个共同思辨的过程。从聚焦在物体转向聚焦在事件进行共同创造，共同预见未来，预见世界。

猜想成为了社会探索的一种模式。社会探索的社会性体现在两个方面。首先，社会性是由于我们的共同生活所带来的社会问题与社会话题的共同体验。它从探索变成了社会性的活动。另一方面，社会性表现在活动的协作性上。99 美分店让人们真正走在一起，走进 99 美分店进行体验。

设计者怎么跟世界互动，怎么跟未来互动？不是声称我们有什么权利，有什么权威，而是跟别人一起来产生一种合力。我们的未来在不断改变，变得只有依附性，没有办法控制。但是未来也是充满希望的，它给我们提供一个空间，我们在其间可以改变，可以成长。



Dunne & Raby, *Technological Dream Series No. 1*, 2007

Carl Deseo shared his thoughts and ideas on "speculative design and design for the future".

The world we live in now has many problems, and solving these problems requires us to imagine the future in different ways. We need a different future. We need to change the way we design to help us achieve these futures.

Carl desaio shared Anthony Dunne's and Fiona Raby's "speculative everything" project. Anthony Dunne and Fiona Raby are unique in that they are not engineers or computer scientists. They do not make complex mechanisms or algorithms. They imagine the future through products, from the perspective of designers, and through the daily living environment. In this project, technology explores how robots will be in the future.

The project depicts a circular robot. It looks strange. It can interact with us on the ground in a very strange way. Some robots can interact with them by picking up. Others are like a TV or computer display. They can listen by putting it on the ground and interact with it through communication and dialogue. The form and design of these robots are our imagination of living with these intelligent devices in the future. These are not particularly complex technologies, but they are very magical products that designers can do.

The uniqueness of speculative design is that it does not only focus on the future, but also the persistence and cognition of a concept. The drawing on the chair below reflects the standardized design workflow. For a traditional product designer, from sketch to chair, the concept is transformed into product. However, future design can make design only stay as a concept, take it as a tool of thought, and let us think about what the future will be like. This is different from standard design, such as speculative design. It can stay in the display and does not necessarily become a product. It makes us really think about how we will live in a specific environment.

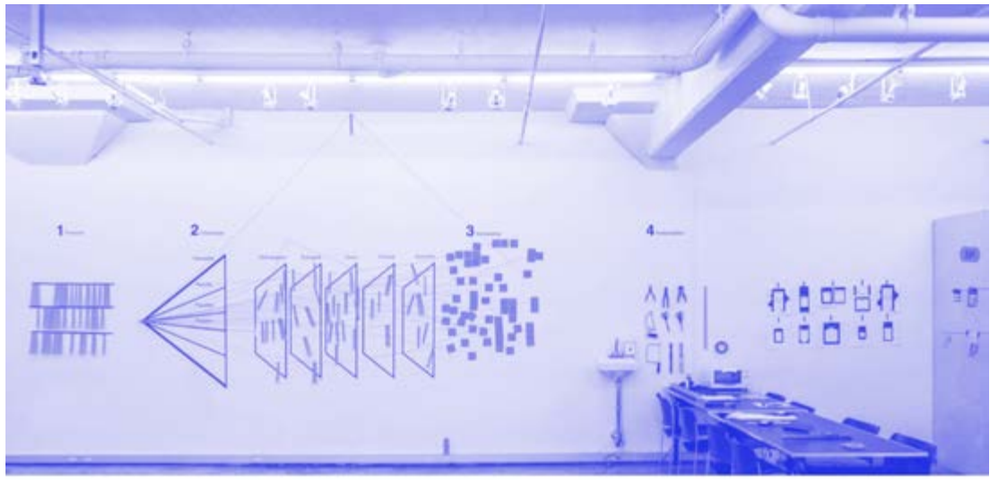
What makes extrapolation factory unique is that they are interested in "thinking" about how to make a sound in public. They make their voices not only in museums or expensive products, but in daily life.

In the United States, 99 American stores are very popular. People can buy very cheap products.

99 US branch has a "future bucket" on the glass. This is not just design, but putting these designed products in the store and putting the items in the real environment. Visitors can walk around, see these 99 cent items in the store, and really imagine and experience a cheap future.

Putting our products in the 99 US branch makes us see a process of common thinking. From focusing on objects to focusing on events, jointly create, jointly foresee the future and the world. Conjecture has become a model of social exploration. The sociality of social exploration is reflected in two aspects. First of all, sociality is the common experience of social problems and social topics brought about by our common life. It has changed from exploration to social activities. On the other hand, sociality is manifested in the cooperation of activities. The 99 US branch allows people to really walk together and experience in the 99 US branch.

How do designers interact with the world and the future? It is not to claim what rights and authority we have, but to produce a joint force with others. Our future is constantly changing, becoming only dependent and uncontrollable. But the future is also full of hope. It provides us with a space in which we can change and grow.



Extrapolation Factory, *99 Futures*, 2013

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圆桌论坛嘉宾分享

PANEL PRESENTATION

本次会议共有 16 位知名学者围绕四大维度给出 16 个论坛演讲并展开四次圆桌论坛。四大维度指的是未来探索、未来学说、未来赋能及未来趋势。未来探索是一种对未来社会文化趋势的思辨、探索未来社会的韧性及塑造新的共益模式。未来学说将未来思维融入设计方法与教育模式，侧重于讨论方法、工具和教育。未来赋能从科技、产业以及生态的多层次视角下的讨论产业与创新趋势。未来趋势则是从城市、场景、服务的角度探讨未来生活场景实验与智慧社会实践。

A total of 16 well-known scholars gave 16 forum speeches around the four dimensions and launched four round table forums. The four dimensions refer to future exploration, future theory, future empowerment and future trend. Future exploration is a kind of speculation on the future social and cultural trends, exploring the resilience of the future society and shaping a new model of mutual benefit. Futurism integrates futuristic thinking into design methods and education models, focusing on discussion methods, tools and education. Future empowerment discusses industry and innovation trends from the perspective of technology, industry and ecology. The future trend is to explore the future life scene experiment and smart society practice from the perspective of city, scene and service.

a/

圆桌论坛嘉宾分享

PANEL 1

未来探索
新常态下塑造
未来社会文化

FUTURE EXPLORATION:
SHAPING THE FUTURE SOCIAL CULTURE UNDER THE NEW NORMALCY

主持人

MODERATOR

程书馨
CHENG SHUXIN

中央美术学院设计学院创新设计方向教研室主任

Director of Innovation Design, School of Design, Central Academy of Fine Arts

演讲题目

TOPIC OF SPEECH

科幻未来主义的彼岸之花

LIGHT ON THE OTHER SIDE: WHAT IS SCI-FI FUTURISM

吴岩
WU YAN

南方科技大学人文科学中心教授
科学与人类想象力研究中心主任

Professor and Director, Science and Human Imagination Research Center, Humanities Center, Southern University of Science and Technology

把现实进行分类，可以分为“第一现实：物理 / 粒子现实”（physical/particle reality）、“第二现实：数码 / 虚拟现实”（digital/virtual reality）、“第三现实：终极现实”（expanded reality+IOT+5G/6G…）。

作为一名科幻作家，吴岩在过去 40 多年时间里一直从事科幻创作，从 1991 年开始从事科幻教学。科幻未来主义是中国科幻的第二种重要的创作理念。如果现实主义更关注现存的事物，未来主义更关注可能的事物。科幻未来主义在今天有强烈存在意义。从小说到影像到装置，科幻未来主义的实践在中国也丰富多彩。科幻未来主义伸展想象力的极限，希望超越现存，跳过近未来，走向更远的彼岸。中国的科幻未来主义有着深厚的文化传统，许多作品中传达着有意义的思想。

“科幻现实主义”和“科幻未来主义”是在中国具有一定影响力的创作思想。吴岩提到了它们在中国的诞生与发展历程。他强调了科幻现实主义是“处理第三种现实之下，人变成‘神’/ 后人类的状态及彼岸问题”。

吴岩提到了 2014 年他在未来事务管理局上的一次发言。他将其总结后形成了文章并收录在《中国科幻文学沉思录》一书中。

除了文字作品，吴岩还提到了展览。去年深港双城建筑双年展《九座城市，万种未来》（吴岩、陈娱，2020）分为两部分，一部分是一本书，这本书在历史上会永远存在；还有一个是展区，邀请了 9 位艺术家用 9 种不同的方式展现 9 种跳跃之后的未来。

在 QA 阶段，对于主持人提出的“科幻未来主义的具体场景或者具体例子”，吴岩表示，刘慈欣的很多作品具有很强的超越性。比如《三体》的第三部里有大量未来生命的存在与形式，以及整个宇宙的存在与形式。吴老师自己也曾在 2001 年写过有关两个世界的融合，以及人类在两个世界之间生存困难的问题。这些都是科幻未来主义的具体场景。

Reality can be classified into "physical / particle reality", "digital / virtual reality" and "expanded reality + IOT + 5g / 6G".

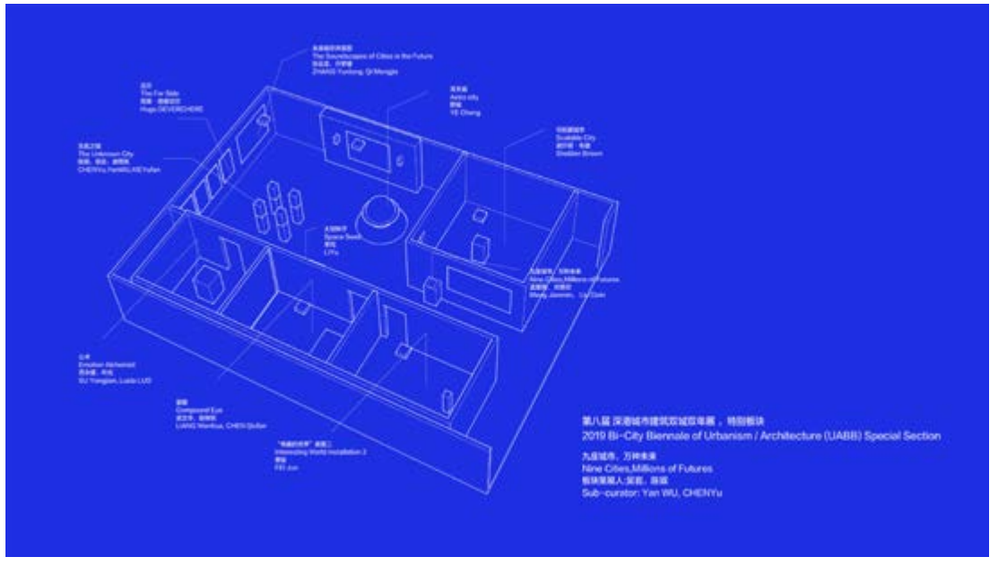
As a science fiction writer, Wu Yan has been engaged in science fiction creation for more than 40 years and has been engaged in science fiction teaching since 1991. Science fiction futurism is the second important creative concept of Chinese science fiction. If realism pays more attention to the existing things, futurism pays more attention to the possible things. Science fiction futurism has strong existential significance today. From novels to images to installations, the practice of science fiction futurism is also rich and colorful in China. Science fiction futurism extends the limits of imagination, hoping to surpass the existing, skip the near future and go further to the other side. Chinese science fiction futurism has a profound cultural tradition, and many works convey meaningful ideas.

"Science fiction realism" and "science fiction futurism" are creative ideas with certain influence in China. Wu Yan mentioned their birth and development in China. He emphasized that science fiction realism is "dealing with the state and other shore problems of human beings after becoming 'God' / under the third reality".

Wu Yan mentioned a speech he made at the future affairs authority in 2014. He summarized it into an article and included it in the Book Meditation on Chinese science fiction.

In addition to written works, Wu Yan also mentioned the exhibition. Last year's Shenzhen Hong Kong Twin City Architecture Biennale "nine cities, ten thousand kinds of future" (Wu Yan and Chen Yu, 2020) was divided into two parts. One part is a book, which will exist forever in history; Another is the exhibition area, which invited 9 artists to show the future after 9 jumps in 9 different ways.

In the QA stage, for the "specific scenes or specific examples of science fiction futurism" proposed by the host, Wu Yan said that many of Liu Cixin's works have strong transcendence. For example, in the third book of the three bodies, there are a large number of existence and forms of future life, as well as the existence and forms of the whole universe. Mr. Wu himself wrote about the integration of the two worlds and the difficulty of human survival between the two worlds in 2001. These are the specific scenes of science fiction futurism.



演讲题目

TOPIC OF SPEECH

面向后人类世的当代空间设计的新分类

A NEW TAXONOMY OF CONTEMPORARY SPATIAL DESIGN TOWARDS A POST-ANTHROPOCENE ERA

乔瓦娜 • 皮奇诺
GIOVANNA PICCINNO

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米兰理工大学设计学院有一个名为“Periscope（潜望镜）”的想法，以期透过它查看未来，通过各种项目进行探索。

现在，我们通过所面临的全球状况以及伦理问题来激发新理念。不管是对于人类还是对于生态状况，我们需要有新的责任和应对的方法。

当前空间设计的概念和场景，不仅仅是概念上的实验，而是会有一个看得见、摸得着的结果。我们需要一个全新的认知过程，通过这个过程我们可以去改变甚至彻底地推翻传统的方法，用新的伦理、新的地理概念去对待设计问题。我们用各种资源应对我们的设计，用跨学科的方法去想象复杂的现实。

乔瓦娜·皮奇诺还提到了自然和人为之间的关系。在下面两张图中体现了自然景观缓慢的发展演变以及人造的景观。自然景观具有一定的非理性。人造景观具有一定的逻辑性，会带来很多巨大的变革，也会实现一种平衡。有计划的、人为的变化会按照逻辑的原则来进行转变和发展。这种自然的非理性和人为的理性是非常有趣的关注点。

以下图景体现的是人类行为对于自然的影响。自然受工业活动的影响越来越明显。我们必须要去重新思考和认识全球面临的紧急状况，要去管控人类和生态环境的关系。

首先我们要去应用更多的知识，去回溯到不同的自然环境。在这样的框架中，我们需要用到迁移和全息的方式。这里我们看到的景象是对星球的城市化进行的全息景象。人类迁移并不是从一个地方到另一个地方，而是一种永久性的转移。它不是一个短暂的旅程，而是长期的永久性的变化。我们要去重新定义地球上正在发生的紧急事件，重新定义人类的行为对于自然的影响。

我们的社会总是面临各种各样的问题，我们需要创造一系列的项目来实现自给自足，实现可持续的发展，我们要去关注经济行为、关注人类行为，不同的项目都在试图去了解我们生活的星球，了解人与自然的关系。它对于自然平衡有很大影响。比如冰川消融问题，我们的学生重建了场景，认为我们可以重新恢复大自然的平衡，利用各种不同的方法，把问题变成未来创造平衡的机会。

在 QA 环节，主持人提出了“景观设计者、室内设计者、公民以及各个利益方在未来设计上如何合作以及具体解决方式”的问题。

乔瓦娜·皮奇诺表示，在未来，各学科的学者、科学家、工程师、公民都可以参与到各个复杂问题的解决中。通过各方提出具体需求，我们才能给到对应的支持。这并不是一个容易的过程，要有非常强大的规划能力才能够去管理协调各个方面。乔瓦娜·皮奇诺认为我们现在就要采取行动，并且要加强分享和交流。

The Design Institute of Polytechnic University of Milan has an idea called "periscope" in order to see the future through it and explore through various projects.

Now, we inspire new ideas through the global situation and ethical issues we face. Whether for human beings or ecological conditions, we need new responsibilities and coping methods.

The current concept and scene of space design is not only a conceptual experiment, but will have a visible and tangible result. We need a new cognitive process through which we can change or even completely overthrow the traditional methods and treat design problems with new ethics and new geographical concepts. We use various resources to deal with our design, and use interdisciplinary methods to imagine complex reality.

Giovanna piccino also mentioned the relationship between nature and man-made. The following two pictures show the slow development and evolution of natural landscape and man-made landscape. Natural landscape has certain irrationality. Artificial landscape has a certain logic, which will bring many great changes and achieve a balance. Planned and man-made changes will change and develop according to the principles of logic. This natural irrationality and artificial rationality are very interesting concerns.

The following picture shows the impact of human behavior on nature. Nature is more and more affected by industrial activities. We must rethink and understand the global emergency and control the relationship between human beings and the ecological environment.

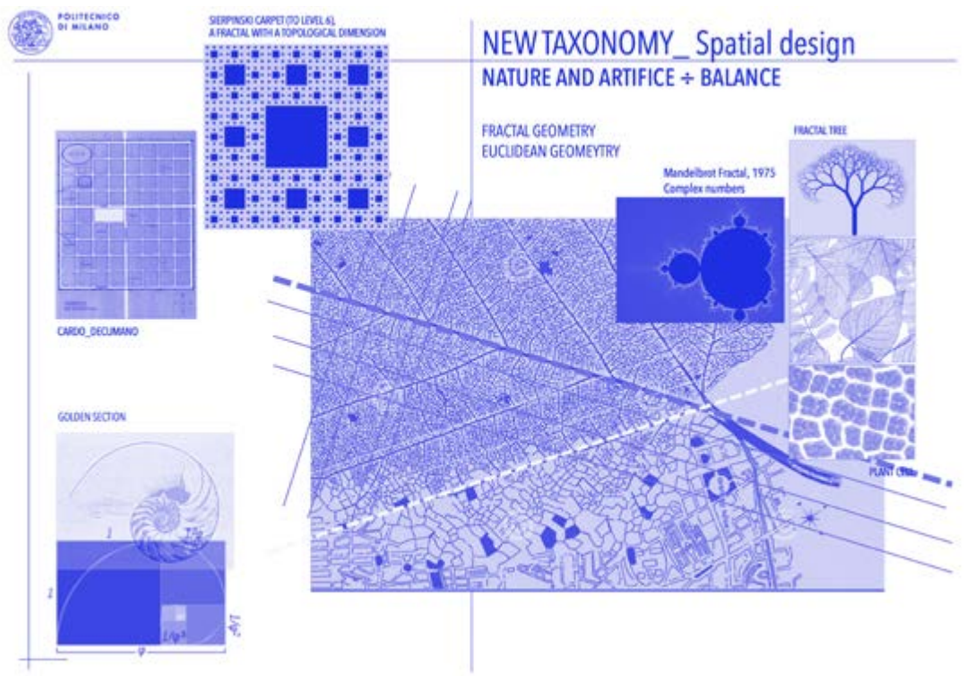
First, we need to apply more knowledge to trace back to different natural environments. In such a framework, we need to use migration and holography. What we see here is a holographic picture of the urbanization of the planet. Human migration is not from one place to another, but a permanent transfer. It is not a short journey, but a

long-term permanent change. We need to redefine the emergencies taking place on earth and the impact of human behavior on nature.

Our society is always faced with various problems. We need to create a series of projects to achieve self-sufficiency and sustainable development. We should pay attention to economic behavior and human behavior. Different projects are trying to understand the planet where we live and understand the relationship between man and nature. It has a great impact on the natural balance. For example, for the problem of glacier melting, our students reconstructed the scene and thought that we could restore the balance of nature and use various methods to turn the problem into an opportunity to create balance in the future.

In the QA link, the host put forward the problem of "how landscape designers, interior designers, citizens and various stakeholders cooperate in future design and specific solutions".

Giovanna piccino said that in the future, scholars, scientists, engineers and citizens of various disciplines can participate in the solution of various complex problems. Only when all parties put forward specific needs can we give corresponding support. This is not an easy process. It takes a very strong planning ability to manage and coordinate all aspects. Giovanna piccino believes that we should take action now and strengthen sharing and communication.



演讲题目

TOPIC OF SPEECH

黑天鹅和机器人艺术家

BLACK SWANS AND ROBOT ARTISTS

布鲁斯 • 斯特林
BRUCE STERLING

未来学家、记者、科幻作家和文化评论家

Futurist, journalist, science fiction writer and cultural critic

布鲁斯·斯特林展示了他即将出版的图书《黑天鹅和机器人艺术家》的封面。这是一个“意大利科幻小说”的项目，也是文化实践，更是科幻的全球化。

科幻作为一种文化题材已经有 90 年的历史。我们从媒体设计的角度去看，科幻是一种文化上的发明。在 70 年代科幻电影崛起，在 80 年代科幻电脑游戏在世界各地出现，突然之间国家之间的边界被打破，这些科幻作品形成了全球的吸引力。

《口袋妖怪》是一个伟大的媒体设计作品，因为它是世界上第一个真正成功的跨媒体作品之一。它是一个游戏，同时它也有电影、书籍、漫画、服装等等。《口袋妖怪》是一个非常成功的、有输出性质的产品。

中国的科幻实际上还没有像《口袋妖怪》或者是《星球大战》这样的作品。中国的科幻实际上有着非常不同的传统，更多的是为了要适应中国的大众，适应中国现代化的进程。这样的科幻会有科技、工程、技术的成分，对于年轻人非常有吸引力，而中国的科幻在这些方面已经发展了几十年，但是中国的科幻设计并不是全球性的文化输出。

布鲁斯·斯特林认为，我们现在看到中国的虚幻，作为一种文体，它更有创造性，而且是不同形式的科幻。我们看到在全世界有中国式的创造，有中国设计的未来主义，有中国的文化先锋，这些都是为了一个更新型的、更好的生活方式。

布鲁斯·斯特林想给设计提出一个不同的、更加现代化的问题，那就是国家网络空间。中国有着中国文化特色的网络，它有着国家的监管，还有国家的防火墙。现在全世界大多数国家包括俄罗斯、英国甚至是美国都接受了中国的这种后网络模式。我们应当有不同的文化输出模式。目前没有人充分思考过这个问题，也没有人真正设计过，没有人在此之上去创建、探索。我们缺少这种对于和平的文化影响力进行良好设计的方法。中国实际上比其他现代化的国家都更有雄心壮志，比如像“一带一路”倡议。但是人们对于“一带一路”更加关注什么？现在的 5G 技术到底传达了什么？人们可以看到怎样的一种未来主义的呈现？

对于“中国如何做？”，布鲁斯·斯特林指出可以把它想象成一个课程项目。带领学生分析《星球大战》，指出这个电影是在 1978 年创造出来的，它现在还有很高的利润。可以向学生提问，如果让他们创造一个现代中国的《星球大战》品牌，适应现代文化和媒体环境，而且要做得更大、更盈利，要在文化上比《星球大战》更有影响，他们会怎么做？他相信我们会从学生提交的作品和反馈中感到震惊，我们会看到他们在努力地思考并富有热情，他们会有各种各样新鲜的想法，会给我们呈现出不断解放的创造力。

在 QA 环节，主持人提问了“写虚幻小说时 Bruce Sterling 是如何吸取灵感、如何思考未来设计？”。Bruce Sterling 表示，他非常喜欢亲自体验。如果要写实验室里的科学，你必须去访问科学家，走访他们的实验室。另外，在社交媒体上你会去了解你喜欢的那些人，你可以跟他们进行更加密切的交流，可以做一些调查，比如说去看看他们穿什么，他们有哪些消息。

It's pleasant to appear on your screens in Beijing from the city of Turin in Italy. Thank you for asking me to participate in the panel today.

My name is Bruce Sterling, I am from the state of Texas in the USA. I am a futurist, a design instructor, and also a science fiction writer. This is an unusual combination of tasks.

I am also a world traveller. I have been to China on occasion, but mostly I travel in Europe and the USA.

I am interested in globalization, and also global futures. This is the cover of my most recent book, which is called "Black Swans and Robot Artists." It is part of a project I created to write science fiction, in Italy, for Italians.

This was an experiment of mine, in the globalization of science fiction. Can a writer from one country perform science fiction in a different language, in a different country, and a different society?

It seems that the answer is "yes," because this is the book -- a collection of science fiction stories, set in Italy and featuring Italians, and sold to Americans, in English.

But when we say "science fiction," or "fantascienza" in Italian, what do we mean?

Science fiction is a literary genre which is ninety years old. Science fiction is a speculative literature, and futuristic in tone. It is not factual, like science is factual. It is fiction.

But now let's consider science fiction differently, in a new way -- from the point of view of media design. Science fiction is a form of content in a medium. Works of science fiction are design artifacts.

Historically, these artifacts were written in national languages and produced and distributed by

national, analog printing presses. They were often illustrated comic books. They were cheap, mass-market magazines. They were paperback books.

Normally, science fiction was modest, popular literature for small groups of fans and enthusiastic readers.

Then, however, science fiction moved into the media of cinema and television — modestly at first. In the 1970s, science fiction cinema became very large, and in the 1980s science fiction computer games appeared worldwide.

Suddenly boundaries of scale were removed, and these science fiction artifacts became very large enterprises with global appeal. I would mention "Star Wars," "the Marvel Comics franchise," and Pokemon from Japan. They are very large and profitable franchises that have lasted for decades.

Pokemon is a game for children. Pokemon is not a great work of world literature. Pokemon is a great work of media design, however, because it was one of the world's first truly successful transmedia properties that was designed in many cultures, and in many different media, all at once. Pokemon is a game, cinema, books, comic books, clothing, playing cards, Augmented Reality, and even an economy, because the cards can be traded.

Also, it is a very successful export property, and this is why I mention Pokemon on this panel for design futures.

Chinese science fiction does not yet have a Pokemon or a Star Wars. The role of Chinese science fiction has a different national tradition. The virtue of Chinese science fiction is accustoming the Chinese population to modernization processes. The genre also glamorizes science, technology and engineering and makes technical work more attractive to young people. Chinese science fiction has been doing this for quite a while.

However, Chinese science fiction not designed for worldwide cultural export. Instead, it is Chinese sword-play fantasies and kung-fu movies that are designed for cultural export, and they do rather well. It was only recently that Chinese science fiction attracted world attention.

I would argue today, however, that Chinese science fiction could do much, much better. That's because other forms of globalized science fiction, such as Star Wars and the Marvel Comics franchise, are old-fashioned. They are not modern. Some of these comic-book heroes celebrated in American blockbuster movies, such as "Superman," were created long ago, in the year 1938. Compare the state of China in 1938 to the state of China today. Is that "futuristic"?

These are not aspirational, hopeful, futuristic visions. They are traditional, and not inventive or speculative.

The truth is that Chinese science fiction today is in a better creative mood than most other forms of science fiction. There is room world-wide for a Chinese aspirational vision, a Chinese designed futurity, a Chinese cultural avant-garde that declares itself to be a new and improved way of life.

There is a world-wide moral vacuum for a soft-power assertion of a better life for people. I do not say optimism, because I don't believe that one nation's optimism has global appeal. What actually has global appeal is better design.

This was the secret of Hollywood -- it is not that Americans are always good and happy, but the intense glamour of the goods and services on the screen.

I do not suggest creating better books or movies. That is work for authors and actors. These cultural forms, books and movies, are old-fashioned -- at the moment, cinema is more or less dead, destroyed by Covid-19.

Instead, I would ask designers this different and more modern question: what is the export version of Chinese National Cyberspace? The Internet with Chinese cultural characteristics is Chinese national cyberspace. It is state-regulated and it has a great national firewall around it.

Most people worldwide have accepted this Chinese post-Internet model. The Russians agree, the British agree, the Europeans agree, and even the Americans agree, because the Americans no longer have a global Internet. Instead, the Americans have five very large Internet corporations, Google, Apple, Facebook, Amazon and Microsoft.

That is the cultural reality of this decade. But though we now have these digital empires, we don't have cultural export models. No one has built them. We lack well-designed methods of peaceful cultural influence.

China has more ambition in this regard than most countries -- for instance, the Belt and Road initiative is an infrastructure export model. But what do people watch on this high-technology Belt and Road? What is their entertainment? They have 5G towers. Fine, but what does the 5G convey?

What do people see that is future-minded, and also glamorous, exciting, progressive, hopeful, and motivating? There is very little in contemporary popular entertainment that has these virtues of science fiction. We don't even have the soft-power appeal of Russian satellites, American blue jeans and Japanese transistor radios.

Instead our cultural affairs are quite gloomy, and our ideas about the future are mostly fearful. It's not healthy.

Now, it might be argued that there is no need to tell the rest of the world how to think. Why entertain the foreigners? Why inspire them, why amuse them? Is this, perhaps, an act of cultural hegemony? Is it arrogant to display our values in an attractive way?

South Korean pop stars are extremely successful, but do we really want to have huge numbers of fans worldwide who are teenage girls? Teenage girls are silly, they are vulgar and immature and obsessed with surface appearances. Teenage girls are not political sophisticates, and they lack the values of adult patriotic citizens.

But I would also point out that teenage girls are very futuristic people. We can discuss the future, but teenage girls will bury us and actually live in the future.

When a society lacks a vision that inspires its youth, that is a sign of cultural crisis. The sign of true cultural power is when you are inspiring the youth of other people. Success comes when young people, who are seeking their own identities, want to acculturate to your identity. They want to wear your clothes, they admire your brands, they use slang from your language, because they find you attractive.

How is this done? How would China do that? I can't tell you, but I can suggest a trial. Consider a class project in design school.

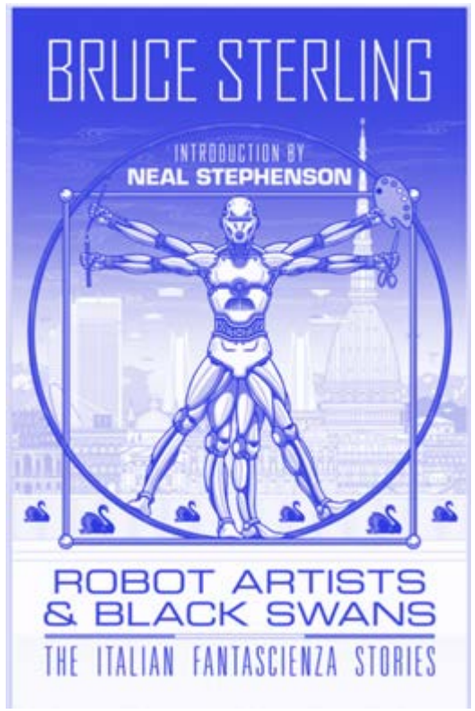
Teach your students about the American movie "Star Wars," and point out that it was invented in the year 1978 -- that this movie is older than their parents. Ask your design students to create a modern Chinese STAR WARS franchise that suits modern media circumstances, and is larger, more profitable, and more culturally influential than STAR WARS.

Do not ask them about the story, or the plot, because the plot of Star Wars is ridiculous. Instead, ask them about the design future of highly imaginative, highly fantastic cultural exports -- from China, meant for other people. Then tell them that, although they are young students, they are designing this for people younger than themselves.

I think you'll be surprised at how interested they are in a project of that kind, and how hard design students would think about that prospect. I suspect you would be surprised how much enthusiasm they would have for this idea, and how much creative energy would be liberated.

You could do that quickly and easily, because to build the future is very expensive, but to imagine it is cheap.

That is what I have to say. Good luck with your conference, and thank you for your attention.



演讲题目

TOPIC OF SPEECH

融合创新 未来城市

CONVERGENCE INNOVATION FOR FUTURE CITIES

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穆斯塔法·柯万生长在设计师之家。他后来在意大利学习美术和建筑并来到 MIT，开始用技术设计未来的项目。

穆斯塔法·柯万向大家展示了“Smart Cities and Artificial Intelligence”一书。“人、自然和机器之间的融合”是这本书的主题。如果我们看一下地球的演变、人类的演变和数字的演变，这些在以后的 50 年或 100 年都会融合在一起。随着成本的降低，超级计算机得以发展，AI 可以智能地把事物联系在一起，把技术嵌入到我们的生活中，使数字和城市、人脑集成在一起，成为一个神经网络，成为一个连接的有机体。

从城市设计角度谈进化过程，人类始终在以物体为中心进行设计，而我们智慧城市的互动、数字化，我们则希望它能够更加人性化，成为以生态为中心的设计。我们又有了一个集体智慧，就是人、技术和自然融合在一起，这不仅仅是以人为本，也不仅是以自然为本，而是超越了所有的这些。城市、技术、社会，我们希望能够看得更广，看到自然环境、物质环境，还有生理特点等等，都是这个融合的一部分，这是一种新的融合，让大自然、人类、技术能够成为共同的智慧，我们希望建立起来一种新形式的结合，人和人、人和机、机和机、机和大自然、人和大自然，所有的这些新的组合，它们都给我们带来一种新的集体智慧，有些智慧产生了在这种关系之下的次级智慧，我们不断地进行开放的创新，需要新的有活力的经济和可持续的发展。

在用智慧连接的世界，人、物体、技术都成为不同维度上的联合，从微观到宏观，最关键的一点就是跨界。将沟通、社会、城市结合在一起，而不是让它们成为孤立的个体。

穆斯塔法·柯万提到了清华大学的 Living labs。他表示 Living labs 是一个非常好的概念，我们需要

建立一个生活实验室，进行不断的演变。我们要去了解各个方面，比如软件、硬件的结合等，将每一个部分都考虑其中。

穆斯塔法·柯万表示，清华大学和米兰理工大学有智慧城市融合创新硕士项目。这个项目会通过更多的实践来进行学习和研究。我们会有来自意大利以及中国的真实案例以及真实项目。我们也会举办研讨会，和社区一道进行实际应用。项目设在米兰和北京，各方专家进行跨国联动，对接东西方的精髓。对于新的城市需要有不同的解决方案，所以我们需要把不同观点、不同维度进行结合。我们希望实现跨学科的理论与实践之间的结合，推进智慧城市学习项目。

在 QA 环节，主持人请穆斯塔法·柯万列举一下“机器学习支持设计思维发展”的例子。

穆斯塔法·柯万表示，我们关注的是如何将人的智慧进行放大。我们希望在更加开放的体系中进行思考，不希望被某种元素如算法所限制。我们可以进行混合式的设计来适应不同的变化，以便于帮助我们不断地学习和发展。Living labs 也在利用这种结合进行设计，如工业设计或是城市发展的设计。

Mustafa Kovan grew up in a designer's home. He later studied art and architecture in Italy and came to MIT to design future projects with technology.

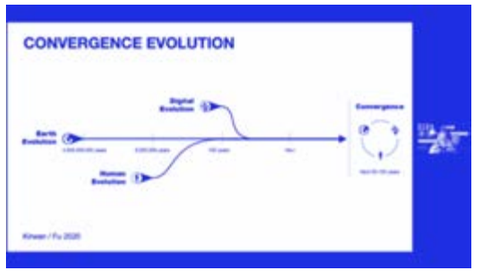
Mustafa Kovan showed you the book "smart cities and artistic intelligence"“ "The integration of man, nature and machine" is the theme of this book. If we look at the evolution of the earth, the evolution of mankind and the evolution of numbers, these will merge in the next 50 or 100 years. With the reduction of cost, supercomputers have been developed. AI can intelligently connect things, embed technology into our lives, integrate numbers with cities and human brains, and become a neural network and a connected organism.

Talking about the evolution process from the perspective of urban design, human beings are always designing with objects as the center, and we hope that the interaction and digitization of our smart city can be more humanized and become an ecological centered design. We also have a collective wisdom, that is, the integration of man, technology and nature, which is not only people-oriented, but also not based on nature, but beyond all these. City, technology and society, we hope to see more widely. The natural environment, material environment and physiological characteristics are all part of this integration. This is a new integration, so that nature, human and technology can become common wisdom. We hope to establish a new form of combination, people and people, people and machines, machines and machines, machines and nature All these new combinations of man and nature bring us a new collective wisdom. Some wisdom produces secondary wisdom under this relationship. We continue to carry out open innovation and need new dynamic economy and sustainable development.

In the world connected by wisdom, people, objects and technology have become the combination of different dimensions. From micro to macro, the most critical point is cross-border. Combine communication, society and cities, rather than make them isolated individuals.

Mustafa kewan mentioned Living Labs of Tsinghua University. He said that living labs is a very good concept. We need to establish a living laboratory for continuous evolution. We should understand all aspects, such as the combination of software and hardware, and consider each part.

Mustafa Kovan said that Tsinghua University and Milan Polytechnic University have a master's program of smart city integration and innovation. This project will study and research through more practice. We will have real cases and real projects from Italy and China. We will also hold seminars to carry out practical application with the community. The project is located in Milan and Beijing. Experts from all parties carry out cross-border linkage to connect the essence of the East and the West. Different solutions are needed for new cities, so we need to combine different perspectives and dimensions. We hope to realize the combination of interdisciplinary theory and practice and promote the smart city learning project.



In QA, the host asked Mustafa Kovan to give an example of "machine learning supports the development of design thinking".

Mustafa Kovan said that our concern is how to amplify human wisdom. We hope to think in a more open system and do not want to be limited by some elements such as algorithms. We can carry out hybrid design to adapt to different changes, so as to help us continuously learn and develop. Living Labs is also using this combination for design, such as industrial design or urban development design.

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圆桌论坛嘉宾分享

PANEL 2

未来学说

将未来思维融入设计方法

FUTURE THEORY: INTEGRATING FUTURE THINKING INTO DESIGN METHOD

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New media artist

演讲题目
TOPIC OF SPEECH

艺术与科技的跨学科语境与实践

INTERDISCIPLINARY CONTEXT AND PRACTICE OF ART AND TECHNOLOGY

费俊
FEI JUN

中央美术学院设计学院艺术与科技方向
教授、博士生导师
某集体交互媒体创意总监

professor in art + technology program, School of Design, Central Academy of Fine Arts
Chief creative director of Moujiti Interactive

今天在讨论跨学科语境需要使用一种新的跨学科的方法来去理解，从历史的角度、从面向未来的角度来理解这个学科建立的价值，同时，我们也需要用一种跨学科的方法来重新建构新的学科。在费俊看来艺术与科技不仅仅是在艺术学语境中新的学科，它其实需要我们把艺术以及科技这样两个交叉的学科定制在同等的地位上重新建构。

费俊借用来自 MIT 的麦瑞·奥克兰创作的，新的关于创意力循环的图表，阐明了跨学科的学科的诞生的原因。在信息时代和即将到来的智能时代正在发生变革的同时，我们必须用新的语境来看待我们今天所处的革命。认知的革命也包含了对生命体的认识，包括对环境的认识，和对人类意识以及潜意识的认识。这种新认知推动了诸多领域，比如人工智能，以及智能化形成的的产业，最重要的是它帮助生成了若干个新的学科领域，比如合成神经生物学、生物机电一体化、数字制造以及情感计算等新领域，这些领域和我们看到的生物以及数字，包括左边我们的形而上和形而下这样的象限都构成了密切的交叉关系。艺术、科学、工程和设计之间形成了内在的循环关系，如果说艺术是研究人以及和人相关的环境的一种学问，那么它从生活中、从社会中来通过观察而形成我们对于人以及生物和环境的认知，这样一种认知推动着科学对于真理世界的探寻，那么科学所探寻出来的原理，以及我们对这个世界真理的发现，又会推动我们再工程或者科技领域、技术领域的一些解决方案，这些解决方案又通过设计把它进行具像化而变成一种可以在生活中应用的产品或者服务，由设计所生成出来的产品和服务又在构建新的生活方式，比如手机就是典型的例子。

在这个生活方式的诞生又回到艺术家的观察、分析以及批判中，形成了周而复始的新的创造力模型或者叫创造力循环。正是在这样新的创造力循环基础之上，今天我们在四个领域开始展开了艺术科技的研究、教学、实践。第一个领域是生物科技与艺术，

第二个是机器人科技与艺术，第三个是智能科技与艺术，第四个数据科技与艺术。
接下来，我想谈一谈艺术与科技学科对于艺术家、对于设计师在未来实践方面究竟会产生哪些深远的影响。
第一个影响，是在创作价值的层面上。艺术家在未来的实践当中不仅仅是作为美学价值的创造者，而是我们通过艺术与科技的实践会推动科技伦理的价值的产生。伦理价值将是艺术家为这个时代带来的新的核心价值。

第二个变化是创作场域的变化。一个艺术工作者和一个设计工作者，在传统上通常的工作场景都是基于物理现实的、基于物的、基于空间的、基于材料的，在今天随着混合现实技术不断的深入现实，我们即将迎来一种由数字技术构成的虚拟现实以及物理现实混合而成形成的一种混合现实，这样新的产物同时也会带来艺术语言的变化。

第三个是创作方式的变化，以艺术 + 工作室为核心的一种艺术实践和设计实践，会不断的演化到一种跨学科的模式为核心的新型的实践，称之为实验室。而实验室并不局限在指向一个具体的具有实验条件的空间，同时也指向了一种跨学科的工作方式。今天我们看到越来越多艺术品的形态会从图像和实物转换为系统和方法，也就是以非物质的形态为核心的新型的艺术品，比如大量的数字艺术。它的创造性的系统，包括算法，将不再作为一种工具的价值，不再作为图像产生的价值，而算法和系统可能成为艺术本体的内核。

央美的艺术与科技教育已经实施了将近五年的时间，2019 年艺术与科技专业正式成为中央美术学院第 22 个本科专业，这个专业强调的是以跨学科的方式来培养学生的创意能力、技术能力和思辨能力。费俊希望在教育中能够赋予给学生的是一种复合的能力，包含以下四个方面。

首先是艺术与机器人科技方向，这是我们一位同学在本科阶段的创作，他创作了《虫舱》的装置作品，从这张图上可以看到，这里有很多活的昆虫，比如苍蝇、蜗牛，他们在这些系统中被各种感应器和图象识别的软件进行识别，通过对于这些昆虫的活跃度让它驱动我们今天看到的手工制作的各种乐器，换句话说，这更像是由昆虫驱动的昆虫剧场或者昆虫音乐会。这个项目的完成证明了今天我们利用复合能力或者跨学科的培养方式培养出的学生的新的能力，它能够从作品概念的生发到整个装置从软件到硬件的设计，甚至于装配。

第二个部分我想谈一谈艺术与智能科技的实践。《睿·寻》是我去年威尼斯双年展创作的作品，扫描威尼斯的 25 座桥会出现和这个桥类似的中国的桥梁，同时可以通过 VR 方式体验来自中国这个桥由于多数媒体的方式所生成的情境。使用了机器学习、虚拟现实的方法，试图在两个文明之间，通过相似性的比较来搭建关联，说明我们今天过度强调文明与文明之间的差异性，而太少的关注文明与文明之间所共享的人类的智慧。

《有趣的世界》装置二，是一件利用人工智能的技术来探讨机器智能的作品，在现场会发现人们的形象会被这样的系统打上标签，它的工作原理是，这个人工智能的程序会基于一个观众或者多个观众的表情、穿着，包括衣服的色彩，来形成一个综合的氛围，基于这个氛围会为你开启一个独一无二的叙事，把你带到世界上的某一个角落，和这个角落的人、物、产品进行关联。为什么说它是人工智能创建的机器智能呢？因为在这个作品中我们感兴趣的不是用人工智能像人一样的写诗、作画，费俊感兴趣的恰恰是利用机器本身的计算能力、延展能力，打破由人来进行操作的一种主体性的创作模式，把这种无穷无尽的链接方式作为人的创造力延伸，为我们创造了貌似随机，但是却充满关联的一种新的叙事方式。通过几个场景构建出了非常诗意的又非

常特别的影像关联，就像是一段由机器由代码生成的电影一样，这样的关联很难是靠一个个体进行完成的，而恰恰由这样的机器算法、机器的智能，不断构建了各种奇妙的语义关联，这是机器智能所为人带来的新的创造和创造力的方式。

在艺术与生物科技方面费俊介绍了梁文华创作的《基因汤》的装置，为你生成一个美味的汤。它唯一需要的原料就是你的口水，借助一些配方，通过基因混合的方式就能产生美味的汤，这像是玩笑似的设计，事实上基因产业将来会成为巨大的颠覆现有产业的新平台。

在艺术与设计科技的结合方面，费俊介绍了一位本科生的设计作品叫做《身体书写》，他的作品是试图采集人的身体所呈现的生理数据，比如胳膊、腰扭转的程度，通过这样一些带有紧张力的数据，再和一个丰富的描绘身体的文学作品的一些短句进行构成，就形成了一套算法，这套算法使得你可以通过这样的一件衣服和你的身体结合，为你写出一首诗歌。你的身体比你的大脑可能更具有创造力，这件作品某种意义上呈现了在今天这样的信息社会中，我们其实很少去关注身体的创造力和身体的智能。这样的一位同学在今天跨学科教育模式里，既能通过软件和硬件的方式来表达自己诗意的艺术观念，同时又能够通过服装这样一种传统工艺的载体来把软件和硬件结合在一起，这也是跨学科的教学所产生出来的一种变化。

费俊接下来分享了和两位科学家合作创作的作品《情绪几何》，许晨阳是一位中国知名的代数几何的数学家，刘正奎博士是来自中科院心理所的心理科学家，我们在一起通过这样一件作品，试图尝试通过艺术的方式，通过几何学的方式，以及情感算法的模式来表达每一个人因人而异的情绪。观众在现场通过暗箱中触摸的行为，被设备采集到心律数据，再经过一套情感的算法，会生成每一个因人而异的情绪的几何图形，最后靠这样的打印的机器人，用粉笔的方式把每个人的情绪书写到黑板上。它既书写了每个观众在现场实时的情绪，同时这样完整的画面似乎也表达出观众在整个展览中所生成的情绪。

费俊最后分享的作品叫《归鸟集》，是 2019 年为大兴国际机场创作的利用数据创作的公共艺术作品，人们经过通道时会发现这里会有很多鸟飞进原本很空旷的花园，欢迎每一位归来的游客。当你试图靠近这些鸟，它不像现实生活中会惊慌而逃，反而会更多的鸟聚集在你身边，非常友好的和你嬉闹。每当有航班降落在大兴机场，就会有一只鸟带着航班号飞进这个花园，让你看到实时的航班信息，而且这张画还会随着北京户外的天气，包括季节，不断的演化，使得它是我们可以重新感受到人与自然亲密关系的数据界面。数据在这里带给了艺术作品生命力，同时成为了我们人和自然互动的重要界面。所以，我们在这里能够看到春天的场景，夏天的场景，不同的季节这里还会生长出不同的植物和花卉。

在这样一个跨学科领域当中来讨论艺术与科技，我们应该不仅仅看待科技会为艺术带来什么，我们更重要的应该去研究艺术为科技带来什么，这个才是今天讨论和建设这个学科更重要的核心价值。

Today, when discussing the interdisciplinary context, we need to use a new interdisciplinary method to understand the value of this discipline from the perspective of history and facing the future. At the same time, we also need to use an interdisciplinary method to reconstruct a new discipline. In Fei Jun's opinion, art and technology are not only new disciplines in the context of art, but also need us to customize the two cross disciplines of art and technology in the same position.

Fei Jun uses the new chart on the cycle of creative power created by Murray Auckland from MIT to clarify the reason for the birth of interdisciplinary disciplines. While changes are taking place in the information age and the coming intelligent age, we must look at the revolution we are in today in a new context. The cognitive revolution also includes the understanding of life, including the understanding of the environment, and the understanding of human consciousness and subconscious. This new cognition has promoted many fields, such as artificial intelligence and the industry formed by intelligence. The most important thing is that it has helped to generate several new disciplines, such as synthetic neurobiology, bio electromechanical integration, digital manufacturing and emotional computing, Including our metaphysical and metaphysical quadrants on the left constitute a close cross relationship. Art, science, engineering and design form an internal circular relationship. If art is a kind of knowledge to study people and their related environment, it forms our cognition of people, biology and environment through observation from life and society. This cognition promotes science's exploration of the truth world, Then the principles explored by science and our discovery of the truth of the world will promote us to reengineer or some solutions in the field of science and technology and technology. These solutions will be visualized through design and become a product or service that can be applied in life, The products and services generated by the design are building new lifestyles. For example, mobile phones are a typical example.
The birth of this way of life returned to the artist's observation, analysis and criticism, forming a new creative model or creative cycle. It is on the basis of this new creative cycle that we have started the research, teaching and practice of art and technology in four fields. The first field is biotechnology and art, the second is robot technology and art, the third is intelligent technology and art, and the fourth is data technology and art.

Next, I would like to talk about the far-reaching impact of art and science and technology on artists and designers in future practice.

The first influence is on the level of creative value. In the future practice, artists are not only the creators of aesthetic value, but we will promote the value of scientific and technological ethics through the practice of art and science and technology. Ethical value will be the new core value that artists bring to this era.

The second change is the change of creative field. An artist and a designer, in the tradition, usually work scenes are based on physical reality, object, space and material. Today, with the continuous deepening of hybrid reality technology, we are about to usher in a hybrid reality composed of virtual reality composed of digital technology and physical reality, Such new products will also bring changes in artistic language.

The third is the change of creative mode. An art practice and design practice with art + studio as the core will continue to evolve into a new practice with interdisciplinary model as the core, which is called laboratory. The laboratory is not limited to a specific space with experimental conditions, but also points to an interdisciplinary way of work. Today, we see that more and more art forms will be transformed from images and physical objects into systems and methods, that is, new art with non-material forms as the core, such as a large number of digital art. Its creative systems, including algorithms, will no longer be the value of a tool and the value of images, but algorithms and systems may become the core of art ontology.

Yangmei's art and science and technology education has been implemented for nearly five years. In 2019, the major of art and science and technology officially became the 22nd undergraduate major of the Central Academy of fine arts. This major emphasizes the cultivation of students' creative ability, technical ability and speculative ability in an interdisciplinary way. Fei Jun hopes to give students a compound ability in

education, including the following four aspects.

The first is the direction of art and robot technology. This is the creation of one of our students at the undergraduate stage. He created the installation work of insect cabin. From this picture, we can see that there are many live insects, such as flies and snails, which are recognized by various sensors and image recognition software in these systems, Through the activity of these insects, let it drive all kinds of hand-made musical instruments we see today. In other words, it is more like an insect theater or insect concert driven by insects. The completion of this project proves that today we use the compound ability or interdisciplinary training method to cultivate students' new ability, which can range from the generation of work concepts to the design of the whole device, from software to hardware, and even assembly.

In the second part, I want to talk about the practice of art and intelligent technology《 Most of the works I created in the VR Venice exhibition are similar to the way I created the bridge in Venice last year. Using the methods of machine learning and virtual reality, we try to build a relationship between the two civilizations through the comparison of similarities, which shows that today we overemphasize the differences between civilizations and pay too little attention to the human wisdom shared between civilizations.

Device 2 of interesting world is a work that uses artificial intelligence technology to explore machine intelligence. On site, it will be found that people's images will be labeled by such a system. Its working principle is that this artificial intelligence program will form a comprehensive atmosphere based on the expression and dress of one or more viewers, including the color of clothes, Based on this atmosphere, it will open a unique narrative for you, take you to a corner of the world and connect with the people, things and products in this corner. Why is it machine intelligence created by artificial intelligence? Because in this work, we are not interested in writing poetry and painting with artificial intelligence like people. What Fei Jun is interested in is precisely using the computing power and extension ability of the machine itself to break the subjective creation mode operated by people, and take this endless link as an extension of human creativity, creating seemingly random for us, But it is a new narrative way full of relevance. Through several scenes, a very poetic and special image association is constructed, just like a film generated by machine code. Such association is difficult to be completed by an individual, but just by such machine algorithm and machine intelligence, various wonderful semantic associations are constantly constructed, This is a new way of creation and creativity brought by machine intelligence.

In terms of art and biotechnology, Fei Jun introduced the device of gene soup created by Liang Wenhua to generate a delicious soup for you. The only raw material it needs is your saliva. With the help of some formulas, it can produce delicious soup through gene mixing. This is like a joke design. In fact, the gene industry will become a huge new platform to subvert the existing industry in the future.

In terms of the combination of art and design technology, Fei Jun introduced the design work of an undergraduate called body writing. His work is an attempt to collect the physiological data presented by the human body, such as the degree of arm and waist torsion. Through such data with tension, it is composed of some short sentences in a rich literary work depicting the body, It forms a set of algorithms that enable you to write a poem for you through the combination of such a dress and your body. Your body may be more creative than your brain. In a sense, this work shows that in today's information society, we actually pay little attention to the creativity and intelligence of the body. In today's interdisciplinary education mode, such a student can not only express his poetic artistic concept through software and hardware, but also combine software and hardware through clothing, a carrier of traditional technology, which is also a change produced by interdisciplinary teaching.

Fei Jun then shared his work emotional geometry, which was created in cooperation with two scientists. Xu Chenyang is a well-known mathematician of algebraic geometry in China, and Dr. Liu zhengkui is a psychological scientist from the Institute of psychology of the Chinese Academy of Sciences. Through such a work, we tried to try the way of art and geometry, And the mode of emotion algorithm to express everyone's different emotions. The audience's heart rhythm data is collected by the equipment through the behavior of touching in the dark box, and then through a set of emotional algorithm, it will generate the geometric graphics of each individual's emotion. Finally, with such a printing robot, each person's emotion is written on the blackboard in the way of chalk. It not only describes the real-time emotions of each audience at the scene, but also seems to express the emotions generated by the audience in the whole exhibition.

The last work shared by Fei Jun is called "returning birds collection", which is a public art work created by using data for Daxing International Airport in 2019. When people pass through the channel, they will find that many birds will fly into the originally empty garden and welcome every returning tourist. When you try to get close to these birds, they don't panic and run away in real life. Instead, more birds will gather around you and play with you very friendly. Whenever a flight lands at Daxing airport, a bird will fly into the garden with the flight number to let you see the real-time flight information. Moreover, this picture will continue to evolve with the outdoor weather in Beijing, including seasons, so that it is a data interface for us to feel the intimate relationship between man and nature again. Data has brought vitality to works of art and become an important interface for the interaction between man and nature. Therefore, we can see the scenes of spring and summer here. Different plants and flowers will grow here in different seasons.

To discuss art and science and technology in such an interdisciplinary field, we should not only look at what science and technology will bring to art, but also study what art will bring to science and technology. This is the more important core value of today's discussion and construction of this discipline.

演讲题目

TOPIC OF SPEECH

遗产

BEQUESTS

苏珊 • 叶拉维奇
SUSAN YELAVICH

纽约帕森斯设计学院设计研究教授

Professor Emerita, Design Studies, Parsons School of Design, The New School

在未来，新的技术将给我们的生活带来更多的冲击和不确定性，所有过去的语言都有可能是不准确的。我们的设计应该以希望和憧憬为驱动，在过去的基础上进行重新配置，将不同文化间的冲撞考虑进未来设计中。

设计师的设计要把未来作为前提考虑，无论是建筑业、时装产业、社会设计或服务设计等，都对污染、浪费等社会现状负有一定责任。

设计师需要重新评估人们的生活，因为他们是在重写我们的“遗嘱”，苏珊·叶拉维奇用“遗嘱”这个词并不是带着悲观主义的，我们生活的时候要去思考身后将留下什么。

为未来设计是我们整个社会共同的遗嘱。传统的设计者不断的塑造在集体遗嘱中要纳入的想法，不管是花草还是难民营，设计者要补充在遗嘱中缺少的东西——路径。路径是一种通向未来的途径。

最近引起苏珊·叶拉维奇注意的一个概念叫做速度分层，速度是指我们运动的节奏，如果想要让未来变得更好，必须要了解时间的分层，尤其作为设计师，我们要考虑到设计意图会有系统性的因素，它们最后会产生惯性。我们的文化因素、社会因素、政治因素，它们都是分层因素。苏珊·叶拉维奇给大家分享了文化因素，因为它是非常难改变、非常顽固的。越来越多的设计者发现，他们可能没有办法改变文化，要改变一个文化可能需要几十年、上百年，但是他们看到了其他的机会，可以与社会学家、人文学家各种各样的利益相关方一起，这样是可以改变文化传承的。

比如在南美的哥伦比亚，那里自 60 年代开始起就有武装冲突，而且在哥伦比亚是重男轻女的，在战争中女性往往遭到最严重的暴力对待。玛丽亚是英国莱斯特大学的教授，她是记者同时也是社会学家，

在一个数字纺织工艺品的项目中担任调查员。在战后，她请受到军队严重暴力侵犯的妇女共同制造一些数字纺织品，这些可以女性相互讲述自己的故事，同时编织这些纺织品。布料里面有一些数字记录装置。编织结束后，她们可以让别人倾听自己的故事，然后在社区之间可以对这些纺织品进行交易。这个项目就是通过技术设计，把活动变成女性倾诉的一种工具，也包括在当地的纺织品的文化元素、故事的元素以及现代的技术元素，这些元素可以把女性的故事讲述给她们的女儿，一代一代传承下去。

苏珊·叶拉维奇举了另外一个城市的例子，那里曾经是老工业区，现在有非常严重的社会经济挑战，尼克与当地的木偶戏人合作，这些木偶都有不同的角色，可以让当地的人去共同参与这个项目。他使用了公共服务，吸引当地人的参与，让设计者把一部分讲述的权利分享给别人。

哥伦比亚妇女的故事她们是讲的非常具体的非常个人的故事，而后者更具有开放性，是鼓励当地的居民用更加写意的方法看待自己。

另外一个项目是给人们做名片，上面写的是他们希望自己做什么样的工作，有个人说“我想当一个只送好消息的邮递员”。大家都希望有更好的、更具有安全感的未来。设计是在不同的时空中发生的，我们要考虑到我们生活的环境，在我们身后还会存在在地球上。它可能在大海里飘或者是在空气中，这些物质不会在空中消融，而是会变成各种不同的固体。但是由于人们不能清晰的看到这些破坏的效果，所以他们不担心这些。

苏珊·叶拉维奇认为，我们需要分享我们的体验，更好的理解时间。时间并不是单向的箭头，它是一种 DNA，有隐性基因，有很多的变量是我们没有办法预见到的，所以未来是不可确定的。在我们日常生活中任何的事情有了微小的改变，都会在结局产生巨大的不同。我们对未来是有责任的，我们要用有形的和无形的设计方法，共同建立起集体的遗嘱，让人们与设计者一起，给我们的子孙后代未来有更多的可能性。

The future is a shape-shifter. On the one hand, it's empty, waiting to be filled, and on the other, it is already packed. Ask anyone about the future and they'll have a scenario, or several, to offer. Only months ago, I'm betting that most of our thoughts about the future had to do with short-term plans with colleagues, friends, and relatives - planning vacations, conferences, birthday celebrations, and the like. That all changed in 2020 with the COvid pandemic. The virus, together with the rising tides of climate crises—not to mention the social crises of racism and nationalism—have all but wiped out small futures, leaving gargantuan and fearsome futures in their wake. Given the broad rise in depression and anxiety documented in these last months, the shift from small to big futures has happened not just in the minds of thought-leaders, activists, and designers but also in the popular imagination. The future may be ours, but who wants it?

Certainly not the far right, which would have us enter a time machine and go back to 1950 when women and persons of color knew their place. But no amount of magical thinking can shield us from the ultimate future: death. It is this realization, or denial—literally brought home by the Corona virus—that has made the future much less abstract. It's time to write our wills. And I don't say this lightly, as you will see. But first a bit of history.

For much of the 20th-century (where I spent the first 50 years of my life), the future, in design and art circles, was embodied in an avant-garde, celebrated and uncelebrated modernists who made it tangible. These modernists—from Russian Constructivists like El Lissitzky to American design-inventors like Buckminster Fuller—drew, modeled, built, and staged utopian visions that were meant to be free from the encumbrances of the past. They wanted to build the future sui generis, in other words from nothing—as if that were possible.

It's useful to remember that we owe the very concept of the future to such expressions of modernity. But it's also important to remember that El Lissitzky's agitprop sculptures and Bucky Fuller's geodesic domes were part of a much larger zeitgeist that had been brewing since the 1700s.

In concert with similar developments in music, literature, art, architecture, technology, and philosophy, design's contributions to modernity and its cult of speed (think telegraphs, telephones, railroads then airplanes and automatic everything) were meant to be "compensation[s] for the loss of the organic continuity of the past."1 In other words, the expectation of better-things-to come (and come sooner) replaced the predictable and stable character of rituals and behaviors that had been governed by the rhythms of the seasons. Increasingly, life was determined by the artificial, in other words, by design. Just think about the difference made by electric lighting. When the architect Erich Mendelsohn put electric signage on the exterior of the Schocken Department Store in Stuttgart in 1926, he changed days into nights. Faith in technology replaced faith in miracles.

But the future's compensations—among them, more time to shop—have backfired. We no longer know where to put the casualties of our future-making. All those things we bought, and bought into, are clogging our homes, our landfills, our oceans, and even outer space—which, incidentally now has a fleet of archeologists studying the debris we've shot up into the thermosphere.

And, of course, the effects of our profligacy can't be measured solely in terms of the quantity of rubble we produce—be it from endless wars or wasteful consumption. It must also be measured in terms of species extinctions, including, theoretically, our own. All of this makes it hard to look forward to the future. Once the source of fantasies in which even dystopias were thrilling, the future has become a palpable burden.

Among designers, it is gospel that this is a burden they must assume. But to do so requires another endangered species: Optimism. Not the naive optimism of flying cars, new-and-improved appliances, holographs, or any of the digital animisms that have infiltrated our lives, but the optimism which is intrinsic to design itself—not as

the production of the new, but as a matter of the reconfiguration of materials, social relationships, politics, culture and cultures—all of which carry different temporalities, one being the future.

It is by now a commonplace that design has consequences far into the future—consequences so strong that, for the first time in history, human behavior governs the environment. There are no pockets on our planet, no aspect of our atmosphere that our actions haven't touched. Nature and nurture are no longer distinct. By nurture, I mean design – the design of literal things as well as the design of systems of things. If we accept this larger notion of design and accept that it operates in webs of power and policies, it follows that practicing designers need to expand their purview in order for their work to have any effect at all. Otherwise it will be strangled by the way things have always been done.

But before we shift the blame to external forces who have a vested interest in maintaining the status quo, we also have to admit that the design industry – be it the fashion industry or the building industries – have had a major role in creating the patterns of waste and pollution that currently characterize our condition. Thus, it follows that professional design (the traditional categories of graphic, product, architecture and urbanism) and design as world-making (addressed by service design, transition design, and social design) both have roles to play in redressing our condition.

As you can tell from that last observation, I'm not ready to throw the baby (that is, design as conventionally practiced) out with the bath water. Or give into unspoken rivalries about what constitutes the best way to practice design.

In my fantasy of design's future, the two modes of designing would be better integrated, so that when radical structural change happens, aesthetics (by which I mean, the senses) aren't abandoned. I sometimes worry that while designers are becoming increasingly adept at working with social scientists, they are less adept at working within the culture of design itself.

That said, I'm optimistic that designing structural change, and the design of artifacts, spaces, and communications involved in accomplishing that change, will become complementary (and not contradictory) approaches in acting-towards-the-future. Acting-towards-the-future in the present means that instead of inventing the future, designers of conscience, no matter what they call themselves, are excavating and reassessing what we bring to it. To put it bluntly, designers are rewriting our last wills and testaments. I use the metaphor not fatalistically but hopefully, because wills are acts of generosity and caring. Made while we are living, they compel us to consider what we are bequeathing to others who live after us. But let me be clear, design for the future needs to be thought of as a communal will and designers need to be both witnesses and co-authors. The witness role will already be familiar to those who work with communities as facilitators of conversations that lead to actions, which may or may not tangible. The role of co-author is closer to the traditional designer's, who propose (and make) forms and situations that actively shape a dialogue about what might be included in a collective will.

Of course, these distinctions are not hard and fast, as you will see. But before we get to any examples, I want to assure you that making a will, as I am using the term, is not the sole prerogative of the privileged. While most wills cover private property and personal possessions—and, of course—money, the collective will has no prerequisite of wealth. For example, you can be living in destitute conditions—like a refugee camp or a blighted city—that are devoid of natural beauty and still wish it for others to enjoy in the future. In her book On Beauty and Being Just, the humanist scholar Elaine Scarry poses a thought problem, which I will paraphrase here: Thinking not of ourselves but of people who will be alive at the end of the twenty-first century: would you wish for the continuous existence of plants and blossoms, even if you have none of your own?2 She (and I) believe that most would answer 'yes.'

Of course, wishing for and actually delivering the goods to the future (be they plants and blossoms, or a home that isn't a tent) are radically different propositions.
Designers can contribute what's missing from the 'wishing'—namely, pathways. Without pathways, our social and physical landscapes would remain a directionless whole. Pathways offer options with which to consider the future. I like this metaphor because doesn't sound as finite as the word 'design,' though certainly pathways are designed with various methodologies. I propose we consider some now.

My first example isn't so much a pathway or means to seeding the future, as it is a method that is fundamental to every form of design, including futuring, and that is iteration. One of the most relevant demonstrations of the expansive power of scenario building I've ever come across is to be found in David Eagleman's brilliant book Sum: Forty Tales of the Afterlives. In it, he conjures 40 possibilities of what we might experience after death. So he's writing about the future after our future is over. This would be just a silly exercise if it weren't for the fact that each of his tales shows how the future was pre-determined by our lives on earth. In a tale called "Encore," we learn that our Creators are talented only at creating. "They do not watch our lives unfold. They couldn't care less."3 What they do is wait for our lives to end and recreate them from our data.
"They take it as a challenge to see if they can recover a good likeness of a person from the piles of evidence they've left behind4: namely, phone call records, credit card receipts, ATM withdrawals, magazine subscriptions, tax returns, and every other form you've ever filled out. "The Recreators can reconstruct a person so seamlessly that [their] afterlife is essentially a perfect replica of the original."5 This is a future to which we have bequeathed our virtual selves—our digital doppelgangers, which were accumulating all the while we were living. Moreover we knew it was happening but did nothing to stop it. This is a will that could have been rewritten, had we only thought to do so.

In another story, called "Microbe," we die, and our bodies decompose into teaming floods of microbes that return to the earth. It seems there is no god that cared about us as whole individuals. But, in fact, in this scenario, god is a bacterium, a bacterium that is unaware of us because we are at the wrong spatial scale. God and his microbial constituents have no idea of the rich social life we have developed, just as we are unaware of theirs.6 This is a future to which we have bequeathed our ignorance of biology. The story reminds us that we would do well to consider how germs run the world, especially in the era of COvid.
Of course, projections like these, taken from our behaviors in the present, are the foundation of almost all science fiction, as my fellow speaker Bruce Sterling will no doubt attest. And as useful as these fictions are in helping us think about the long-term risks in overlooking things like virtual surveillance and microscopic forms of life and death, designers need other tools. One, which I find especially relevant, came to my attention courtesy of the aforementioned Mr. Sterling. It's called 'pace layers.'

As the word 'pace' suggests, the concept is about pacing, or rates of movement. Anyone consciously trying to affect and perhaps change things for the better in the future would do well to be aware of the 'layers' of time or pacing, in which designers, and anyone else for that matter, must operate. This is because we need to be aware of the systemic forces that, for all our good design intentions, produce inertia and slow change down. I'm thinking of forces like governmental regulations, for example. If you want to read about all six of the pace layers—fashion, commerce, politics, infrastructure, culture, and nature—I commend you to Bruce's essay on pace layers in my book Design as Future-Making. For our purposes, however, I want to concentrate on just one of these and that is culture, because it is stubborn and perhaps the hardest to change.

What increasing numbers of designers have learned is that they may not be able change culture (that can take decades, even centuries) but they might open up different opportunities within existing cultures by drawing on insights from anthropologists, sociologists, and psychologists. In doing so, together with members of a cultural community, they can alter cultural legacies.

Let's take an example from Colombia, South America. Colombia has suffered continuing armed conflict since 1964. One of the horrors of any war, civil or otherwise, is the violence perpetuated against women; and it was, and likely is, particularly bad in Colombia. Here we are dealing with not just the socio-political conflict between the government and the rebels known as FARC, but also a long history, one that goes well beyond Colombia, of cultural acceptance that women are less than human, that rape is a soldier's reward, and that women are acceptable targets for masculine rage. I am aware of several design projects that have tried to address this web of abuse and misogyny, in hopes of restoring dignity and peace. But I want to talk about a particularly exemplary effort to address Colombia's future in light of this broad cultural bias against women, by using another dimension of Colombia culture—in this case crafts.
I learned about this project from Maria Puig de la Bellacasa. She is the author of Matters of Care and a professor in science, technology, and organization at the University of Leicester in England. More pertinently, she is a co-investigator in the project called Mending the New: A Framework for Reconciliation Through Testimonial Digital Textiles.7 She and her colleagues have been working with communities which have been crafting textiles for centuries—communities that have recently been severely affected by military violence. Maria tells me that rather than just documenting memories of war, textile crafting generates spaces of common reflection that has a healing, restorative, and constructive potential that negotiates between memory and reconciliation.
The textile crafting she's talking about involves many people—the most important being the women most affected by the war. Essentially what happens is that women gather in kitchens and homes and tell their stories to each other while they are weaving. Those stories are recorded (with their permission, of course) on digital fibers supplied by designers, which the women incorporate into the cloth they're making. When finished, each cloth can be activated so that others can hear those stories as well, and the textiles are traded from community to community. The women are the authors of their stories, while the designers contribute organizational skills (bringing women together) and technical expertise (adding sound to an otherwise mute piece of cloth). In essence, the age-old practice of oral history is amplified by the introduction of technology design. In the process, these weavings became the women's wills. The thing I find most moving about this project is that it combines another culture's haptic traditions (weaving) and its oral approach to storytelling with designers' digital ways of sharing stories. In other words, it respectfully combines traditional ways of making with contemporary technology in order to bequeath these women's stories in hopes for a better future for their daughters.

Another approach to making a will for the future, that I believe is more along the lines of what most people think of when they think of design futuring, is the process of co-envisioning. This is a process, which another of your guests Nik Baerton, is especially gifted at. I've worked with Nik and his partner Virginia Tassinari and their colleague Elisa Bertolotti, so I know something about their approach to co-creating possible futures.

I'm going to talk about one of their older projects from 2015 so as not to repeat what Nik might tell you when speaks. It's included my book Thinking Design through Literature.
This project is called "Welcome to Seraing." It is a storytelling project that Nik's team led to encourage social innovation in a neighborhood in the Belgian city of Seraing—a city that was once famous for its steel industry and is now facing

severe socio-economic challenges. In collaboration with a local puppeteer, the design team worked to foster new forms of civil participation.

As it was explained to me, the anarchic character of the puppet theatre allowed a tremendous freedom in encouraging audience participation. Specifically, it gave [the puppeteer] the freedom to make the voice of an outspoken working-class character, named Tchantches, to be forthright and honest, and to introduce characters such as the Devil, representing the private owners of industries, and the White Fairy, representing the designers, who arrive with good intentions and a great deal of naivete. (Designers take note: a sense of humor isn't out of place in future speculations.) Furthermore, an anonymous local hero was created as a surrogate for each and every inhabitant of the neighborhood. The storylines of the puppetry performances were co-created with inhabitants of the neighborhood via a storytelling toolkit, developed by the design team and based on the team's engagement with the inhabitants during field research.8
Now that's a fair summary of the project's strategies and tactics: Namely, using puppets as surrogate citizens, and using humor to engage the audience in a civic exercise that might have otherwise been tedious. But I also want to point out that there was a larger premise at work, which is designing in a way that redistributes power. Making the designer seem a bit silly was a stroke of brilliance.

Another important point is the project's reliance on a very old form of design: the puppet. Not only did the puppets literally act out the different sources of power within in the community, with an eye to distributing that power more evenly, they were also vivid and effective mediators by virtue of being familiar to the community. This combination of what I will call 'old fashioned' object design (namely the puppets) with service and systems design (conversations with the community) is precisely what is needed to gain the trust of people who are well outside of the culture of designthinking with its over-reliance on post-it notes, brainstorming, and other abstractions. This integrative design process is very similar to the previous example I offered from Colombia. Both projects involve coping with the past, towards the goal of a more humane future. But while the weaving done by the women in Colombia incorporates very specific and personal stories of violence, the conversations engendered in Seraing were more open-ended. They encouraged the city's residents to think both poetically and practically. For example, in another phase of this design engagement in Seraing, team member Elisa Bertolotti set up a table outdoors to make business cards for jobs that people wished they had. One man said he wanted to be a postman—a postman who only delivers good news. In this case, what is being willed are hopeful pathways toward a future that is more than just safe and secure but also psychologically and spiritually fulfilling.

Of course, approaching the future in the ways I've just described also requires a different understanding of time itself. As increasing numbers of designers recognize, design is embroiled in systems that operate in a different time-space dynamic than the one they practice in. Consider the environment: The particulate of our buildings, our children's toys, our kitchen appliances, and food containers continue to live, as it were, in new forms that collect in the ocean, in our drinking water, in our bodies, and all other sentient and insentient bodies. All that is solid doesn't melt into air, it morphs into different solids.

But for too many people, who can't see the destruction that is happening in the present, there seems to be little motivation to act for the future. We are not hard-wired to look out our windows, see the sun shining and trees waving in the breeze, and immediately think: "Oh, we are in the middle of an environmental catastrophe."

Moreover, we are too easily distracted by a 24/7 news cycle, another destroyer of time. But before we lay the blame on contemporary media, it's worth noting that human beings have historically been forgetful. As the poet Petrarch wrote in the 14th century:
Anything present is accessible for the minutest fraction of time and then escapes perception, and consequently foolish people think that it ceases to be relevant to us, or ceases to be ours. This oblivion prevents life being a unity of past events woven with present ones: it divides yesterday from today, as if they were distinct, and likewise treats tomorrow as different from today…[.] 9

Now the behavior of forgetfulness may be ancient but it is also true that coming to terms with time is far more complicated today than it was when Petrarch was writing. To paraphrase Anna Barbara (one of your conference organizers): The future is already present in the ways we inhabit spaces by virtue of the media that operates in those spaces. Conventional spatial coordinates are being warped by the speed and ubiquity of the digital.10

Another very important thinker on the effects of speed (once valued for making the future closer) is the sociologist Zygmunt Bauman.

In his book Liquid Modernity, Bauman writes that speed has frayed our social relationships and diminished any sense of security in our working lives. We live in a culture of distraction. Bauman warns of its dangers, writing:

> People who do not have even a modicum of hold on their present [much
> less their past, as they don't, given the shapelessness of experience] will
> not muster the courage to get a hold on the future.11

You could also say that his is an argument against traditional futuring, which as Petrarch observed, creates a state of oblivion. This is why designers are rethinking the ways we narrate our experiences and, just as importantly, our joint histories. So, in addition to designing wills that offer ways to share experiences (as with the women in Colombia) and reshape them for future generations (as in Seraing), we need to include a codicil—a modification to the will—which insures we pass on this more nuanced understanding of time. Time isn't an arrow going forward. It's more like a DNA helix, with dominant and recessive genes. (If you don't remember your high school biology, an example of a recessive gene would be a trait like red hair or blue eyes that only appears sporadically and unpredictably throughout the generations of a family.)

With the metaphor of recessive genes in mind, we also have to accept that there will always be unknown variables that we cannot envision, anticipate, or design for. The best illustrations of this aspect of the future (namely its unpredictability) can be found in the films of Todd Twyker. In each of his movies, the plot revolves around a miniscule change of routine – usually a change with devastating consequences. To just give one example, in "Heaven" (made in 2002), a woman seeking revenge against a drug dealer plants a bomb in the wastebasket in his office. But, unexpectedly a cleaning woman picks up the trash before it explodes. It does go off, but not as planned. The bomb explodes in the elevator of the office building where the dealer works, killing four innocent people instead. Here, chance is the protagonist.

Somehow, despite the number of deaths involved in Twyker's films, the viewer is left with an affirming sense that things could be otherwise in the future, if only we do something differently. And doing something differently is as good a definition of design as any, as long as when we do something differently, we do it respectfully and collectively.

It's humbling to think that even the most thoughtful and generous design is always vulnerable to arbitrary and unexpected forces (which by definition happen in the future). It would be hubris to think otherwise. But it's no excuse to despair, or to take no action. Our bequests will certainly be susceptible to the unpredictable events. And they may well be late in coming. But that doesn't absolve us of our debt to the future. We still have to write, make, and build those wills, and we have to do it together. We owe it to the future inhabitants of this planet to give them possibilities

instead of taking them away. No one wants to be disinherited.

End notes

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2.Elaine Scarry. On Beauty and Being Just, Princeton: Princeton University Press, 1999, 119-121.
3.David Eagleman, Sum: Forty Tales of the Afterlives (New York: Vintage, 2009) 69.
4.Ibid, 69.
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7.Puig, Maria de la Bella Casa, Mending the New: A Framework for Reconciliation Through Testimonial Digital Textiles https://gtr.ukri.org/projects?ref=AH%2FR013640%2F1
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9.“On Contentment,” Plutarch Essays, translated by Robin Waterfield (London:
Penguin Books, 1992) p. 229.
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演讲题目

TOPIC OF SPEECH

过渡设计：将长期的未来作为当前抗解问题的背景

TRANSITION DESIGN: THE LONG-TERM FUTURE AS CONTEXT FOR WICKED PROBLEMS IN THE PRESENT

特里 • 欧文
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在转型设计中的设计未来，是一种新的跨学科的方法，它是为了解决棘手的问题，并且去促进社会的发展。更加长远的未来必须是我们创作的、解决棘手问题的背景。转型设计认为，棘手的问题包括了社会问题、社区问题、可持续发展问题，它是具有挑战性的，是独一无二的，而且不断改变，有很多利益相关方，一个棘手问题跟另一个棘手问题总是联系在一起的，包括气候变化、恐怖主义、多样化、教育问题等。很多的问题变成了问题的组合，使我们更难去处理他们。

转型设计认为，像这种棘手问题必须要放在更加广泛的时空范围才能解决。而大部分的传统问题做法正好相反，他们是去找一个可以去解决的办法，但是如果一开始就把这个问题寻根究底就可以彻底解决。大部分棘手的问题它们之间是有相互关系的，没有任何的一个人或者一个学科能够解决所有的问题，它需要一个多样化的长期的努力才能真正解决这个问题。

而且这还需要非常重要的一点，更好的理解这些体系本身的行为，以及他们是如何依照实践演变。首先我们要定义这个系统意味着什么，特里·欧文以鱼不知道什么是水的笑话为例，鱼对于水是没有任何了解的，因为它们已经完全习惯于在水的环境当中。

所以，体系是无处不在的，而体系的互动也是无处不在的，我们并不了解这些体系，但是我们的工作就是要认知这些体系，了解它们的行为。我们生活在各种体系当中，包括有交通的体系、基础设施体系、经济体系、沟通体系，这些体系有各种文化和学科的标准，法律法规，它是一个更大的空间、时间的背景，产生了所有这些棘手的问题。所有体系都是不断的进行演变的，但社会基础体系仍是稳定的，然而变革是可以由小的事件、技术的创新和突破，信仰、生活标准，实践中的变化导致的。人类

社会总是在非预见性的转型当中，我们在事后才了解它的发生，我们把它叫做历史。

我们有意识的变革社会组织，使它变得更加可持续、平等和合意。转型设计认为长期的未来会朝着这个方向发展，它并不一定是我们所需要的未来，但是我们可以有意识的改变它的轨迹。我们也看到一些很小的当下的变化，可以对未来产生很大的影响，转型设计就是要去有意改变转型的路径。大多数的传统方法都是聚焦在理解这个问题的现状，然后紧急的去解决它，而转型设计认为在我们解决这个棘手问题之前，我们必须要了解它是如何产生的，所以我们要追溯过去，了解为什么，以及如何产生了这样的路径。转型设计认为我们需要有一个有长期的未来发展，有很强的动力的愿景，这就要进行从未来的回溯找到转型的路径，才能实现一个合意的未来。

我们在从过去到现在的过程中要树立几个里程碑，我们并不是去预测未来，而是我们希望更好的了解转型本身才能更好地探索可能性，而长期的愿景和这期间的各个里程碑可以驱动当下的行为，而我们最终的目标就是要将这些有关于未来的想法纳入到当下的解决方案当中。

第二个就是要引入应用的方式去解决棘手的问题，催化社会转型，要让相关的参与者去设定愿景的各个方面，从而朝着长期的合意未来发展。每天生活的各个领域形成了一个框架，我们考虑其中有机的体系、不同的层级构成每天的生活，包括家庭、街区、城市、国家和地球。在新冠疫情的背景下，家庭成为了每天生活的中心，在社会当中发挥越来越多的功能，成为了人们工作、学习、玩耍、饮食、社交定期的场所，因此现在建筑师们设计生活的空间就要能支持各种场景。家庭和社区现在也以一种新的方式进行连接，他们要保留和共享更多的资源，而且要加强共生环境的社会联系，要有更大的韧性。

在城市的层面上，更多的工作会以在家办公的形式展开，还有各个地方也会建立联盟加强国家的基础设施发展，以及绿色城市倡议，如建立绿化带、野生动物保护区，同时去解决各种环境的问题。在区域层面上，他们也会建立各种相关的支持性的活动来应对二十一世纪相关问题，结合在一起就会形成一个以未来为导向的故事，将所有的愿景集合在一起，作为我们行动的方针，同时也是一个指引转型的路线图。

我们建议参与者在这个路径的两端进行思考，要问一下现在第一个步骤应当是什么，还有是什么渐进的变化推动我们朝着合意的未来发展，这种变化新的做法和政策都是怎样的。

展望未来是一个持续的循环，对此，我们要有系统性的应对方法。我们不断的去改变展望，保持它的生命力、相关性，这样可以去应对需要解决的问题。

Transition Design is an emerging, transdisciplinary approach (Irwin 2019; Irwin, Kossoff, Tonkinwise 2015) for addressing complex wicked problems (Rittel, 1973; Buchanan, 1995; Coyne, 2005) and catalyzing societal transitions toward more sustainable, equitable and desirable long-term futures. Transition Design argues that complex problems must be framed within radically large, spatio- temporal contexts that include the past (how the problem evolved/what its roots are), the present (how it manifests at different levels of scale and who it affects) and the future (what we want to intentionally transition toward). Within the context of Transition Design, "futures" 1) is part of a radically large problem context within which wicked problems must be framed; 2) a creative visioning space in which stakeholders with conflicting agendas can transcend their differences in the present; 3) a place in which inclusive visions of the future act as powerful motivators to action in the present.

Wicked Problems Require Radically Large Spatio-Temporal Contexts

Transition Design argues that wicked problems took a long time to become wicked and will take a long time to resolve. Therefore, to appropriately understand and resolve them, a radically expanded problem frame is required. Transition Design argues that the larger historical context for the formation of wicked problems are socio-technical systems transitions (Geels, Schot 2010). Events, attitudes, patterns of living, technologies, infrastructure, "ways of doing things" and a host of smaller problems constellate over dozens of years, dozens of decades or even longer to become the wicked problems we are confronting in the 21st century.

Because of this, their historic roots, the contributing factors and consequences that make them wicked and intractable in the present, have long since been forgotten and therefore go unconsidered in the formulation of solutions or interventions. Expanding the problem frame can reveal insights from the past that can inform solutions in the present. Similarly, the resolution of a wicked problem is a process of transitioning toward a desired future that will likely take many decades. Most problem-solving approaches research a problem within a relatively small problem frame (to conserve time and budget) and will identify key stakeholder groups, privileging the concerns of some over others, and will then move directly towards the development of solutions. Transition Design argues that research into the problem's evolution, how it currently manifests at multiple levels of scale and who it affects, and a vision of the long-term future in which the problem has been resolved must all inform interventions to address it.

The Co-Creation of Future Visions Helps Stakeholders Transcend Their Differences in the Present

Wicked problems are highly resistant to resolution in part due to their complex social dynamics; they are comprised of multiple stakeholders with conflicting agendas who have no clear, shared problem definition. Often, stakeholder groups cannot agree on what the problem even is, let alone how to solve it. Another exacerbating factor is that stakeholder groups often cling to the hope (or conviction) that there is a single, "silver bullet" solution to a wicked problem. This frequently leads to ongoing and irreconcilable disagreements about whose solution is "right" and can halt progress toward resolution altogether

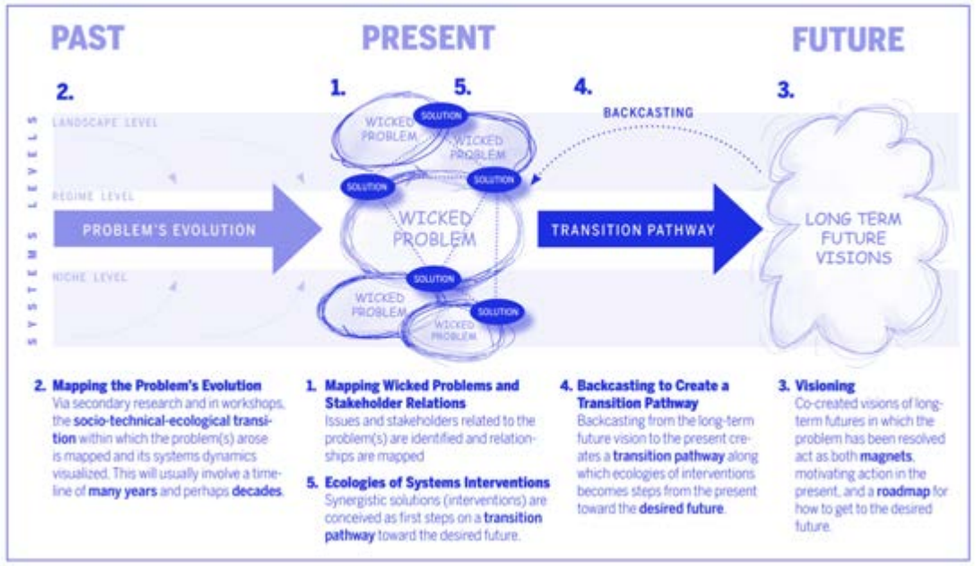
The Transition Design approach first maps the wicked problem in the present, integrating all stakeholder perspectives into a visual "problem map" in order to 1) enable stakeholders to experience the complexity of the problem first-hand and 2) come to the realization that there is no single, silver-bullet solution. Next, stakeholders are invited to co-create visions of a long-term future in which the problem has been resolved and upon which they can agree. In this way, the future becomes a creative space in which stakeholders

can transcend their differences in the present and imagine a future they all want (Irwin 2019).

Backcasting from the desired future vision to the problematic present creates a transition pathway along which solutions that become steps toward the future vision. Backcasting (Robinson 1982) differs from forecasting in approach. Forecasting extrapolates current trends (from within the dominant, unsustainable paradigms out of which the problem arose) into the future, whereas backcasting follows the co-creation of a long-term vision which intentionally re-conceives socio-economic-political paradigms and entire lifestyles that are sustainable and place-based, yet cosmopolitan in their global awareness and sharing of information (Kossoff 2019).

Visioning as Part of an Ongoing Process in Addressing Complex Problems

Transition Design argues that the process of "visioning" is not a one-time exercise that leads to a final and "fixed" vision, but is rather it is part of an ongoing process undertaken by stakeholders. Within Transition Design visioning could be considered a "futuring muscle" that is continually exercised in an ongoing cycle of 'problem mapping,' 'long-term visioning,' and 'solutioning' in order to intentionally transition toward more sustainable, equitable and desirable long-term futures.
Long-term future visions are seen as "snapshots" in a dynamic process of transition in which the vision must be continually updated after the system (systems problem) has responded to recent interventions (solutions). This is because each step along a transition pathway changes our perspective of the future (based upon new knowledge and a deepening understanding), so we must therefore continually revisit the long-term vision so that it remains vital, relevant and inclusive of all stakeholder concerns and hopes. In this way, the future (and the past) become vital and critical temporal realms that inform the design of solutions in the present.



演讲题目

TOPIC OF SPEECH

商讨性设计与设计未来

DISCURSIVE DESIGN AND DESIGN FUTURES

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斯蒂芬妮·塔尔普和布鲁斯·塔尔普从九个方面介绍设计扩展语言和工具，包括批判性的设计等，这些独特的论点，是我们思考的工具，激发人们的反思，让我们把理论和实践联系在一起。

布鲁斯·塔尔普认为设计是一种方法，去解决气候变化、儿童肥胖等等各种各样的问题。有了设计工具，可以帮助我们围绕这些话题进行反思。这是一个对于未来的愿景，它着重于怎么去做，像一个产品的路线图。

斯蒂芬妮·塔尔普和布鲁斯·塔尔普通过研究创造出了一系列的工具和语言，让人们创造出一些作品来表现人们的反思。他们认为这些理论工具可以支持设计者，以无人机为载体，同时处理其他的问题，包括公民参与，还有环境问题、气候变化问题等等。

话语设计的九个方面给我们制造了一个设计的框架。

第一个是意图，就是一个设计者要去做什么，你的初心是什么，它决定了你之后所有关于设计的决定，让你了解你在做什么，为什么这么做，当你知道你要做什么的时候，你会更加的高效。

第二个目标是激起人们思考，比如无人机的例子，无人机的存活指南，像一个关于无人机的海报，在这里可以看到无人机的功能，国籍，无人机的黑客问题，反射材料，并可以跟无人机进行干涉。另外，要了解工作的对象。商业设计者要了解他们的用户，还需要非常了解这个话题才能具有公信力。

接下来一个方面就是信息，尤其是在产品设计上，因为话语设计根本上来讲是要进行沟通的，必须要有效，要能够进行互动。所以我们强调的是信息的内容，让设计者参与到不同话语当中的核心，这可以提高他们的社会参与度。斯蒂芬妮·塔尔普和布鲁斯·塔尔普引入了一些不同的信息模式，比如分析、

分类、定义、比较过程等等，观察信息内容是如何嵌入到具体的信息形式中，从而改善话语，进行更有效的沟通，所以信息的模式是可以是生成性的或者是一个工具。 这个项目的一部分就是创造具有检测的装置的无人机，通过了解女性单独在户外进行徒步的时候会有哪些外部的袭击、外部的影响，设计的无人机就有很多女性因素，它和一般的无人机在外形和功能上是有差别的。

接下来一个方面是场景的重要性。设计师通常为了传递信息而设计场景，我们可以通过物体的设计与目标群体进行对话，用故事、视频、音频来表现显性的场景，隐性的场景是可以通过内在的联系来激发思考，从物理世界通过这些场景的设置引发进一步的深思。

接下来就是物品，通过物品作为故事讲述的主体，起到描述性或者阐述性的作用，包括清晰度、现实性、合意性等维度等等。比如无人机的游戏的项目，无人机观察专门为残疾人车辆设计的停车状况，获得一些分数的同时也可以更好的设置停车的场地。在这些环境当中实际虚构的场景也可以发挥很大的作用，是可以和现实连接起来的。

下一个方面是目标群体，也就是跟设计者对话的对象。在话语设计当中一定要有一个听众，这里呈现了三种主要的设计者和听众的关系：一是你只有一个听众，比如你设计的一个物体在展厅当中展览，只有一个听众没有使用者；也有可能这个听众意识到这个物体会有实际的使用，或者听众看到了它的现场使用; 三是听众同时也是使用者，以斯蒂芬妮塔尔普刚才讲的无人机 APP 为例，当你每次看到有美军的无人机飞行的时候这个 APP 就会收到提醒通知，然后你可以看到这些无人机在地图上的位置。开始这个 APP 被苹果禁用了，但随着我们获得了越来越多的订阅者，在 2017 年这个 APP 又被通过了。APP 可以让公众能够提高对于无人机的认识，这些数据直接的投入到了听众的手中，让他们可以与设计者进行直接的对话。

然后是语境，语境和场景不同，这是真实的环境，所以我们的设计者应该考虑比如像实验室、诊所、市场、数字、网络、论坛等等这些语境，这些都对话语设计产生影响。设计者应当考虑的进行传播的四个维度，像注意力、情绪等等。

接下来是交互，我们有各种各样的交互的可能性，鼓励设计者去深入的探索。他们介绍了比较简单的模式，就是有物体、使用者、设计者三个的交互，如何去提高信息的传递，进行更有利的沟通和个性化的设计。

最后一个方面就是影响，就是在多大程度上项目可以产生预期的影响，因为忽略了过程的复杂性，话语设计通常可能遇到声称对社会产生的影响被高估了的问题。有时候这个物体可能会对社会产生影响，下图列出了物体对不同场域不同的方法产生的影响，每个层级都是很有挑战性的，但是我们可以从一些小的目标开始着手处理。

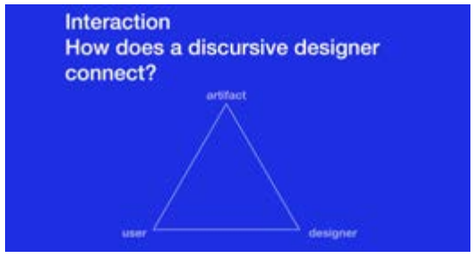
我们要对我们的影响进行测量，知道对它产生的总体影响是什么样的，以及如何产生影响等等，我们的目标是能够建立一些工具，让我们有更加强大的话语性设计，这些都跟我们的未来理论是相关的，最重要的一点，就是我们要能够把理论和实践联系在一起，我们的理论是为了支持实践。

所以，设计未来是表达一定形式的反思，我们未来的工作是要反映一定的社会价值观，要去想一下未来的人是什么样的价值观，他们用什么样的技术，引发人们思考，支持设计未来的一些目标。

Over the last decade discursive design has increasingly been used to support future-focused work within design practice, design studies, and design education. Discursive design is an umbrella term that encompasses popular approaches such as critical design, speculative design, and design fiction. With their unique qualities, these forms of discursive design are all tools for thinking. Rather than utility or aesthetics, their ultimate aim is to inspire reflection upon substantive sociocultural discourses such as climate change, gun control, genetic engineering, immigration, and animal rights. These issues have important implications for the present but are also the subject of futures work— within design and beyond.

This talk introduces theories, frameworks, and approaches within discursive design that support designers' practical efforts in visualizing and instantiating artifacts that improve people's ability to imagine possible futures. The underlying belief is that people can better impact the future through richer imagination, reflection, and rhetorical experience of what is possible.

After locating discursive design within the broader design landscape, we will discuss the domains in which it can operate. The talk is structured around the introduction of nine facets of discursive designing—Intention, Understanding, Message, Scenario, Artifact, Audience, Context, Interaction, and Impact—that are intended to help guide the design development process. Using drones or unmanned arial vehicles (UAVs) as examples, we highlight opportunities and differences between conventional design approaches and discursive ones. Ultimately, we wish to show how discursive design theory can inform and improve the practice of design futures.



c/

圆桌论坛嘉宾分享

PANEL 3

未来赋能

多层次视角下
产业与创新趋势

FUTURE EMPOWERMENT:
MULTIPLE PERSPECTIVE VIEW OF THE INDUSTRY AND INNOVATION TENDENCY

主持人

MODERATOR

薛海安

XUE HAIAN

代尔夫特大学博士后研究员

Post-doc researcher, TU Delft

演讲题目

TOPIC OF SPEECH

DEXIGN 未来

DEXIGN FUTURES

阿诺德 • 瓦瑟曼
ARNOLD WASSERMAN

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新加坡 The Idea Factory Consultancy 董事长
Founding Principal, Collective Invention Consultancy, San Francisco
Chairman, The Idea Factory Consultancy, Singapore

对于未来，阿诺德·瓦瑟曼强调了他的观点：不要试图去推测未来。我们可以做的是去了解那些可能影响未来变化的力量。在这个过程当中，制定你的战略，不断去寻找薄弱的环节、变革的力量以及发展的轨道。

在未来领域工作的人，因为背景不同而有着不同的思考。阿诺德·瓦瑟曼认为，我们需要和不同领域专长的人一起工作，确保项目中有更多不同的人、不同的声音、不同的语言。这使我们可以进行以人为本的设计、以社会为本的设计，而不再是以物为本。我们可以考虑到复杂的社会、经济以及技术背景。我们要从远见到先见，进而实现对外来的预见。

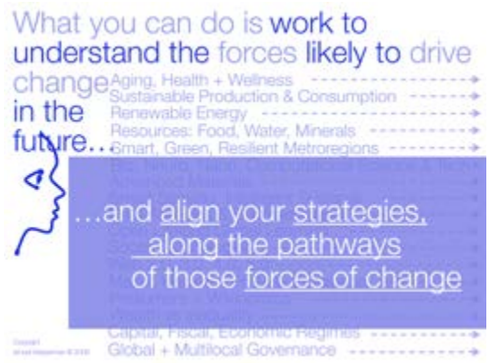
从人类起源开始，人类的行为对于地球的影响在不断扩张，人类对于物质的需求越来越多。然而，随着需求的进一步增加，未来地球上的资源将会面临巨大的短缺。按照当前的发展，到 2050 年，地球上将会有 98 亿人，需要目前地球资源的三到四倍才能支撑我们的生活。

为此，我们需要有绿色、智能的发展。2050 年距离现在只剩下 30 年，情况十分紧迫。我们希望 50% 的地球重新实现野生自然的状态，这实际上也是生物学家提出来的目标。

以上是可持续发展商业委员会给出的愿景，它们希望在 2050 年 96 亿人民能够在地球的承受能力之内幸福地生活，拥有更好的教育、医疗和就业机会。其中有一些目标很有挑战性，农业方面的产量需要达到 100%，二氧化碳的排放也需要减少一半。

我们把实现愿景的途径进行了分解，分成了以下四个领域。大家可以登录 WBCSD 的网站，看一下他们对于这些报告的具体内容。

在 QA 环节，主持人提出了“设计师是否应该参与到政府政策制定与决策制定的过程当中”这一问题。对此，阿诺德·瓦瑟曼表示，设计师大多数并不想过多地涉足政治领域。然而事实上，设计者需要参与到管理过程当中并制定公共议程。不光是设计师，每一位公民都要参与其中。



For the future, Arnold Wasserman emphasized his view: don't try to speculate about the future. What we can do is to understand the forces that may affect future changes. In this process, formulate your strategy and constantly look for weak links, the power of change and the track of development.

People working in the future field have different thoughts because of their different backgrounds. Arnold Wasserman believes that we need to work with people with expertise in different fields to ensure that there are more different people, different voices and different languages in the project. This enables us to carry out people-oriented design and society-oriented design, rather than material-oriented design. We can take into account the complex social, economic and technical background. We should from foresight to foresight, and then realize the foresight of outsiders.

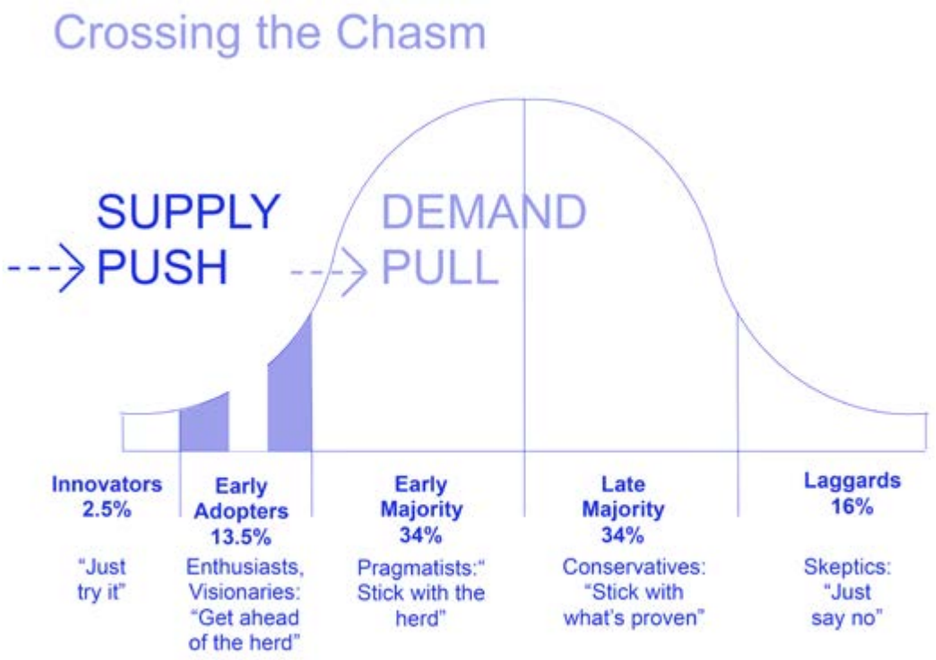
From the beginning of human origin, the impact of human behavior on the earth is expanding, and human demand for materials is increasing. However, with the further increase of demand, the resources on the earth will face a huge shortage in the future. According to the current development, there will be 9.8 billion people on the earth by 2050, which needs three to four times the current earth resources to support our lives.

Therefore, we need green and intelligent development. 2050 is only 30 years from now, and the situation is very urgent. We hope that 50% of the earth will return to the state of wild nature, which is actually the goal put forward by biologists.

These are the vision given by the Business Council for sustainable development. They hope that by 2050, 9.6 billion people can live happily within the affordability of the earth and have better education, health care and employment opportunities. Some of these goals are challenging. Agricultural production needs to reach 100% and carbon dioxide emissions need to be reduced by half.

We decompose the ways to achieve the vision into the following four areas. You can log in to WBCSD's website to see their specific contents of these reports.

In the QA link, the host raised the question "whether designers should participate in the process of government policy-making and decision-making". In this regard, Arnold Wasserman said that most designers do not want to get involved in the political field. In fact, however, designers need to be involved in the management process and set a public agenda. Not only designers, every citizen should participate.



演讲题目

TOPIC OF SPEECH

设计未来实现更智慧的文化

DESIGN FUTURES FOR A WISER CULTURE

斯图亚特 • 凯迪
STUART CANDY

卡内基梅隆大学设计学院副教授

Associate Professor, School of Design, Carnegie Mellon University

斯图亚特·凯迪强调了如何“感受、体验、经历未来生活”以及如何“实现更加智慧的社会发展”。

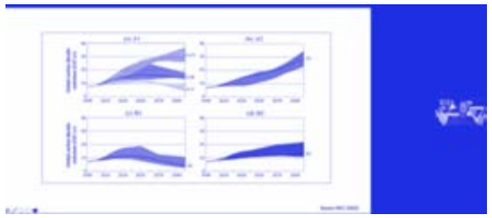
我们需要让世界上最有影响力的人真正能够意识到一百年后的灾难性后果，它会永远改变地球上人类的生命。当前，我们一方面经历着灾难，另一方面我们依然继续着目前的生活状态。如果我们不能让人们对事物形成远见的意识并培养人们形成习惯，这样的未来将是十分灾难的。

斯图亚特·凯迪和同事曾经将 550 个人分成不同的体验场景，体验一下夏威夷在 2050 年是什么样的。我们发现，人们在真正地尝试走进他们的未来，并且逐渐接受并适应了未来的生活。人们摆脱了对于未来哲学性的哲思，而是在静心考虑“至少可以做的最简单的事情”。94% 的实验对象都表示他们改变了对未来的看法，同时他们也愿意为此做出行动。

斯图亚特·凯迪把这个项目过程中做的物品放到社区里，期望让人们感受到未来并且去关怀未来。在唐人街，我们展示了如下作品。我们思考，“如果中国成为一个地缘政治最强大的国家会发生什么”？夏威夷有着非常重要的战略性位置。这个雕塑融合了历史，同时展示了文字，一边是夏威夷本地的文字（LOKAHI），另一边则代表着中国（和谐）。这件作品让社区发生一些对话，想象中国和夏威夷之间的关系，引发人们思考：当历史发生改变的时候，二者之间的关系会有什么样的变化。

斯图亚特·凯迪还介绍了他和红十字会、迪拜未来博物馆以及 BBC 的合作经历。在 QA 环节，主持人提问了“对于未来，我们的预测有多大可能会发生？如何评估它的可能性与务实性？” Professor Candy 表示，可能性和务实性都是设计的相关领域，并不是二选一。这是多维度的问题。对于未来的设想首先应当听起来是荒谬的，而并不是很有挑战的。

如果没有接触比较荒谬的想法，你可能没有真正的改变思维，没有对已知世界进行重新的讲述和解读，没有真正去看到未来的变化。



Stuart Cady emphasized how to "feel, experience and experience the future life" and how to "achieve smarter social development".

We need to make the most influential people in the world truly aware of the disastrous consequences in 100 years, which will change human life on earth forever. At present, on the one hand, we are experiencing disasters, on the other hand, we still continue to live in our current state of life. If we can't make people form a sense of foresight and cultivate people to form habits, such a future will be very disastrous.

Stuart Cady and his colleagues once divided 550 people into different experience scenes to experience what Hawaii will be like in 2050. We find that people are really trying to enter their future, and gradually accept and adapt to the future life. People get rid of the philosophical thinking about the future, but are meditating on "at least the simplest thing they can do". 94% of the subjects said they had changed their view of the future and were willing to take action.

Stuart Cady put the items made in the process of this project into the community, hoping to make people feel the future and care about the future. In Chinatown, we showed the following works. We think, "what will happen if China becomes the most powerful geopolitical country"? Hawaii has a very important strategic position. This sculpture integrates history and displays words. On one side, the local words of Hawaii (lokahi) and on the other side, it represents China (harmony). This work allows the community to have some dialogue, imagine the relationship between China and Hawaii, and arouse people's thinking: when history changes, what will happen to the relationship between the two.

Stuart Cady also introduced his cooperation experience with the Red Cross, Dubai Future Museum and BBC. In the QA session, the host asked "how likely is our prediction to happen in the future? How to evaluate its possibility and pragmatism? " Professor candy said that possibility and pragmatism are related fields of design, not one of two. This is a multidimensional problem. The idea of the future should first sound absurd, not very challenging. If you don't come into contact with absurd ideas, you may not really change your thinking, re tell and interpret the known world, and really see the changes in the future.

演讲题目

TOPIC OF SPEECH

迪拜的未来建筑生态

DUBAI BEYOND LANDMARKS FUTURE ARCHITECTURAL ECOSYSTEMS

胡安 • 罗丹
JUAN ROLDAN

沙迦美国大学建筑艺术与设计学院副教授

Associate Professor, Architecture and Interior Design at the College of Architecture, Art, and Design, American University of Sharjah

现在在海湾地区有很多令人激动的发展，我们希望能够让大家对这个地方有更多的了解。在迪拜有很多非常著名的建筑物，现在这些建筑已经成为了迪拜的象征。

一提到迪拜，我们会想到这些高大的、宏伟的建筑物。从电影里面也可以看到，低密度地区占到迪拜的开发区面积 5%—7% 左右。

迪拜对未来也有着有趣的愿景，比如时间如何去塑造城市，这是在之前的建筑设计中所忽视的地方。在过去，我们更多看到的是高塔，现在我们也在向艺术空间转型。将不同的元素纳入到复合的艺术空间当中非常有意思，这不仅要站在全局的角度来完成，而且这要求我们对此有精准的定位，如在其中进行装置设计，设计影院，以及其它艺术元素的融入与设计。

说到思辨，我们看到年轻一代在非常积极地重塑区域未来的建筑。去年，沙迦美国大学曾获得了建筑奖。因为在沙迦，所有过往的建筑物都消失了，我们要对建筑物进行重塑。这个项 90% 都是与自然景观的融合。这是一个非常大胆的设计，是重新思考自然后进行的更隐蔽的设计。胡安·罗丹在过去的 11 个月里参与到了这个项目中，希望通过这个项目展示一些思辨工具，对未来进行展望与想象。

这是一个从北到南的高速铁路。我们有一个愿景，希望建立一个行人步行的空间。现在，这个高速公路已经建立了起来。因为有了人行道，我们可以建立广场，让步行者在这里休闲。类似这样，我们还有很多可以发挥的空间，这也是我们的客户比较关注的地方。由于很多高质量的公共空间存在很多的问题去在当下提供，所以他们更加欢迎面对未来的体验。

The built environment of the GCC countries can be studied as a convoluted amalgamation of a fast-paced architecture over the past 45 years. The region has witnessed dramatic development encompassing a broad spectrum of urban and economic changes that are reflected upon its complex spatial and social tissues.

Over the last years, emerging architecture works have gradually become part of the regional culture and social context, finding the venues, institutions and patrons to host and support them as an added cultural and economic value to the region. This diverse and complex new architectural landscape of the GCC has three main conditions that have supported its emergence. First of all: a mature generation of local and foreign designers who better understand the nuances of the historical and cultural context. The fact of having an increasing number of governmental and private institutions that have idiosyncratically emerged in the region has created a growing architectural awareness among institutions and patrons interested in a distinctive and contemporary approach to architecture as delivering added value to the economy and society.

The talk will walk the attendees through a "subjective map" of the architecture in the region. A "new cartography" with all stakeholders involved in the architectural process: architects and clients, private/public institutions, construction companies, photographers, and journalists. I do hope the talk and discussion can change some preconceptions about the contemporary regional architecture (known as the tallest, biggest, largest), it is by understanding this new architectural landscape. A map of large, medium, and small works which clients have understood as an added -economic and cultural- value to the built environment. A crucial factor of this shift is a mature generation of local and foreign designers, who have a keen understanding of the historical context, appreciate the inherited built environment, and understand the landscape as an ally.

Reflecting the conflicts of the context, its landscape and built environment conditions. It's cultural and historical values.
Diversity of stakeholders responsible of a new model of operating, an evolved model which reflects the regional spirit of the place: exchange, flow, welcoming, where transient is becoming permanent

The lecture will focus on what can be considered a new shift in the architectural scene in the region, showcasing architectural works, connecting the dots between them and the rest of stakeholders, making it possible: architecture schools, cultural institutions, and public and private clients who understand architecture as an added value for the economy, society, and the built environment at large.

The time for the "tallest, the biggest and the largest " is almost over. However, these iconic landmarks in the region have allowed new critical thinking in the area, thanks to the intellectual work developed at different cultural and educational institutions, pondering problems and errors in the past built environment.

A new ecosystem of medium and small scale works have now risen, designed by a new generation of architects with a deep understanding of the cultural and historical context. Works with an intense sensitiveness towards the heritage or the landscape understood as a new asset.

演讲题目

TOPIC OF SPEECH

重新固化社会

RE -SYNCING SOCIETY

尼克 • 贝尔登
NIK BAERTEN

Pantopicon 创始人
Founder & Future explorer at Pantopicon

对于未来的想象不应该是完全基于对过去的认识。尼克·贝尔登在项目里通过与当地的居民对话，意识到了解他们对于未来的想象是很重要的。在合成生物学方面，尼克·贝尔登也在寻找如何对绿色的城市空间产生影响，让环境通过人们对未来的想象和生化领域的结合产生更大的作用。我们不光要从科学角度考虑，从文化角度我们也可以考虑如何更加丰富我们的研究领域。比如语言，这不一定是科学语言，也可以是文化语言。

让人们加入到讨论关于未来的话题十分重要，因为这些都会影响他们的未来生活。不同的思考会有不同的挑战，人们对于未来都会有跟自己相关的设想。对于未来的想象，最有效的就是要把这些不同的视角结合起来，让他们产生冲突，激发火花。我们要了解人们的期望，人们希望看到什么以及不希望看到什么。
对于未来的探索是一个复杂的过程。如果不能有不同的视角参与其中，我们可能步入一个非常不确定的环境或是令人恐慌的环境。如果失去了信息的同步性或是信息产生不对称，这会产生很多很大的问题。

比如我们在考虑热带雨林的相关问题时，我们可能会参考一些政府的意见，还有当地土著人民的意见。如果只倾听一种意见就可能有所偏颇。所有的人群都要参与到对未来的讨论当中，我们不能只以一种文化思维来考虑未来，这样我们带来的解决方案一定不是最优的。如果没有对未来的争辩，没有驱动力，在对未来塑造的过程中就会有对于当下的偏见。

共同探索未来的一种方式就是共同行动。分析探讨是一种方法，但是并不是每个人都准备好去参与这个过程。体验也是一种方式。我们在荷兰的一个小镇上做了互动。我们希望能够吸引更多的当地人加入到对未来的讨论当中，让他们通过体验来阐述对于未来的想象。我们在这里建了商店，人们可以通

过这里的商品来体验未来的生活。有人给了我们一个心愿清单，我们告诉他“这些皆有可能”，可以通过购物的体验去想象未来你还需要获得什么。

设计可以使我们的先见变得更可视化，它可以领导人们去进行对话，进行交互，而且通过实践进行研究。从先见到设计，无论是对于空间、政策，还是产品、服务，在很多方面先见可以重新去塑造设计理念，可以带动更多的相关方参与。作为设计者，你要去考虑你在社会中的作用，要去考虑一些新的问题、新的挑战。你的设计可能会给世界带来哪些新的问题、新的挑战，这就是双方相互可以辅助支持的领域。

The imagination of the future should not be based entirely on the understanding of the past. In the project, Nick Belden realized that it was important to understand their imagination of the future through dialogue with local residents. In terms of synthetic biology, Nick Belden is also looking for how to influence the green urban space and make the environment play a greater role through the combination of people's imagination of the future and the field of biochemistry. We should not only consider from a scientific point of view, but also consider how to enrich our research field from a cultural point of view. For example, language is not necessarily a scientific language, but also a cultural language.

It's important for people to join the discussion about the future, because these will affect their future life. Different thinking will have different challenges, and people will have their own ideas about the future. The most effective way to imagine the future is to combine these different perspectives to make them conflict and stimulate sparks. We need to understand people's expectations, what people want to see and what they don't want to see.

The exploration of the future is a complex process. If we can't participate from different perspectives, we may enter a very uncertain environment or a frightening environment. If the synchronization of information is lost or the information is asymmetric, many big problems will arise.

For example, when we consider issues related to tropical rain forests, we may refer to the opinions of some governments and local indigenous peoples. If you only listen to one opinion, you may be biased. All people should participate in the discussion of the future. We can't think about the future only with a cultural thinking, so the solution we bring must not be the best. If there is no debate about the future and no driving force, there will be prejudice against the present in the process of shaping the future.

One way to explore the future together is to act together. Analysis and discussion is a method, but

not everyone is ready to participate in the process. Experience is also a way. We interacted in a small town in the Netherlands. We hope to attract more local people to participate in the discussion of the future and let them explain their imagination of the future through experience. We have built a store here. People can experience the future life through the goods here. Someone gave us a wish list. We told him "these are all possible". You can imagine what you need to get in the future through the shopping experience.

Design can make our foresight more visual. It can lead people to dialogue, interaction and research through practice. Seeing the design first can reshape the design concept in many aspects, whether for space, policy, products and services, and can drive more interested parties to participate. As a designer, you have to consider your role in society and some new problems and challenges. What new problems and challenges may your design bring to the world? This is the area where both sides can assist and support each other.

d/

圆桌论坛嘉宾分享

PANEL 4

未来趋势

未来生活场景实验与智慧社会实践

FUTURE TREND:
FUTURE LIFE EXPERIMENT AND INTELLIGENT SOCIETY PRACTICE.

主持人

MODERATOR

钟芳
ZHONG FANG

清华大学美术学院社会创新与可持续设计实验室联合负责人

清华大学美术学院生态设计研究所副所长

Co-coordinator of DESIS (Design for Social Innovation and Sustainability) Lab, Academy of Arts &Design, Tsinghua University

演讲题目

TOPIC OF SPEECH

远见与设计

FORESIGHT WITH DESIGN

约恩 • 比林
JÖRN BÜHRING

香港理工大学助理教授
Ignite Innovation 项目负责人
Design Economies 召集人
Assistant Professor, Design Foresight & Strategic Innovation, School of Design, The Hong Kong Polytechnic University,
Ignite Innovation Program Leader,
Convener of Design Economies

约恩·比林主要关注商业和战略决策之间的关联。

首先约恩·比林介绍了环境背景的复杂性，以自己的个人经历为引指出，我们对于未来的预见是很少的，且缺少深入对话和创造性思维，因此我们需要对未来进长远的畅想和视觉化表现。

在商业领域中，大多数机构都面临产品和服务的创新，满足市场、客户等主要问题，也在关注未来发展的主要趋势，积极进行战略思维和战略决策。我们还需要更多地了解什么是远见，有远见的设计以及有设计的远见意味着什么。

我们在过去都在进行远见设计的实践，有的时候可能过于聚焦在当下和在机构本身，实际上我们应该更多的拥抱不确定性，所有的事物、生命种类都在经历着不确定性。我们必须要让创新更有意义，要让企业、研究机构、学术界和政府机构形成合力。

如上图所示，我们非常熟悉这条曲线。我们可以发现在进入新时代时，我们从一处跳到另一处，这就是新的时代转移，而很多大公司往往会忽略这一点。屏幕中间的部分表示了许多种不同的可能性，让我们去了解这种新兴的趋势，包括人工智能、机器人等等，从而帮助我们了解到未来的各种可能性。

我们为什么需要未来的思维？因为它让我们有创新性设想可能的将来。我们要使用创新技术、自动化、机器人等方法，联合企业等各个利益相关方，进行更加包容的可持续性发展，从合理的方向走到我们愿意迎接的未来。

未来的思维是需要去变成每日实践的事情，是不断去重新塑造战略性挑战的一种能力，我们要使用现在的供给预见到将来。移动技术、云计算、大数据、社交媒体还有人工智能，它们相互之间都是有互动的，如果我们不小心的话，很可能进入大家都不愿

意看到的未来。约恩·比林希望我们在创新的同时要去考虑到所有的物种，而不仅仅是人类；要考虑到人们的隐私、互信等等。

约恩·比林希望我们不要忘记身体的存在，要更加着重于生活中的声音，真正去体验生活。人们一方面在使用人工智能，一方能在这个过程中不迷失自己，找到平衡。

最后，约恩·比林希望我们首先要有系统性、融合性思维，质疑现状，同时培养未来的思维能力，预测未来趋势，创造一个合理的未来。还要有开发、试验和演示的技巧，将我们抽象的想法进行具体化。

Amid accelerating environmental complexity and uncertainty, businesses across all sectors of the economy have to deal with economic, technological, and societal challenges that could impact sustainable growth and broader social benefits. Digitization is accelerating the pace of change on a global scale, and the resulting market dynamics are triggering unprecedented challenges to organizations, and rising levels of anxiety for the people within. Additionally, changes today are no longer happening in isolation—they are connected, interconnected, and occurring simultaneously, just as the forces of globalization, politicization, environmental sustainability, and a global pandemic are captivating the attention of every business leader. Consequently, an organization's vision and strategic direction need to take into account a rapidly evolving external environment, and decision makers who plan, decide, and act to influence change, need to rely on their ability to make sense of the external world and a new approach to the future in increasingly turbulent environments. While every period in history contains its own uncertainties, thinking about the future takes on added urgency in times where the pace of digital change has quickened, and the survival of the organization hinges on higher- level strategic considerations and a broader range of capabilities in support of dealing with change. In a broad sense, for decision makers to deal with uncertainty, their capabilities for anticipating change through prospective, or "future-oriented" devices become an essential aspect of an organizations' strategic planning and decision-making capabilities. Indeed, recent global industry studies into the evolving corporate strategy function for a world of disruptive change corroborate the importance of developing strategic scenario planning processes beyond the financially oriented mechanics to become more dynamic, continuous, and forward-looking to explore new strategic, life-centric, and sustainable possibilities. After reviewing the evidence that the world has changed, observations suggest both the theoretical and pragmatic value of focusing on the question: How to increase the organizational capacity to

deal with uncertainty and prepare for the future? Resulting from theoretical and applied field research in a diverse industry context, a series of conceptual 'high-level' futures thinking factors were identified: (1) Achieving insights and alignment around current reality; (2) Facilitating a productive Design conversation; (3) Specifying a portfolio of desirable futures; and (4) Active experimentation to gather new knowledge and learning. Consequently, the purpose of this presentation is to make the case that decision makers need to rely on a new, emerging approach to the future in the increasingly turbulent environments they face today. To this end, the foresight and design disciplines provide a new paradigm to approach the future that takes the uncertainties and opportunities of the current VUCA world into account.

Key Highlights
1. Traditionally, forecasting and planning techniques were extrapolative and based on the assumption of continuity that no significant disruption would occur before the time horizon.
2. The Internet has brought connectivity to the globalized world, connecting people and issues at an increasing pace as never before.
3. Professional futurists develop hypothetical scenarios for decision makers to prepare for a different future than the one expected.
4. Professional designers of products and services develop new techniques and visualization tools to assist decision makers in envisioning new opportunities.
5. Combining creativity, visualization, and analysis methods and techniques found in design and foresight presents a new approach (paradigm) in support of strategic decision-making in an age of uncertainty, and a rapidly advancing information environment.

演讲题目 TOPIC OF SPEECH

居住空间的新复杂性

THE NEW COMPLEXITY OF INHABITED SPACES

芭芭拉 • 卡莫西尼
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芭芭拉·卡莫西尼从她的个人体验出发，讲述了受到宜家数字版手册的启发，从而希望了解世界上不同区域的需求，并试图用不同的形式满足当地的需求。手册希望展示疫情对于室内空间产生了怎样的影响，行为、空间的特征在疫情之下会留下怎样的印记，以及设计师在其中可以发挥怎样的作用，这让芭芭拉·卡莫西尼开始去思考疫情对于内饰设计的影响。

疫情期间，家对于芭芭拉·卡莫西尼而言像个避难所。这让芭芭拉·卡莫西尼重新思考室内空间，考虑它的主要价值是什么，考虑这样的空间作为避难场所的定义，和它的边界在哪里。我们很小的时候住的第一个房子是小时候的宇宙，它在我们的记忆当中留下了深深的印记，就像母爱的感觉，这是我们对于室内空间的解读。

私密性对室内空间也非常关键，当芭芭拉·卡莫西尼研究空间设计还有内饰设计的时候，有时会考虑它的功能、审美、文化和社会的因素以及历史视角，有时考虑社会和经济背景，现在这些都成为了次级的考虑因素，而私密性是最主要的。在日常生活当中，人与人之间的关系的私密性就是和人际关系相对应的一种视角。

如果我们的未来是由这些特征所界定的，而现在我们要去克服这些边界或者障碍，让公共空间变成私人空间，包括智能工作、在家上学或者在家健身等等。把公共的生活变成自己可以控制的私人和居家的生活，把它们放到室内。我们要去打破这些边界，在室外公共空间和室内的个人空间边界要被打破，这种新的革命往往会重新改造整个人类所生活的宇宙，由此改变了我们的穿着、行为和组织方式。

另外一个因素也是非常重要的变化，现在居家的时间比以前更多了，之前我们有固定的在家里的时间。通常室外活动与室内活动是分离的，现在房屋让我

们有机会重新考虑我们的设计模式，我们要去了解房屋的意义在哪里。这是有一个不断适应的过程，我喜欢“适应”这个词。它也跟人类有机体非常相关，我们在不断去调整适应。我们已经分析和观察了，新冠疫情对于室内活动的影响或者室内设计的影响，我们对此应该有什么样的反应?
融合、重叠、共存等一系列的战术在公共空间当中的使用，在疫情期间意味着什么？芭芭拉·卡莫西尼提出，我们要去试验一些战术是否能够实现我们的目标。其中，居住者的概念更加重要了，他们既是使用者又是设计者。面向他们的设计培训，可以帮助我们找到解决方案，居住环境生实际上是一个很复杂的有机生态体系，和很多方面有紧密的关系，需要有想象和对文化的思考。

芭芭拉·卡莫西尼回顾生境的定义，为生物的生存和生活提供一系列生态资源。这要求我们在内饰的创造中不断实践，这一点对人的生存发挥着至关重要的作用，而且有关价值、问题和空间形成的复杂的存在，既包括物理，也包括心智层面。

I would like to share with you my thoughts about the impact of the pandemic (pressures, influences) , specifically on domestic interiors, adopting both the point of view of an academic, studying spatial design and, and above all, the one of a person who has experienced the lock-down. I am pretty sure that (unfortunately) my western perspective of observation as regards the nature of domestic spaces will be evident, but since I work in contact with an international network linked to my teaching and research activity, I had the opportunity to discuss some insights and verify whether they are acceptable. Indeed, when I talk about ‘domestic’, the word itself is referred to the house, ‘domus’ means home in latin.

2.Handbook
I spent my summer holidays with my family in the mountains, perceiving it as a therapy to heal from the negative effects of the lock-down and, besides that, believing it was an ethical behavior to help reducing the strength of the pandemic.
While being there I kept working and studying (with a bad connection, but as expected, and wished, sort of), I received by email the IKEA new year catalogue (IKEA is no longer sending a paper catalog to every IKEA Family Member they send only the on-line version,).
The title was ‘handbook for a better everyday life at home’
- IKEA (founded in Sweden in 1943):
IKEA offers well-designed, functional and affordable, high-quality home furnishing products made with care for people and the environment.
There are several companies with different owners working under the IKEA Brand, all sharing the same vision: to create a better everyday life for the many people.
- The 2021 edition of the IKEA Catalogue marks its 70th birthday,
it will be celebrated turning its catalog into an inspirational handbook.
adding that this year their catalogue/handbook were addressed to the different geographical areas perhaps responding to more specific demands.

I started thinking about the meaning of handbook (we will be back on it later)
and why they decided to do that now.
Is it related to the pandemic?

Therefore the main questions raised (I think I share them with the other scholars and designers)
- What is the impact of the pandemic on our domestic interiors?
- What legacy in terms of behaviours and spatial features?
- What is the role of designers?

3.Refuge (two slides)
Back to my holiday. I was staying in a solid mountain stone house in the forest, rich with trees and wild animals, although it was a touristic compound. In the evening, when I could hear the wild life starting I felt that house as a shelter, I started thinking about the primary meanings of home. Same feelings I felt in Milan during the pandemic.
The pandemic has led us to re-assign to the domestic space one of its prime values, the significance of ‘refuge’ as a place in which borders, new types of boundaries, are safeguarded to protect us.

'The house is our corner of the world, our first universe, it is truly a cosmos,...'
The house provides shelter to reverie*, protects the dreamer, the house is a powerful element of integration of man's thoughts, memories and dreams, it supports the human being … The meaning refers to a primary cradle, a sense of motherhood
[Bachelard, G. (1957) La poétique de l’espace]

This anthropological dimension, linked to a factor of intimacy, represents one of the categories of analysis of domestic interiors among which we can find the functional/performative, aesthetic, cultural (referring to a set of local factors, historical facts, ...) self-status representative , sociological, etc. that contribute in creating paradigms of domestic spaces, …

The concept of Bunker, a fortified apartment self-sufficient in terms of energy, food, air, … is an isolationist approach becoming popular to face the pandemic. It is a key word as a ‘war time’ response in our language.

notes
[topos of subjective interiority, privacy and comfort, consolidation os specific gendered and familiar roles Charles Rice 2006 the emergence of the interior: architecture, modernity, domesticity]

4.Overcoming home boundaries
At the same time, this condition of staying-at-home requires overcoming these boundaries by bringing the public space – smart working, home schoolings, home fitness, etc. -, with its features and functions, into the private and domestic one, albeit controlled in time and place.

[‘educational and commercial sectors stopped or slowed down their on-site activities and instructed their employees to work from home (where possible) and set up home offices. The closure of schools has direct consequences on families with children; for many, working from home becomes a challenge alongside home-schooling.’]

4.b_ overcoming home boundaries
From a conceptual point of view, this crossing of domestic boundaries is a topic that has already been widely addressed with the spread of every technological revolution; of industrial culture in the domestic environment (futurism) and in the seventies in Italy by the Radical movement, in which we read man as part of a global without external space in which changes occur according to a biological logic.
These processes tend to re-shape domestic interiors integrally, in their essence.

4.c_ overcoming home boundaries (more slides)
In recent past two decades the spread of ICT started this process of mutual contamination between domestic interiors and office spaces in various modalities: starting from the more structural

ones, envisaged in the architectural project, inserting equipped blocks, providing working stations, designing hybrid or retractable elements, inaugurating an idea of a transformable home.
The main consequence of Coronavirus, on the contrary, should be an acceleration of some changes which are already underway

5.Camp
During the pandemic, in addition to the meaning of 'refuge' - and its sort of 'passive' sense –, domestic interiors have undergone a massive resilient process of adapting to the lock-down conditions through a spatial organization approach typical of a 'camp'.

Like either in a battle or in a wild forest, a camp adopts tactics of using and per-using space creating activity-based settings temporarily equipped for specific functions.

6.Settings Stay/station (more slides)
From a certain point of view, this stay-at-home order forced us to stay at home instead of 'stationing' there before starting the daily activity (as if it were the meaningful part of our life) that takes place mainly outside. Spending much more time than before in domestic spaces has sometimes allowed us to rediscover the qualities and reasons, the sense of certain design paradigms within the daily flow, and to assess new opportunities and urgencies/needs by initiating this resilient process of adaptation.

This impact has generated new needs often characterized as new internal settings
- control and equipment of the access area (not widespread in all cultures) genkan and hygiene equipment
- equipping the areas virtually accessible to the public
- equipping areas of contact with the external space, windows, terraces, …
- activity helping self-sufficiency (urban farming, energy safe practises, storing supplies ..)
- home leisure, gym training, playing, cooking, tv watching, reading, ...

Are they going to contribute to the new paradigms of interiors?
New needs?

7.Global pics
Technologies, connective modalities, and new types of settings, generate a functional layer made up of highly equipped and publicly visible spots that we can re-trace, similar to each other, in our domestic scenarios at an international level.
This new 'active' layer brings new globally shared insights, into the existing domestic space, and into its cultural and local features.

8. Strategies of intervention
Scholars analyzed the existing matter to form a series of strategies for reuse: methods of design that were then realized with a set of tactics. Brooker and Stone talk about insertion, intervention, installation. (Brooker & Stone

An approach based on settings tends to create an internal landscape,
the results could be generated by strategies of juxtaposition, integration, overlapping
an integrated environment or a fragmented space?
a set of spots e re-shaping of the whole interior and spatial perception?

Studying our new interior environments we can recognize multiple strategies providing both activity based settings and more flexible habitat, created by the sedimentation of activities.

9.Handbook
Going back to the starting point of this presentation.

Handbook: a book that contains instructions or advices, important and useful information about a subject,
a manual for guidance.

We can assume that it is a tool, an instruction manual enabling users (non expert or learners) to design their own interior space.

Catalog: comprehensive list of items or collections.

We can expect to find pieces of furniture or already assembled settings, …
They represent answers to already manifested needs.

10.Habitats and inhabitants
Inhabitants are playing both the role of designers and the one of users at the same time, building and testing the new intervention interacting with the existing environments.

It might be interesting to recover the term habitat conceiving domestic interior as an organic and complex system, consisting of different spaces and margins, considering that it acquires a specific meaning in relation to certain gestures, organization of private and public spaces, and the different perspectives that participate in its use, imaginary, and culture.

Habitat is the resources and conditions present in an area that produce occupancy – including survival and reproduction – by a given organism. Habitat is organism-specific; it relates the presence of a species, population, or individual (animal or plant) to an area's physical and biological characteristics. [...] it is the sum of the specific resources that are needed by organisms."
(Hall, Krausman & Morrison, 1997)

11.New paradigms?
The next phase of acquisition and sedimentation of these modifications will probably be more challenging.

How it will unfold, what objectives will the analysis of this phenomenology of spaces, of this magma that boils, with the persistence of the emergency and at the end of it will have: - track down new paradigms (and return to the catalog) - inaugurate new design approaches and new roles of the designer with a systemic perspective, taking into consideration the needs emerged in this stressful situation (primary and new), the new awareness of sustainability and the new positioning of the human being, the subjective role of the user in the creation of his habitat What will be the imagery that generates these spaces

The practice of the creation of the interior can be considered to be a process that creates a space that is central to all human existence.
The interior can be understood as the result of a complex weave of values, issues, and spatial formations; both physical and mental structure.
(Brooker & Weinthal, 2013)

[Brooker G. & Weinthal L. (2013) The handbook of interior architecture and design, London & New York: Bloomsbury, pag 2,)

演讲题目

TOPIC OF SPEECH

为可持续的未来而设计

DESIGN FOR A SUSTAINABLE FUTURE

刘新
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首先，刘新谈到，设计基本有两个重要的核心任务。一是指向当下。在当下解决问题，建构意义；问题可能是特别具体的、功能性的，意义可能是我们心理的情感的精神上的需求。二是去创造未来的愿景。我们在思考在未来一个时间段内，可能遇到的问题，包括人们的情感和精神的需求、可能出现的冲突、发展和社会的期待。以未来设计为主题做统计有上千篇研究论文。其中“可持续性”是从设计领域关注未来的时候热度最高的。

联合国 2030 可持续目标给我们提了一个方向愿景，对于未来的思考会决定今天的价值取向，会对今天的设计产生重要的激励或引导，甚至诱惑着我们往这个方向发展。这个大目标对我们来说就是一个方向，在这个前提下，各个国家有了重要的共识。对中国来说，这两件情也极为重要，一个是中国对 17 个 SBG 目标非常支持，而且是重要的参与者。其次是生态文明建设已经成为中国的基本国策，融入到经济、政治、文化和社会的各个方面。

在这个大愿景下，刘新在教学、研究、实践等领域研究可持续理念。首先，在教学板块，清华大学本科生开设可持续设计、可持续设计导论，研究生课程开设可持续设计理论与实践课程，博士生、研究生甚至本科的同学都参与到不同的课题研究里。刘新以今年在疫情期间线上课程和在北京的 751 工业园区的 foodloop 观光式农业项目，展示了未来愿景式的思考。

刘新分享了系统生态设计案例——可持续生活实验室，发起反思。刘新提出，设计不仅要思考、画图，如果能把实践尝试建造出来，可能更有说服力，更有影响力。刘新还分享了两个关于未来的生物材料材料领域的例子，说明在我们应当提出阶段性的设计导则，规划未来数十年可能的发展趋势。而厕所设计的例子设计也包含了关于人性化、生态系统、

产品设计、视觉传达和交互方面等等各个领域。从而强调了未来的核心因素——可持续设计。

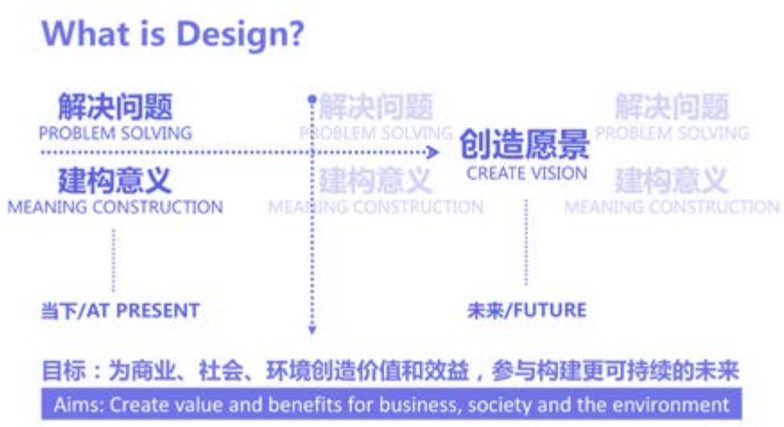
First of all, Liu Xin said that design basically has two important core tasks. One is to point to the present. Solve problems and construct meaning at present; The problem may be particularly specific and functional, and the significance may be our psychological, emotional and spiritual needs. The second is to create a vision for the future. We are thinking about the possible problems in the future, including people's emotional and spiritual needs, possible conflicts, development and social expectations. There are thousands of research papers on the theme of future design. Among them, "sustainability" is the most popular when we focus on the future from the design field.

The UN 2030 sustainable development goals provide us with a vision of direction. Thinking about the future will determine today's value orientation, generate important incentives or guidance for today's design, and even tempt us to develop in this direction. This big goal is a direction for us. On this premise, all countries have an important consensus. For China, these two situations are also extremely important. One is that China supports the 17 SBG goals and is an important participant. Secondly, the construction of ecological civilization has become China's basic national policy and integrated into all aspects of economy, politics, culture and society.

Under this vision, Liu Xin studies the concept of sustainability in the fields of teaching, research and practice. First of all, in the teaching section, Tsinghua University undergraduate courses offer sustainable design and introduction to sustainable design, graduate courses offer sustainable design theory and practice courses, and doctoral students, graduate students and even undergraduate students participate in different subject research. Liu Xin demonstrated his visionary thinking of the future with online courses during the epidemic this year and the foodloop sightseeing agriculture project in Beijing's 751 Industrial Park.

Liu Xin shared the case of system ecological design - sustainable life laboratory and initiated reflection.

Liu Xin proposed that design should not only think and draw pictures, but also be more persuasive and influential if practical attempts can be built. Liu Xin also shared two examples about the field of biomaterials in the future, indicating that we should put forward phased design guidelines and plan possible development trends in the next few decades. The example design of toilet design also includes various fields such as humanization, ecosystem, product design, visual communication and interaction. Thus, it emphasizes the core factor of the future - sustainable design.



演讲题目 TOPIC OF SPEECH

治疗性生存环境

THERAPEUTIC HABITAT

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ALESSANDRO BIAMONTI

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亚历山德罗·比亚蒙蒂的研究聚焦在从物理方法向人类世转型，更多的考虑社会文化变化如何影响我们的工作、生活。生存环境这个概念非常重要，我们必须要关注它的变化。

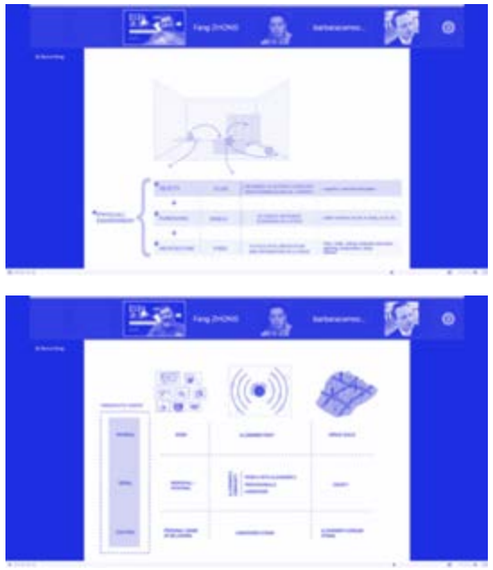
亚历山德罗·比亚蒙蒂以阿尔兹海默症的研究为例，指出阿尔兹海默症一直被称为是现代病，其症状和现代的一些特性有很强的相关性，亚历山德罗·比亚蒙蒂希望能够通过一些艺术家的作品来解读这种关系。

对已经到达失智状态的病人来说，病理学的方法可能没有太大的作用，它无法阻止疾病的进程。这时候我们可以采取非病理学的治疗方法来提高患者的生活质量，设计者可以让他们每天生活过得更舒心一些，比如利用艺术、宠物、音乐等等维持患者的认知功能，改善生活水平，让患者有能力去表达自己，从而在某些方面活跃起来。环境之所以能发挥作用，是因为它可以达到药物不能达到的效果。比如治疗型的生活环境，它本身具有治疗性，能够给予生活在这个空间的人带来治疗的作用。

在环境中的这些实物一共有三个层次，建筑是永久性的，包含一些具有移动性的东西，比如它的装饰、布局，它们很容易来调整、改变，人们可以个性化的、根据他们的需求进行调整。亚历山德罗·比亚蒙蒂把焦点汇聚在屋主身上，提供一个给他们归属感的空间，再把它抬高到周围的人群，包括护理的人以及阿尔兹海默症社区，他们更像是一个社区。

另外，解决这个问题的关键点就是在阿尔兹海默症患者周围的护理人，我们要去抗击对于阿尔兹海默症的污名化，让整个社会都参与到这个过程中去。阿尔兹海默症是我们生活中很自然就会发生的事情，是一个生活的方式而已，他们的尊严一点也不应该少。

亚历山德罗·比亚蒙蒂建立了 GRACE 的模式，它是生成性相关老年专业社区，GRACE 也有优雅的意思，年龄虽然使我们失去了一些生命的功能，但是仍然不断寻求着优雅的成分。



I'm AB, professor at Politecnico di Milano and let me do a short introduction of my research team LABIRINT in which since 2005 we are working on a new development of a spatial and interior design, especially bringing the design of spaces from a technical approach to an anthropological scenarios, and that's an important goal for our discipline.

So we propose a vision of space, not based on physical issues or at least not just based on that, but in which spaces the experience of spaces would be absolutely passing through perception and emotion.

That's why we refer more to the term of HABITAT that is intended to come from biology, is not just related to physical issues, but is a set of condition. The main difference between space and habitat is that physical space is related to an objective point of view, habitat is related to a subjective point of view.

Some years ago we start work with the topic of Alzheimer. as you probably know Alzheimer is represent the most part of the dementia, is the fifth reason of death worldwide for over 65, due to the increasing of elderly population. The Alzheimer disease is growing very rapidly worldwide and affects elderly population, after 65.
Talking with the medical and science discipline we propose a reflection about them and was relayed to the well is more related to our discipline. Alzheimer is usually considering a syndrome of modernity because it contains some man symptoms and some characteristics very close to Modernity: the loss of identity, and the damage in the emotional apparatus.

How do you could see, we tried to find in the work of artists a representation of that: here we have METROPOLIS by FRITZ LANG, a frame from a KAURISMAKI's movie, a paint by LUCIEN FROID in which we can perceive the lack of something in emotion and an uncomfortable situation of existence. But it's especially on this work of

MAGRITTE that we could perceive a frustration in communication, which will be extremely more complex to express by words. Sorry are used to used to say that artist they have a different sensitivity. For instance BACON, who doesn't want to do a realistic portrait but a portrait of the mood of himself. As well as in the contemporary theatre you have some man scene in which are something extremely crazy appear that but that's the goal of the artist that they go deeper on a very limited portion of reality, that maybe we cannot see, and they just reproduce in a normal scale to stress us, normal people, to see what we could not see before.

So extra ordinary people with an extra ordinary sensitivity: that's what we think about artist, that's what we propose to think about people with Alzheimer.
And when we face with an extra ordinary sensitivity, the question is not to cure it, but are taking care about it.

In the last year and emerging trend in the therapy for Alzheimer are non-pharmacological therapies that basically works to maintain cognitive function improve the quality of life and ito reduce behavioural disorder, just using the remaining cognitive capacity and having some reference to the personal history and background of any single individual person.

Within the North pharmacological therapies framework, the environment play an important role, because it could became therapeutic itself.
That's why we are talking about therapeutic habitat. A cognitive setting, done by tangible and intangible elements, able to enhance the quality of everyday life of a person with Alzheimer.
The different levels have different characteristics in terms of mobility, timing, materials and so on The physical environment became a dynamic complex system.

At the very beginning we start the design in a room that was surrounding the person with Alzheimer, with the goal of enhancing the sense of belonging. Then we move to the community made by professionals and caregivers that surrounds the person with Alzheimer. The last phase of the research is at the scale of the Urban environment. The target is the entire society and the main goal is to reduce the stigma relate to Alzheimer's Disease. We develop a method, and approach, that we called GRACE, as Generated and Relational Ageing Community of Excellence.

Excellence is a shared goal: Given that personal well-being is mainly aleatory, within a strongly anthropological approach, we consider excellence as the goal of a community.

The theme is that of the centrality of the person. In recent decades, the approach that has emphasized the dignity of the person with Alzheimer's has been very important. It is now important to point out how this centrality, which is indispensable, takes place within a community.

This is important advice, especially for designers. To better understand the scenario, it is always important to take a step back and broaden your point of view.

Regarding planning, management or even daily life issues, it is clear to everyone how rules and regulations are perhaps able to maintain a basic level of safety, but certainly do not guarantee the quality of life.

A good level of quality of life is obtained, for example, by overcoming the rigid grids that establish timetables and functions. The daily rituals related to rest, food, certain leisure activities, take on greater pleasure, are much more effective, do not create problems when they are done at the time and in the way in which the subject feels necessary.

In the logistics and dynamics of everyday life, good design can be a useful support to help understand where you are, in time and space.

Although the studies on color and perception have a very important history and tradition in the culture of design, as in artistic culture, it is essential to remember that colors are individual perceptions, not rules.

It should not surprise us that the space, the context, takes on almost therapeutic characteristics. The space where we move is important, because it is where our gaze rests. Inevitably.

This is the image of the first work done within the project spaces for non-pharmacological therapies for Alzheimer's. More than 15 years ago, a space where patients and therapists interacted through sounds, colors and movements.

“The room where things happen”. This is the name (I say this with emotion and pride) the patients gave to that place. This is to demonstrate how people, who had lost cognitive abilities and memory, found, in that place and in those activities, an energy that attracted them, intrigued them, entertained them, providing them with the pleasure of participating.

3/

未来创想实验室

IDEAS LAB

Ideas lab is an exchange workshop for young scholars. It will consist of four discussion guests and moderators. After the guests share their views, they will carry out topic discussion, viewpoint analysis, thinking collision or action planning around the theme, and carry out visual presentation.

Ideas Lab 未来创想实验室是面向青年学者的交流工作坊，将由4 位讨论嘉宾和主持人组成会谈小组，在嘉宾分享观点后，围绕主题开展话题讨论、观点分析、思维碰撞或行动策划，并进行可视化呈现。

Ideas Lab 未来创想实验室 1：思辨未来

IDEAS LAB FUTURE VISION LAB 1: THINK ABOUT THE FUTURE

通过思辨的方式，挑战未来假设与先入之见，
反思设计在未来实现中扮演的角色。

Speculation about the future challenges future assumptions and preconceptions through speculation, The role of reflective design in future implementation

实验室主持
LABORATORY CHAIR

夏晴
XIA QING

清华大学 2018 级 信息艺术设计 博士生
在读博士，现就读于清华大学美术学院。2007 年进入清华大学就读本科，2014 年硕士毕业于清华大学信息艺术设计交叉学科，2014 年至 2018 年于苏州大学传媒学院从事交互设计教学研究。现研究方向为未来思维的方法和工具。

2018 doctoral student in information art design of Tsinghua University
He is now studying at the Academy of fine arts of Tsinghua University. He entered Tsinghua University as an undergraduate in 2007, graduated from the interdisciplinary of information art and design of Tsinghua University with a master's degree in 2014, and engaged in interactive design teaching research in the school of media of Suzhou University from 2014 to 2018. The current research direction is the methods and tools of future thinking.

嘉宾分享 1
GUEST SHARING 1

未来未来——思辨设计、设计虚构的幻象与混种现实

THE FUTURE— SPECULATIVE DESIGN, THE ILLUSION OF DESIGN FICTION AND MIXED REALITY

曾乙文
ZENG YIWEN

央美产品设计本科背景，毕业后在英国皇家艺术学院就读 Dunne & Raby 带领的 Design interactions 后，以产品设计与交互作为夸领域的媒介，叙述社会议题与科技、文化之间的潜在关系。现为中国美术学院博士生，继续对思辨设计展开研究，并由文化角度切入，塑形东方世界观体系下 speculative design 与 design fiction。

Yangmei has a bachelor's background in product design. After graduation, he studied design interactions led by Dunne & Raby at the Royal Academy of Arts. He described the potential relationship between social issues, science, technology and culture with product design and interaction as the media in the field of boasting. He is now a doctoral student of the Chinese Academy of fine arts. He continues to study speculative design, and from a cultural point of view, shaping the special design and design fit under the Oriental world outlook system.

嘉宾分享 2

GUEST SHARING 2

思辨设计驱动
未来社会创新

SPECULATIVE DESIGN DRIVES FUTURE SOCIAL INNOVATION

王晓岚
WANG XIAOLAN

广东工业大学艺术与设计学院讲师，加拿大西蒙弗雷泽大学交互艺术与技术博士。研究主要聚焦交互设计在社会创新及可持续发展过程中所面临的机遇与挑战，探索解读设计的新视角。已主持科研项目 2 项，其中广州市哲学社会科学发展“十三五”规划项目 1 项。在国际会议期刊及书籍著作中发表数篇学术论文，收录于 EI、ACM、ISTP 等。

Lecturer, School of art and design, Guangdong University of technology, doctor of interactive art and technology, Simon Fraser University, Canada. The research mainly focuses on the opportunities and challenges faced by interactive design in the process of social innovation and sustainable development, and explores a new perspective for interpreting design. He has presided over 2 scientific research projects, including 1 project in the 13th five year plan for the development of philosophy and Social Sciences in Guangzhou. He has published several academic papers in International Conference journals, books and works, which are included in EI, ACM, ISTP, etc.

嘉宾分享 3

GUEST SHARING 3

土味社会梦

SOCIAL DREAM OF LOCAL FLAVOR

沈宾
SHEN BIN

沈宾是一位同时拥有设计及媒体艺术实践背景的创作者及策展人。活跃于伦敦，东京及北京之间，目前生活在杭州。英国皇家艺术学院 Design Interactions 硕士。联合国教科文组织创意城市跨学科中国创作者（2020）。她关注科技时代的想象力与可能性，特别是科技人文如何在亚洲语境中思辨以及激发在地创造力与推动社会人的再思考。研究及写作系列“土味社会梦”（2019）收录于《20 某某年的改革者！》（2020 年东京出版）。

Shen Bin is a creator and curator with both design and media art practice background. Active in London, Tokyo and Beijing, currently living in Hangzhou. Master of design interactions, Royal Academy of Arts. UNESCO creative city interdisciplinary Chinese creator (2020). She pays attention to the imagination and possibility of the era of science and technology, especially how science and technology humanities think in the Asian context, stimulate local creativity and promote social people's rethinking. The research and Writing Series "the social taste of dreams" (2019) is included in the 20 reformer of certain years. Published in Tokyo in 2020).

嘉宾分享 4 GUEST SHARING 4

从界面到“田 + 介”面：一种思辨式探讨

FROM INTERFACE TO "TIAN + JIE": A SPECULATIVE DISCUSSION

施晗薇
SHI HANWEI

广东工业大学设计学博士后在读。本科毕业于北京师范大学，并于美国纽约州立大学布法罗分校获得媒介研究博士学位。

她的研究领域包括媒介技术哲学和新媒体艺术，曾在美国布法罗艺术中心举办了个人装置艺术展；其他新媒体作品曾多次在美国和加拿大等北美地区展出。另有英文专著《Shi-rou, or the Seeing Flesh》即将出版。

Postdoctoral degree in design, Guangdong University of technology. He graduated from Beijing Normal University and received a doctorate in media research from the State University of New York at Buffalo.

Her research fields include media technology philosophy and new media art. She once held a personal installation art exhibition at the buffalo Art Center in the United States; Other new media works have been exhibited in North America such as the United States and Canada for many times. Another English monograph, Shi Rou, or the seeing flight, will be published soon.

Ideas Lab 未来创想实验室 2：未来教育

IDEAS LAB FUTURE VISION LAB 2: FUTURE EDUCATION

挑战未来教育的弹性边界，

基于未来思维探索教育的新场景与新服务，洞察未来

Challenging the flexible boundaries of future education, Explore new scenes and services of education based on future thinking, and gain insight into the future

实验室主持

LABORATORY CHAIR

李寅
LI YIN

清华大学 2018 级 信息艺术设计 博士生

在读博士，现就读于清华大学美术学院。2007 年进入清华大学就读本科，2014 年硕士毕业于清华大学信息艺术设计交叉学科，2014 年至 2018 年于苏州大学传媒学院从事交互设计教学研究。现研究方向为未来思维的方法和工具。

2019 doctoral student in information art design, Tsinghua University

2019 Guanghua Longteng award · top ten outstanding young people in China's service design industry

Founder of green orange maker Education

嘉宾分享 1

GUEST SHARING 1

从跨领域创新设计谈起

TALKING ABOUT CROSS DOMAIN INNOVATIVE DESIGN

程书馨
CHENG SHUXIN

中央美术学院设计学院教师、创新设计方向教研室主任，创新设计师、工程师。她致力于研究基于中国语境的跨领域创新设计教学体系，建立创新趋势研究平台探索未来生活方式、战略洞察和创新解决方案。她荣誉毕业于英国帝国理工学院与英国皇家艺术学院联合培养的创新设计工程专业，荣获理学、文学双硕士学位；本科毕业于清华大学。

Teacher of Design School of Central Academy of fine arts, director of teaching and Research Office of innovative design direction, innovative designer and engineer. She is committed to studying the cross domain innovative design teaching system based on the Chinese context, establishing an innovation trend research platform, and exploring future lifestyles, strategic insights and innovative solutions. She graduated from Imperial College of technology and Royal College of art with honors, majoring in innovative design engineering, and won double master's degrees in science and literature; Graduated from Tsinghua University.

嘉宾分享 2

GUEST SHARING 2

跨越无界：面向未来的创新教育空间的设计策略

CROSSING THE BOUNDLESS: THE DESIGN STRATEGY OF INNOVATIVE EDUCATION SPACE FOR THE FUTURE

陈志刚
CHEN ZHIGANG

上海美术学院 数码艺术系主管，硕士生导师，清华大学艺术学博士；上海吴淞国际艺术城发展研究院 项目总监

从事信息技术与艺术、数字文化产业、数字媒体交互方面的研究。在 CHI,CHINESE CHI,HCII,IASDR 和 ICID 等学术会议上发表论文 20 余篇并做学术报告。主持上海大学上海吴淞国际艺术城发展研究院美术学院吴淞院区前期规划、设计及研究工作；主持上海市教委紧缺人才工作室《城市公共空间交互体验与 VR 人才培养工作室》项目。曾获教育部第八届高等院校科学研究优秀成果奖（人文社科）二等奖；2019 年 Red Dot 红点奖等。

Director of Digital Art Department of Shanghai Academy of fine arts, master supervisor, doctor of art of Tsinghua University; Project director of Shanghai Wusong International Art City Development Research Institute

Engaged in research on the interaction between information technology and art, digital culture industry and digital media. He has published more than 20 papers and made academic reports at academic conferences such as Chi, Chinese, Chi, HCII, iasdr and ICID. Presided over the preliminary planning, design and research of Wusong Academy of fine arts, Shanghai Wusong International Art City Development Research Institute, Shanghai University; Presided over the project of interactive experience in urban public space and VR talent training studio of Shanghai Education Commission. He once won the second prize of the eighth excellent achievement award for scientific research in Colleges and universities (HUMANITIES AND SOCIAL SCIENCES) of the Ministry of education; 2019 red dot award, etc.

嘉宾分享 3 GUEST SHARING 3

为可选择的未来设计 ——央美设计学院 新学科实验

DESIGN FOR AN OPTIONAL FUTURE — NEW DISCIPLINE EXPERIMENT OF YANGMEI DESIGN INSTITUTE

景斯阳 JING SIYANG

中央美术学院设计学院生态危机设计教研室主任，GARLIC 设计媒体创始人、全域设计师、跨学科策划人。她关注气候变化、黑天鹅事件频发的语境下，如何用跨领域的设计创新作为媒介应对未来不确定性，并对危机进行减振。她的研究领域是潜行科技下的危机设计、智慧城市、生态与生物材料设计。此外，她还关注并研究未来设计教育的新常态以及未来设计人才培养新模式。景斯阳毕业于哈佛大学、宾夕法尼亚大学，并曾于麻省理工学院媒体实验室、德国慕尼黑工业大学求学。景斯阳任《中国园林》杂志特约编辑、LA 先锋奖评委，采访发布国际设计大师专访 50 余篇，策划、组织国际设计类论坛和峰会 20 余次。

Director of the teaching and Research Office of ecological crisis design, School of design, Central Academy of fine arts, founder of Gallic design media, global designer and interdisciplinary planner. She focuses on how to use cross domain design innovation as a medium to deal with future uncertainty and mitigate crises in the context of climate change and frequent Black Swan events. Her research fields are crisis design under stealth technology, smart city, ecology and biomaterial design. In addition, she also pays attention to and studies the new normal of future design education and the new model of future design talent training. Jing Siyang graduated from Harvard University and the University of Pennsylvania, and studied in the Media Laboratory of MIT and the Technical University of Munich, Germany. Jing Siyang served as special editor of Chinese garden magazine and judge of La Pioneer Award, interviewed and published more than 50 exclusive interviews with international design masters, and planned and organized more than 20 international design forums and summits.

嘉宾分享 4 GUEST SHARING 4

AI 创造力： 与 AI 共生共创

AI CREATIVITY: SYMBIOSIS AND CO CREATION WITH AI

吴卓浩 WU ZHUOHAO

Mr. HOW AI 创造力学院创始人。历任创新工场人工智能工程院副总裁，Google、Airbnb 中国设计负责人。

他聚焦设计与科技的融合，专注基于用户体验与人工智能的产品与服务创新。辅导过数百个创业企业与成熟企业的产品与服务创新，被全球数以十亿记的用户使用。他在清华大学、北京大学、中央美术学院、ArtCenter 设计学院等 40 余所国内外大学授课，还是中国传媒大学、北京邮电大学、北京师范大学等 7 所大学的特聘校外导师，清华大学文化创意研究院特聘研究员。

Mr. how, founder of AI creativity college. He has successively served as vice president of Artificial Intelligence Engineering Institute of Innovation workshop and design director of Google and airbnb China.

He focuses on the integration of design and technology, and focuses on product and service innovation based on user experience and artificial intelligence. He has assisted hundreds of start-ups and mature enterprises in product and service innovation, which has been used by billions of users around the world. He teaches in more than 40 universities at home and abroad, including Tsinghua University, Peking University, Central Academy of fine arts and ARTCENTER School of design. He is also a distinguished off campus tutor of 7 universities, including Communication University of China, Beijing University of Posts and telecommunications and Beijing Normal University, and a distinguished researcher of the Institute of culture and creativity of Tsinghua University.

Ideas Lab 未来创想实验室 3：未来传达

IDEAS LAB FUTURE VISION LAB 1: FUTURE COMMUNICATION

融合多元设计背景，探索设计在近期以及长期未来的表现形式及其传达途径。

Integrate multiple design backgrounds to explore the expression forms and communication ways of design in the near future and long-term future.

实验室主持

LABORATORY CHAIR

朱琳

ZHU LIN

清华大学 2020 级信息艺术设计博士生

在读博士，现就读于清华大学美术学院。硕士毕业于米兰理工大学集成产品专业，本科毕业于大连理工大学工业设计系。

2020 doctoral student in information art design of Tsinghua University

He is now studying at the Academy of fine arts of Tsinghua University. Master's degree in integrated products from Milan University of technology and bachelor's degree in industrial design from Dalian University of technology.

嘉宾分享 1

GUEST SHARING 1

国内造口患者区域协同护理模式的设计

DESIGN OF REGIONAL COLLABORATIVE NURSING MODEL FOR PATIENTS WITH STOMA IN CHINA

陈思蓓

CHEN SIBEI

以服务设计为主要工作内容的自由职业设计师，关注设计在国内医疗、教育等公共服务领域的践行。曾任职于阿里巴巴，担任体验设计师。硕士毕业于米兰理工大学产品服务系统设计系。本科毕业于大连理工大学工业设计系。

Freelance designers with service design as their main work focus on the practice of design in domestic public service fields such as medical treatment and education. Once worked in Alibaba as an experience designer. Master graduated from the Department of product service system design of Milan Polytechnic University. He graduated from the Department of industrial design of Dalian University of technology.

嘉宾分享 2

GUEST SHARING 2

苏州虎丘婚纱城：现代性，物质文化与新娘时尚

DONG FANGZHOU'S SUZHOU HUQIU WEDDING DRESS CITY: MODERNITY, MATERIAL CULTURE AND BRIDE FASHION

董方舟
DONG FANGZHOU

西交利物浦大学工业设计博士在读，研究课题为思辨设计与文化，将中国婚礼文化作为案例研究，关注以文化为中心的设计理论与方法。在开始博士研究之前，她硕士毕业于英国爱丁堡大学 design informatics，本科毕业于大连理工大学工业设计。

He is a doctoral student in industrial design of Xijiao Liverpool University. His research topic is speculative design and culture. He takes Chinese wedding culture as a case study and pays attention to the culture centered design theory and method. Before starting her doctoral research, she graduated from design informatics of the University of Edinburgh and industrial design of Dalian University of technology.

嘉宾分享 3

GUEST SHARING 3

HUMANS ARE TOO SLOW

黄文统
HUANG WENTONG

毕业于米兰理工大学硕士
作品于 2017 年获得首个 RedDot best of best
致力于将分形设计思想应用于设计实践之中。
公司团队致力于将参数化设计、生成设计、算法设计，计算形态发现、增强现实设计以及虚拟现实等技术和方法集成到产品和空间设计中，整合设计流程并开发对应的新工具。

Graduated from Polytechnic University of Milan with a master's degree
The work won the first reddot best of best in 2017
It is committed to applying fractal design idea to design practice.
The company's team is committed to integrating technologies and methods such as parametric design, generation design, algorithm design, computational form discovery, augmented reality design and virtual reality into product and space design, integrating design processes and developing corresponding new tools.

嘉宾分享 4 GUEST SHARING 4

设计未来：工业设计发展趋势及其对设计教育的影响

THE FUTURE OF DESIGN: THE DEVELOPMENT TREND OF INDUSTRIAL DESIGN AND ITS IMPACT ON DESIGN EDUCATION

宋尧
SONG YAO

本科和研究生分别毕业于中央美术学院和米兰理工大学，现任教于中央美术学院设计学院。

从北京到米兰，先后经历了从陶瓷设计到家居产品设计，再到工业设计的专业过度，目前主要研究方向为工业设计。始终坚持学术与实战相结合，有多个作品获奖并参展，同时参与过众多工业设计设计项目如未磁科技大型 CT 机，华科精准六轴机器人等等。

Undergraduate and graduate students graduated from the Central Academy of fine arts and Milan Polytechnic University respectively, and now teach in the design school of the Central Academy of fine arts.

From Beijing to Milan, we have experienced the professional transition from ceramic design to household product design, and then to industrial design. At present, the main research direction is industrial design. We have always adhered to the combination of academic and practical work. Many works have won awards and participated in exhibitions. At the same time, we have participated in many industrial design projects, such as non magnetic technology large CT machine, Huake precision six axis robot and so on.

Ideas Lab 未来创想实验室 4：未来城市

IDEAS LAB FUTURE VISION LAB 4: FUTURE CITY

以未来思维展开对城市当下技术与趋势研讨，邀请科幻作家、设计师与建筑师以思辨视角呈现未来世界的多元可能。

Discuss the current technology and trend of the city with future thinking, and invite science fiction writers, designers and architects to present the diversified possibilities of the future world from a speculative perspective.

实验室主持
LABORATORY CHAIR

陈娱
CHEN YU

清华大学 2021 级信息艺术设计博士生

策展人、艺术家。硕士毕业于中央美术学院艺术与科技方向。 2018 年受邀走访艾尔弗雷德大学、美国罗德岛艺术设计学院与纽约 Cooper Union 访学交流。曾担任第二届北京媒体艺术双年展媒体总负责及执行策展人。2019 深港城市＼建筑双城双年展科幻板块策展人并获此届深双组委会大奖。

2021 doctoral student in information art design, Tsinghua University

Curator, artist. He graduated from the Central Academy of Fine Arts in the direction of art and science and technology. In 2018, he was invited to visit Alfred University, Rhode Island School of art and design and Cooper Union in New York. He once served as the general director and executive curator of the second Beijing Media Art Biennale. Curator of the science fiction section of the 2019 Shenzhen Hong Kong City Architecture twin cities Biennale and won the award of the Organizing Committee of this session of Shenzhen double cities.

嘉宾分享 1

GUEST SHARING 1

从田园牧歌到蜂群城市

FROM PASTORAL TO BEE COLONY CITY

王宽
WANG KUAN

建筑师、科幻作者、虚拟空间学者。北京宽建筑工作室主持人，海南万般世界文化科技有限公司创始人。中国科幻研究中心特聘专家。海经院雅和人居虚拟空间设计专业（VSD）学科带头人。曾获两项德国红点设计奖。代表作为青岛凤凰之声大剧院、小说《沙漏》（发表于《九座城市，万种未来》）。2019 深港城市／建筑双城双年展执行策展人。以科幻为思想方法，同时致力于经典的城市建筑设计，和ＶＲ虚拟空间设计及其ＩＰ开发（沉浸式科幻影视、沉浸式科幻游戏等）。

Architect, science fiction author, virtual space scholar. Host of Beijing wide architecture studio, founder of Hainan Wanban world culture and Technology Co., Ltd. Distinguished expert of China Science Fiction Research Center. Discipline leader of Yahe residential virtual space design specialty (VSD) of Haijing Institute. He has won two German red dot design awards. As the representative of Qingdao Phoenix sound theatre and the novel Hourglass (published in nine cities, ten thousand kinds of future). Executive curator of 2019 Shenzhen Hong Kong City Architecture twin cities Biennale. Taking science fiction as the thinking method, we are also committed to classic urban architectural design, vr virtual space design and IP development (immersive science fiction film and television, immersive science fiction games, etc.).

嘉宾分享 2

GUEST SHARING 2

有形与无形——数字媒介时代下的建筑生产

TANGIBLE AND INTANGIBLE — ARCHITECTURAL PRODUCTION IN THE ERA OF DIGITAL MEDIA

谢雨帆
XIE YUFAN

设计师，前央美参数化小组成员。本科毕业于中央美术学院建筑学院 A9 工作室，曾交换于英国威斯敏斯特大学。现南加州大学建筑硕士在读。本科作品“夹缝+”曾获央美毕业设计一等奖。合作作品“无名之城”参展于 2019 年深港双城双年展。他深受运算化设计以及数字艺术的影响，广泛吸纳其他领域的思维与架构，并实践于算法、设计、装置，在复杂形式与系统、以及数字建造上展开研究。目前致力于使用虚拟媒介，在动态建筑以及空间感知方面进行探讨。相关项目均发布于其自媒体 UVN。

Designer and former member of Yangmei parameterization team. He graduated from A9 studio of the school of architecture of the Central Academy of fine arts and was exchanged with the University of Westminster in the UK. He is now a master of architecture at the University of Southern California. His undergraduate work "crevice +" won the first prize of Yangmei's graduation design. His cooperative work "nameless city" participated in the 2019 Shenzhen Hong Kong biennial exhibition. He was deeply influenced by computational design and digital art, widely absorbed the thinking and architecture of other fields, practiced in algorithms, design and devices, and carried out research on complex forms and systems, and digital construction. At present, we are committed to using virtual media to explore dynamic architecture and space perception. Relevant items are published on their own media UVN

嘉宾分享 3

GUEST SHARING 3

系统化设计的想象文本

IMAGINATIVE TEXT OF SYSTEMATIC DESIGN

周融荣
ZHOU RONGRONG

作家和策划人，在海内外发表评论、小说、诗歌，获科幻“光年奖”。在中国美术馆等地独立策展，近年项目包括北京媒体双年展百度人工智能合作展区等，研究以数学为代表的科学与艺术和设计的历史关系和当代关系，并尝试将文学引入策展和创作。从事过投资／画廊／银行／电影和记录制片，历任民生（总部）私人银行等机构的艺术顾问。毕业于香港科技大学数学系（BS）、苏富比艺术学院（伦敦）东亚艺术史专业（MS）、中央美术学院博士在读。

Writer and planner, who published comments, novels and poems at home and abroad, won the science fiction "Lightyear Award". Independent Curators in China Art Museum and other places. Recent projects include Beijing media Biennale, baidu artificial intelligence cooperation exhibition area, etc., to study the historical and contemporary relationship between science, art and design represented by mathematics, and try to introduce literature into curation and creation. He has been engaged in investment / gallery / bank / film and recording production, and has successively served as an art consultant for Minsheng (Headquarters) private banks and other institutions. He graduated from the Department of Mathematics (BS) of Hong Kong University of science and technology, Sotheby's School of Art (London), majoring in East Asian Art History (MS), and is studying for a doctor at the Central Academy of fine arts.

嘉宾分享 4

GUEST SHARING 4

脱离“真实”的集会——数字虚拟空间中未来服饰艺术与设计的转变

A GATHERING AWAY FROM "REALITY" — THE TRANSFORMATION OF FUTURE CLOTHING ART AND DESIGN IN DIGITAL VIRTUAL SPACE

王涛
WANG TAO

毕业于中央美术学院首饰设计专业，获学士、硕士学位。曾参加法国 AMBLARD JEWELRY VOCATIONAL SCHOOL 访问学习项目。北京服装学院珠宝首饰设计专业助理教授，虚拟仿真体验设计实验室、人类工效学基础实验室科研团队组成人员。学术兼职中国工业设计协会设计标准分会秘书处。主要致力于数字科技媒介介入未来服饰设计与时尚文化创新领域。

Graduated from the jewelry design major of the Central Academy of fine arts with bachelor's and master's degrees. He once participated in the visit and study project of French Amblard jewerry vocal school. Assistant professor of jewelry design major of Beijing Institute of fashion, member of scientific research team of virtual simulation experience design laboratory and basic Ergonomics Laboratory. Part time academic secretary of design standards branch of China Industrial Design Association. It is mainly committed to the involvement of digital technology media in the field of fashion design and fashion culture innovation in the future.

4/

专家观点

EXPERT VIEWPOINT

付志勇
FU ZHIYONG

“设计未来”着眼于探索短期与长期未来对当下社会的影响，通过未来思维引领产业变革与社会进化，以共创性模式、思辨性方法、反思性实践，设计更合意的未来。

Design Futures focuses on exploring the impact of short-term and long-term future on the current society, and leads the industrial transformation and social evolution through futures thinking, so as to create a more preferable future with creative patterns, speculative methods and reflective practices.

皮特 • 司库佩里
PETER SCUPELLI

设计未来（Dexign Futures）明确关注的是将短期设计行动与可持续期货结合起来。“X”标志着一种设计的实验形式，将设计思维与未来思维相结合，使近期的设计行动与长期的愿景目标相一致——同时导航不确定性，加速创新，朝着理想的未来发展。

The term Dexign Futures explicitly focuses on aligning near-term design action with sustainable futures. The “X” signifies an experimental form of design combining design thinking with futures thinking to align near term design action with long-range vision goals – while navigating uncertainty and accelerating innovation toward desired futures.

安娜 • 芭芭拉
ANNA BARBARA

基于时间的设计不仅是一个被动变量和无法概念的方向，更将成为探索、设计和改造世界的工具，以实现长期的可持续发展目标。

Time-based design is not only a passive variable and inexorable direction, but will be a tool for exploration, design and transformation of the world to accomplish long term sustainability goals.

穆斯塔法 • 柯万
CHRISTOPHER KIRWAN

我们一直说不要去预测未来，但是首先要了解未来具有什么样的背景，其次我们需要真正地把它创造出来。我们希望人们能够真正地看到这个景象，而不是看一个边框。

We said try not to predict futures, but we need to firstly understand the future context, secondly we need to physically create it. We are trying to get people to look at the picture, not the frame.

芭芭拉 • 卡莫西尼
BARBARA CAMOCINI

新冠的流行使我们重新重视内部空间的主要价值之一，即“避难所”，作为一个维护边界的地方，一种新型边界，来保护我们。

The pandemic has led us to re-assign to the domestic space one of its prime values, the significance of 'refuge' as a place in which borders, new types of boundaries, are safeguarded to protect us.

刘新
LIU XIN

设计本身就具备“未来”属性。设计的使命：一是基于现实去解决问题或建构意义；二是面向未来创造愿景，即洞察、预见并描述未来的多种可能性。

The design itself has the "future" attribute. The mission of design: one is to solve problems or construct meaning based on reality; The second is to create a vision for the future, that is, to insight, foresight and describe the possibilities of futures.

蔡军
CAI JUN

我们今天其实是要塑造一种新的思维模式，或者新的思路，未来是可以通过设计赋能的。

What we're really trying to do today is create a new thinking mode, or a new thinking method, that the future can be empowered by design.

特里 • 欧文
TERRY IRWIN

过渡设计认为，复杂的问题必须在非常大的时空背景的框架下，包括过去 (问题如何演变 / 它的根源是什么)，现在 (它如何在不同程度上表现出来，它影响谁)，以及未来 (我们想要有意地向什么方向过渡)。

Transition Design argues that complex problems must be framed within radically large, spatio- temporal contexts that include the past (how the problem evolved/what its roots are), the present (how it manifests at different levels of scale and who it affects) and the future (what we want to intentionally transition toward).

布鲁斯 • 萨普 &
斯蒂芬妮 • 萨普
BRUCE THARP &
STEPHANIE THARP

运用商讨式设计的理论、框架和方法，来支持设计师在可视化和实例化造物方面的工作，提高人们想象未来可能性的能力。商讨式设计潜在的信念是，人们可以通过对可能发生的事情进行更丰富的想象、反思和修辞来更好地影响未来。

Theories, frameworks, and approaches within discursive design that support designers' practical efforts in visualizing and instantiating artifacts that improve people's ability to imagine possible futures. The underlying belief is that people can better impact the future through richer imagination, reflection, and rhetorical experience of what is possible.

阿诺德 • 瓦塞尔曼
ARNOLD WASSERMAN

我认为物质文化正处在一个关键的转折点上。在这种情况下，未来思维不仅是专业设计师工具包的一部分，也是所有学生必不可少的的元认知能力——无论在通识教育和职业生涯教育中——为了成功地应对人类现时代加速生活所面临的艰巨挑战，我们必须掌握。

I believe material culture is at a crucial inflection point. In this context, futures thinking is essential not only as part of the professional designer's toolkit; It is a necessary metacognitive capacity that all students – in general education as well as professional career preparation – must acquire in order to successfully navigate the daunting challenges of accelerated life in the Anthropocene Era.

斯图尔特 • 坎迪
STUART CANDY

混合设计 / 未来潮流，“设计幻想”和“投机设计”

Hybrid design / futures currents, “design fiction” and “speculative design”

张黎
ZHANG LI

“思辨转向”，以不确定性为驱动，以设计虚构与思想实验为主要方法去想象多重未来的可能，并提供替代性的选择以启发，并为大众赋能，使其可以重估自身处境、反思人与物以及世界的关系、并谨慎研判新兴技术的社会影响等。

Speculative turn, which is driven by uncertainty, using design fiction and thought experiments as the main methodology to imagine multiple future possibilities, and provide alternatives to inspire and empower the public to reassess their own situation, reflect on the relationship among human, things and the world, and discreetly judge the social impact of emerging technologies.

克莱夫 • 范 • 希尔登
CLIVE VAN HEERDEN

我们将设计作为思辨事物的重要工具，同时我们也理解来自环境、政治和文化所带来的差异。正是这些差异给予我们想象和探索未来的动力，也正是差异带领我们思考未来多样性的可能。”

We regard design as an important tool for thinking about things. At the same time, we also understand the differences brought by environment, politics and culture. It is these differences that give us the power to imagine and explore the future, and it is the differences that lead us to think about the possibility of diversity in the future. "

涂山
TU SHAN

设计本身就是一种对体验的探索。

Design itself is an exploration of experience.

卡尔 • 迪赛欧
CARL DISALVO

从对象到事件
猜测成为了社会调查的一种形式
当我们一起思辨时，
我们作为设计师的角色改变了……谦卑的……
我们的未来也会改变……充满希望……

From objects to events
speculation becomes a form of social inquiry
when we speculate together our role
as designers change...humble...
and our futures change too...hopeful...

吴岩
WU YAN

如果现实主义更关注现存的事物，未来主义更关注可能的事物。

If realism is more concerned with what is, futurism is more concerned with what is possible.

乔凡娜 • 皮钦诺
GIOVANNA PICCINNO

希望在当代设计中能够生成一个新的分类，从日益紧迫的全球自然条件下推导出它的模式，用新的方向来替代设计界以前在面向不可延缓的紧急要务中（包括人道主义和生态的）所承担的责任。

It would like to generate a New Taxonomy of Contemporary Design that draws its rationale from the increasingly urgent conditions that are ethical and global in nature, which replace the world of design in a new orientation of responsibility towards non-postponable emergencies (both humanitarian and ecological ones).

布鲁斯 • 斯特林
BRUCE STERLING

但现在，让我们以一种全新的方式—从媒体设计的角度—来看待科幻小说。科幻小说是一种以内容为形式的媒介。科幻小说的作品都是设计作品。

But now let's consider science fiction differently, in a new way -- from the point of view of media design. Science fiction is a form of content in a medium. Works of science fiction are design artifacts.

费俊
FEI JUN

今天我们讨论艺术与科技，需要运用跨学科的语境来理解这个新学科产生的历史、意义和价值，也需要应用跨学科的逻辑来架构艺术与科技实践和教育模式。

When we talk about art and technology today, we need to use an interdisciplinary context to understand the history, significance, and value of this new discipline, and to apply an interdisciplinary logic to structure the practice and educational model of art and technology.

苏珊 • 耶拉维奇
SUSAN YELAVICH

未来是一个变形者。一方面，它是空的，等着被填满，另一方面，它已经挤满了。

The future is a shape-shifter. On the one hand, it's empty, waiting to be filled, and on the other, it is already packed.

胡安 • 罗尔丹
JUAN ROLDAN

建筑的“主观地图”，建筑过程中的所有利益相关者：建筑师和客户、私人 / 公共机构、建筑公司、摄影师和记者的“新地图”。

"Subjective map" of the architecture in the region, a "new cartography" with all stakeholders involved in the architectural process: architects and clients, private/public institutions, construction companies, photographers, and journalists.

尼克 • 巴伦支
NIK BAERTEN

P/REFLECTIONS 是一系列与原始思想的对话，我们从不同的角度反映了当今社会。我们透过它的裂缝，期待着可能到来的世界。

P/REFLECTIONS is a series of conversations with original minds in which we reflect on present day society from a variety of angles. We peer through its cracks in anticipation of possible worlds to come.

约恩 • 比林
JÖRN BÜHRING

从广义上讲，决策者要处理不确定性，他们通过前瞻或“面向未来”的装备来预测变化的能力，成为组织战略规划和决策能力的一个重要方面。

In a broad sense, for decision makers to deal with uncertainty, their capabilities for anticipating change through prospective, or “future-oriented” devices become an essential aspect of an organizations ’strategic planning and decision-making capabilities.

亚历山大 • 比亚蒙蒂
ALESSANDRO BIAMONTI

当我们面对一个特别敏感的问题时，不是去治愈它，而是去关心它。

And when we face with an extra ordinary sensitivity, the question is not to cure it, but are taking care about it.

展览介绍

EXHIBITION
INTRODUCTION

Foresight • visible

展览前言

EXHIBITION PREFACE

远见• 可见——2020 设计未来国际作品展（Foresight • Visible — International Exhibition on Design Futures 2020）作为设计未来线上国际会议主题论坛的延伸，分别从未来纪事、未来赋能、未来演进与未来展望四个部分呈现，以设计学和未来学为基础，“设计未来”从人文视野展望未来研究，在产品与服务中融入对世界观、价值观的社会人文视角宏观思考；它为设计赋予时间变量，将演变过程与趋势视为设计的有机组成，为设计思考和实践注入未来思维，帮助创造者从未来视角思考当下设计与科技发展方向。

展览以设计未来文献整理与创意作品影像展的形式带给观众多维的视角呈现未知性和探索性的未来领域。展览对成都面向未来建设公园城市提供了启发性的未来工具以及 AI CIty 案例，以未来思维赋能城市的变革。展览的互动与体验环节，更让市民能够参与到未来城市的共创过程中，为服务成都未来生活场景建构收集素材和资料，同时也是城市即服务理念的落地尝试。此次展览为观众呈现国际会议嘉宾最前沿的学术理论、文献成果与科研创新领域的艺术设计作品带领观者全新的思考。

——付志勇

Foresight • visible - International Exhibition on design futures 2020, as an extension of the theme forum of the Online International Conference on design futures, is presented from four parts: future chronicle, future empowerment, future evolution and future outlook, based on design and futurology, "Design the future" looks forward to future research from a humanistic perspective, and integrates the social humanistic perspective of world outlook and values into products and services; It gives time variables to design, regards the evolution process and trend as an organic component of design, injects future thinking into design thinking and practice, and helps creators think about the current direction of design and scientific and Technological Development from a future perspective.

In the form of designing future literature arrangement and creative works image exhibition, the exhibition brings the audience a multi-dimensional perspective and presents an unknown and exploratory future field. City's future oriented exhibition provides inspiration for Chengdu's future oriented urban construction. The interaction and experience links of the exhibition enable citizens to participate in the co creation process of future cities, collect materials and materials for the construction of future life scenes in Chengdu, and also try to implement the concept of city as service. This exhibition presents the most cutting-edge academic theories, literature achievements and art design works in the field of scientific research and innovation of the guests of the international conference, and leads the visitors to new thinking.

——Fu Zhiyong

1/

未来纪事

FUTURES CHRONICLE

设计未来 Design Futures

设计 |shè jì|

1. 设下计谋。
2. 根据一定要求，对某项工作预先制定图样、方案。
3. 指搞设计工作的人。

未来 |wèi lái|

1. 没有到来；不来。
2. 谓尚未发生。
3. 佛教语。指来生，来世。
4. 将来。
5. 指将来的光景。
6. 即将到来。

设计未来起始于未来学和设计学，着眼于探索短期与长期未来对当下社会的影响，通过未来思维引领产业变革与社会变化，以共创性模式、思辨性方法、反思性时间，设计更合意的未来。

Design futures

Design | shè Jì
1. Set up a plan.
2. According to certain requirements, prepare drawings and schemes for a work in advance.
3. Refers to the person engaged in design work.

The future | wè I Lái|
1. Has not come; No.
2. The claim has not yet occurred.
3. Buddhist language. The afterlife, the afterlife.
4. Future.
5. It refers to the future.
6. Coming soon.

Design future starts from futurology and design, focuses on exploring the impact of short-term and long-term future on the current society, leads industrial change and social change through future thinking, and designs a more desirable future with CO creative mode, speculative method and reflective time.

01

未来纪事 FUTURES TIMELINE

FUTURES CHRONICLE

设计未来

设计未来起始于未来学和设计学，着眼于探索短期与长期未来对当下社会的影响，通过未来思维引领产业变革与社会变化，以共创性模式、思辨性方法、反思性时间，设计更合意的未来。

The Design Futures starts from futurology and design, focuses on exploring the impact of short-term and long-term futures on the current society, leads industrial changes and social changes through futures thinking, and designs more desirable futures with co-creative mode, speculative method and reflective time.

设计 |shè jì|

1.设下计谋。

2.根据一定要求，对某项工作预先制定图样、方案。

3.指搞设计工作的人。

design
[dɪ'zaɪn]
noun

A plan or drawing produced to show the look and function or workings of an object before it is built or made.

未来 |wèi lái|

1.没有到来;不来。

2.谓尚未发生。

3.佛教语。指来生，来世。

4.将来。

5.指将来的光景。

6.即将到来。

future
['fju:tʃə]
noun

(usu. the future) the time or a period of time following the moment of speaking or writing; time regarded as still to come.

ICDF

DESIGN FUTURES

Online International Conference on Design Futures 2020

1943

OssiP Flechtheim
提出和使用未来学概念

20世纪60年代

以经济发展
为主要研究内容

1961

哈德逊研究所
Hudson Institute

1965

Olaf Helmer T. J. Gordon
《探索未来》

1969

Jacque Fresco
Ken Keyes Jr.
《展望未来》
(Looking Forward)

1970 – 1990

阿尔文·托夫勒
《未来的冲击》
《第三次浪潮》
《权力的转移》

1984

Ray Hammond
《在线手册》(THE ON
HANDBOOK)
未来资源公司
Resources for
the Future, Inc.

20世纪40年代末-50年代

围绕未来学理论进行探讨
主要在社会学范畴
政治色彩浓厚

1960

Bertrand de Jouvenel
提出可能未来(Futuribles),
并于1967成立
The Futuribles
International Association

1964

The American Academy,
创建
The Commission on the
Year 2000

1968

未来研究所 Institute for
the Future(兰德公司
Rand Corporation下设)
Arthur Charles Clarke
合著电影
《2001太空漫游》剧本

20世纪70年代后

以科学技术为主要研究内
容出现多种未来研究流派

1980s

Edward Cornish
创建
World Future Society
创办杂志《The Futurist》

19

雷蒙德
《心灵

84
mond
》(THE ONLINE
OK)
公司
s for
e, Inc.

1992
联合国教科文组织
《素养的未来与
未来的素养:工业化国
家的成人素养研讨报告》

21世纪
与各个领域交叉
包括设计

2006
Noel Waite
开设课程
Design Futures

2008
–
2014
加来道雄
《Physics of
the Impossible》
《Physics of the Future》
《The Future of Mind》

2014
安东尼·邓恩
菲奥娜·雷比
思辨一切
(Speculative Everything
Design, Fiction and
Social Dreaming)

2016
–
2020
Gerd Leonhard发布演讲
The Great Transformation等;
Thomas Frey发布演讲
How does the future get created等;
Pablos Holman发布演讲
Future of Cybersecurity等

1992

21世纪

2006

2008
–
2014

2016
–
2020

1990

2008

2019

1990
雷蒙德·库茨魏尔
《心灵机器时代》

1996
尼葛洛庞帝
《数字化生存》

2004
–
2015
James Canton
《Technofutures》
《The Extreme Future》
《Future Smart: The Game
Changing Trends that Will
Transform Your World》

2008
Sohail Inayatullah
《Six pillars:
futures thinking for
transforming》

2010
–
2016
凯文凯利
《失控》
《科技想要什么》
《必然》

2015
Terry Irwin,
提出过渡设计
(Transition Design:
A Proposal for a New
Area of Design Practice,
Study, and Research)

2019
Batya Friedman、
David G. Hendry
提出价值敏感性设计
(Value Sensitive Desig

2/

未来赋能

FUTURES EMPOWERMENT

增强人类设计

增强人类设计是清华大学硕士课程《交互设计导论》，由清华大学美术学院信息艺术设计系付志勇老师开设。课程深入探究交互设计理论与实践。注重学生对交互设计概念、历史与发展、设计工具、体验设计、参与式设计、社会化设计和设计伦理方面的学习，引导学生建构完整的知识体系，提高学术研究能力。

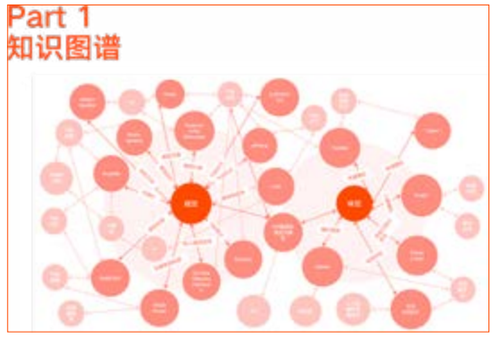
在实践方面，通过研究人与人、人与场所、人与产品之间的关系，掌握从用户研究角度展开的设计方法，并且注重未来科技对设计的影响，探索未来趋势下的设计可能性。

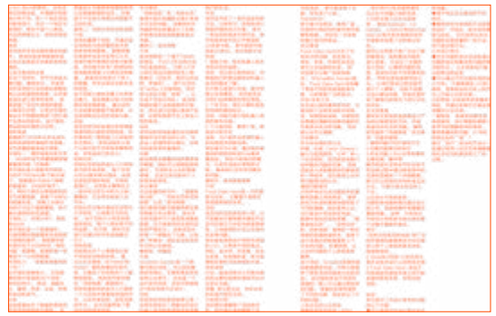
在学习过程中，我们让可以起到宏观感知作用的理论、行业现状以及学生容易上手操作的实践部分先行。中期逐渐深入到学科的分支中去呈现结合行业实践的知识体系和设计方法。后期让同学们集中运用基础方法和有引导性的创新工具输出符合设计趋势的设计成果。

3) Enhanced human design
Enhanced human design is a master's course "Introduction to interactive design" of Tsinghua University, which is opened by Fu Zhiyong, Department of information art and design, Academy of fine arts, Tsinghua University. The course deeply explores the theory and practice of interaction design. Pay attention to students' learning of interactive design concept, history and development, design tools, experiential design, participatory design, socialized design and design ethics, guide students to build a complete knowledge system and improve their academic research ability.

In practice, by studying the relationship between people, people and places, people and products, master the design method from the perspective of user research, pay attention to the impact of future technology on design, and explore the design possibility under the future trend.

In the learning process, we give priority to the theories that can play a role of macro perception, the current situation of the industry and the practical parts that are easy for students to operate. In the middle stage, it gradually goes deep into the branches of disciplines to present the knowledge system and design methods combined with industry practice. In the later stage, let the students focus on using basic methods and guiding innovative tools to output design results in line with the design trend.






Part 4
超级人类


增强人类
Augmented Human
目录 Content List


未来
趋势
预测

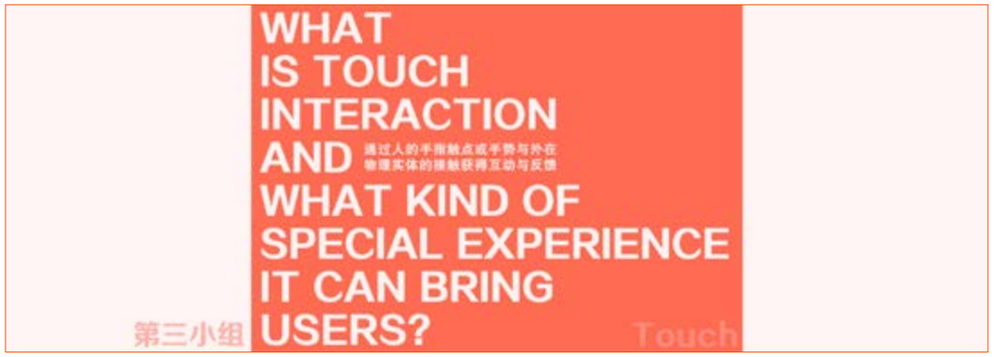

什么是增强人类?
— Definition of Augmented Human


伦理考虑
安全性
接受度
可靠性


实验室研究
2


知识图谱
人类增强


产品案例
3


WHAT
IS TOUCH
INTERACTION
AND
通过人的手指触点或手势与外在
物理实体的接触获得互动与反馈
WHAT KIND OF
SPECIAL EXPERIENCE
IT CAN BRING
USERS?
第三小组
Touch


Touch Interaction
触摸交互


触摸体验的研究现状
实验室成果 & 商业应用案例
RESEARCH STATUS OF
TOUCH EXPERIENCE
05


触摸体验的历史
从 1960 到今天
THE HISTORY OF
TOUCH INTERACTION
07


RESEARCH STATUS OF
TOUCH EXPERIENCE
06


08


工具分析触摸体验的未来
USE TOOLS TO
ANALYZES THE FUTURE
OF TOUCH EXPERIENCE
09


超级人类一想帮助的人
未来宅家打工人
SUPER HUMAN PEOPLE
WHO NEED HELP

REFERENCES
10

超级人类一喜欢的人
未来动物保护者
SUPER HUMAN PEOPLE
WHO WE LIKE


超级人类一想帮助的人
未来叛逆小学生
SUPER HUMAN PEOPLE
WHO NEED HELP


AUDIO WOLRD AND SOUND
听觉世界和声音
10 PAGE
第四组听觉世界
作业画册
主编
赵芷涵 陈百超 马一文


听觉世界和声音
听觉世界和声音


听觉世界和声音
听觉世界和声音
以人为主 Human-centered Design
以音为主 Audio-centered Design


听觉世界和声音
听觉世界和声音
引言
目录
二 以人为主
一 分类方法


听觉世界和声音
听觉世界和声音
五
未来预测与总结
六 参考文献
超级人类——我喜欢的人
Busy!


听觉世界和声音
听觉世界和声音
PERCEPTION
三 以音为主


听觉世界和声音
听觉世界和声音
超级人类——帮助学生的人
超级人类——帮助盲人的人


ALIGMENTED
HUMAN
增强
人类
NEW
新视觉
VISION


Development status and analysis
发展现状及分析
PEST ANALYSIS
(politics)
(Economics)
(Society)
(Technology)


ANTICIPAT-ED FUTURE TRENDS
未来发展趋势分析
THE WORLD OF DIGITAL HUMANS
CASE STUDY


CONTENT
FROM THE CONTENT
文献综述 LITERATURE REVIEW
前沿发展 ANTICIPATED FUTURE TRENDS
产品案例 CASE STUDY
知识图谱 KNOWLEDGE GRAPH
增强人类 AUGMENTED HUMAN


KNOWLEDGE GRAPH
知识图谱


LITERATURE REVIEW
文献综述
NEW VISION IN AUGMENTED HUMAN
Overseas and Domestic Laboratory Research Status
国内外实验室研究现状


KNOWLEDGE GRAPH
NEW VISION
超级人类——帮助学生的人

3/ 未来演进

FUTURES EVOLUTION

1）AI City | 一场未来城市的场景思辨 AI City, a Scene Speculation of Future Cities

AI 时代即将来临且可供预测，是促生人类进化的拐点。人工智能正处于为人类社会带来更大价值的起点，“莫为历史所羁绊，放手而为创绚烂”。人工智能的潜力也是无穷的，我们和它的交互刚刚开始。AI CITY 以社会（S）、技术（T）、经济（E）、环境（E）、政治（P）的未来演进为基准线，具有未来教育、未来体育、未来健康、未来心理、未来交通等不同模块。在确定模块时，团队制作了从 2020-2060 年的时间轴，设想每个时代产生技术爆炸的可能性及技术变革对未来社会产生的影响。
AI CITY 是一系列以未来人工智能城市发展为主题的的作品，探讨了人工智能与城市深度融合的方向及反思，通过未来治理、未来人类、未来经济、未来环境、未来移动和未来生活等多个模块，从接入、理解、互动、共创以及提升等角度，对人工智能参与人类生活的场景进行构想，探讨未来城市人工智能对人类生存的影响，思考可替代的未来趋势。在这样一个远期未来的架构里，各位创作者合作构建了不同的世界观和未来场景，放大来自未来的信号，以思辨性的隐喻和仿真性的场景，分别讲述未来教育、AI 健康、AI 心理以及未来的交通运输等故事，并连接成为 AI City 系列作品，在持续的创作中，视频、海报、装置造型、H5 互动动画等多种形式被引入作品，内容变得更加可视化并且走向多维的立体时空，从而激发我们规划和设计更为合意的城市未来。

2）未来仙踪 Future Footprint

未来仙踪是一组启发关于未来思考的思维工具，用于引导使用者建立未来思维。通过融合设计学与未来学工具帮助使用者反思产品和服务的未来愿景。将具体问题置于未来世界中探索解决方法，在对未来世界的塑造中，通过对世界观、价值观等宏观格局的设计，为设计赋予具有未来思考的态度与品格。未来仙踪工具由三个部分组成，彼此之间相互关联，层层递进。第一部分由 99 条时下新闻组成，通过浏览阅读最新的新闻资讯，捕捉科技发展动向与热点话题。第二部分为未来会怎样板块，根据资讯的内容以“在未来，____ 会 _____，因为 _____”的格式写下对于未来的预判。第三部分是仙踪地图，按照问题、解释、信号三个类别扩展内容形成多个未来迹象立体三角，通过排列摆放每个立体三角确定设计方向。

3）设计未来工具

从过去到多种未来，释放未来思维创造力的方法。

1) AI City, a scene specification of future cities

The AI era is coming and predictable, which is the turning point of human evolution. Artificial intelligence is at the starting point of bringing greater value to human society, "don't be bound by history, let go and create brilliance". The potential of artificial intelligence is also infinite, and our interaction with it has just begun.

AI city takes the future evolution of society (s), technology (T), economy (E), environment (E) and Politics (P) as the baseline, and has different modules such as future education, future sports, future health, future psychology and future transportation. When determining the module, the team made a timeline from 2020 to 2060 to imagine the possibility of technology explosion in each era and the impact of technological change on the future society.

AI city is a series of works with the theme of the future development of artificial intelligence cities. It discusses the direction and reflection of the deep integration of artificial intelligence and cities. Through multiple modules such as future governance, future mankind, future economy, future environment, future mobile and future life, from the perspectives of access, understanding, interaction, CO creation and promotion, Conceive the scene of artificial intelligence participating in human life, explore the impact of urban artificial intelligence on human survival in the future, and think about the alternative future trend. In such a long-term future framework, the creators have cooperated to build different world views and future scenes, amplify the signals from the future, tell the stories of future education, AI health, AI psychology and future transportation with speculative metaphors and simulation scenes, and connect them into AI city series works. In continuous creation, videos, posters Many forms such as device modeling and H5 interactive animation have been introduced into the works, and the content has become more visual and moved towards multi-dimensional three-dimensional space-time, so as to stimulate us to

plan and design a more desirable urban future.

2) Future footprint

The wizard of the future is a set of thinking tools to inspire future thinking, which is used to guide users to establish future thinking. Help users reflect on the future vision of products and services by integrating design and futurology tools. Put specific problems in the future world, explore solutions, and endow the design with the attitude and character of future thinking through the design of macro patterns such as world outlook and values in the shaping of the future world.

The future Wizard tool consists of three parts, which are interrelated and progressive. The first part consists of 99 current news articles, which capture the development trend of science and technology and hot topics by browsing and reading the latest news information. The second part is what will happen in the future. According to the content of the information, "in the future____ Yes __, Because ___ " Write down the prediction for the future in the format of. The third part is the wizard of Oz map, which expands the content according to the three categories of problem, explanation and signal to form multiple three-dimensional triangles of future signs, and determines the design direction by arranging and placing each three-dimensional triangle.

3) Design future tools

From the past to a variety of future, it is a way to release the creativity of future thinking.

03

未来演进

FUTURE EVOLUTION

AI CITY

一场未来城市的场景思辨

a Scene Speculation of Future Cities

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AI era is coming and predictable as a turning point to promote human evolution. Artificial intelligence is at the starting point of bringing greater value to human society. "Don't be encumbered by history. Go off and do something wonderful". The potential of artificial intelligence is also endless, and our interaction with it has just begun.

AI CITY takes the future evolution of society (S), technology (T), economy (E), environment (E) and politics (P) as the baseline, and has different modules such as future education, future sports, future health, future psychology and future transportation. In identifying the modules, the team produced a timeline from 2020-2060, envisioning the potential for technological explosions in each era and the impact of technological change on future societies.

AI
Y
tion

NOW

人工智能正处
放手而为创
刚开始。

(P)的未来演
心理、未来交
60年的时间
未来社会产

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2020-2030 2030-2040 2040-2050 2050-2

S 社会

"人类开始重识智艺术创造，人文关怀和终极意义的重要性，想象力成为核心素养。"
"人工智能引导创新文化发展，开辟经济重新定义人文文化。"

"传统展示资源与人工智能结合，展示更具交互式、个性化和参与感。"
"人们与机器人做家务、进行陪伴。"
"就业不再是问题，成为一种个人实现的途径。"
"中国国民素质和社会文明程度达到新高度，国家文化软实力显著增强。"

"社会福利计划推动，人民幸福感提升。"
"情感活动可以上传到大脑，购买情感的商业出现。"
"每个人都拥有更多的空闲时间和更健康的体魄，人的寿命超过100岁。"
"社会年龄分布结构得到改变，并影响到现行的经济体制。"

T 技术

交通
"超级高铁在城市穿梭，无人机可以送快递。"
"无人驾驶汽车初步产生。"

"新型列车的行驶速度是飞机的3倍。"
"无人驾驶技术的使用逐渐超过传统驾驶技术。"
"公共交通走红，飞机、轨道交通都进入无人驾驶模式。"

"太空旅行服务变得可行，但是价格不菲。"
"人类首次登陆火星。"

"免费的可再生能源推动无人汽车和电动飞机的流行。"
"自动驾驶飞机让太空旅行不再昂贵。"
"科学家在月球建立了首个人类城市。"

脑科学
"脑机接口植入动物体内进行实验。"
"后续在人体也取得实验成功。"

"神经科学和类脑人工智能迎来第一轮重大突破，革新原有算法基础。"
"人类社会初步进入'强'人工智能时代。"
"植入式脑机接口用于医疗，虚拟现实技术为医疗提供了更好的支持。"
"视频影像可以与全身套装的触觉技术结合，通过衣服上的传感器传输到大脑。"
"互动式电影和电脑游戏成为主流。"

"人脑可以和计算机进行连接，'神经置换'让人生活在虚拟世界。"

"神经科学和类脑人工智能迎来第二轮重大突破，类
"人类社会全面进入强人工智能时代。"

教育
"人工智能与扩展现实推动高校教学变革，VR取代教科书。"
"自适应学习技术与开放教育资源（在线教学）得到重点建设。"
"自然语言处理，尤其是在与机器学习结合以后，有力推进了线上学习。"
"教师可以在扩大教室规模的同时还能解决个体学生的学习需求。"
"AI翻译达到专业译者水平。"

"学习变成一种社交方式，人们公开分享学习进度和计划。"
"全民化终身学习实现。"

"学校无'教室'和'走廊'之分，教室内是正式
"校园内的每一处、每一物都是可体验、可探究
"学校深入推进智慧校务办公，实现办公无纸化
"全数字化录入、全数字化分析、全数字化呈现

"混合式学习促使以学生为中心的学习实现全球化普及。"
"学生可自主控制学习的时间、地点、路径或进度。"
"混合式学习包括转换模式、弹性模式、菜单模式和增强型虚拟式。"

人工智能
"人工智能投入到更多工作。"
"人脸识别技术成熟并得到广泛应用，但是引发伦理争议。"
"手机逐渐被淘汰。"

"人类用人工智能控制自己的家，人工智能成为很棒的家庭管家。"
"超高大楼成为'小型城市'，人们不出楼就能满足各种生活要求。"

"实验室成批生产出我们所需要的组织器官，
"目前的绝症被彻底治愈。"

"人类培育出人体器官。"
"人类变成半机械人。"

"一半工作实现人工智能化。"

生物
"修复学持续发展，人可以在体内植入机械移植物，更多可植入设备被使用。"
"骨骼服出现并广泛应用于军事、医疗等领域。"
"人工智能用于挖掘社交媒体数据并推断潜在的健康风险。"
"机器学习用于预测风险中的病人，机器人用于支持外科手术。"

"机械和人工智能技术的共同进步增加了家用机器人的使用率、安全性、可靠性。"
"特定用途的机器人被用于快递、清洁办公室和强化安全。"
"智能语音技术、物联网、传感广泛应用在家居产品。"
"相机、无人机软件参与犯罪模式分析。"

"人工智能带来
"机器人进一步推
"一种新的'奴隶

"受过高等教育的年轻人将成为带动经济的主力军。"
"新职业：虚拟现实架构师、AI伦理学家、系统农场主、人力电子资源经理……"

E 经济
"零售商采用深度学习提前预测消费者订单，预测消费者需求。"
"共享经济继续发展，全球范围内更多行程通过汽车共享服务而非私家车来完成。"
"人工智能应用于白领工作，30%公司审计工作由人工智能完成。"
"中国高标准市场体系基本建成，高水平开放型经济体制基本形成。"

"AI医疗的广泛应用让绝症治愈率提高。"
"人类通过能探测更多种信号的植入器件来'提高'其感觉能力。"

"人类完全依靠可再生能源。"
"建筑可以自己供能，能准确读懂人的需
"人类环保意识增强，环保城市成为人类

"纳米材料得到普及。"
"微电网技术出现。"
"人类可将自家产生的电力和别的建筑连接，人人都能成为发电公司。"
"交互式能源让能源更加便宜。"

"人工智能逐渐侵入几乎所有就业领域，并逐渐创造出新工作。"
"人工智能被认为是一种财富创造的不同机制，每人都应从其中分得一部分。"
"不久，对于人工智能技术所创造的经济成果的分配方式开始出现社会争议。"

E 生态
"人类生产生活方式向绿色转型。"
"能源资源配置更加合理、利用效率大幅提高，生态环境持续改善。"

"3D打印的、成本低的房子成为主流。"
"供应链和生产得到优化，实现按需生产。"
"油价峰值催生可再生能源时代。"
"绿色生产生活方式广泛形成，碳排放达峰后稳中有降，生态环境根本好转。"
"美丽中国建设目标基本实现。"

P 政治

2050-2060 2060

"免费的可再生能源推动无人汽车和电动飞机的流行，无人驾驶技术更加普遍。"
"自动驾驶飞机让太空旅行不再昂贵。"
"科学家在月球建立了首个人类城市。"

"水下高速公路，以悬浮滑板为基础的运动和太空度假宣传将空见惯。"
"城市地区使用飞行出租车和公共汽车缓解交通拥堵。"
"更长途的旅行使用可重复使用的火箭在高空高速飞行。"
"虫洞穿梭技术实现，人类前往另一片宇宙区域建立了新的基地，两者通过虫洞相连。"
"人类在这片区域发现了外星文明并建立了外交关系。"
"月球得到进一步开发，成为虫洞的连接器。"

"神经科学和类脑人工智能迎来第二轮重大突破，类脑人工智能进入升级版。"
"人类社会全面进入强人工智能时代。"

"基因技术的提升，大大加速了人类的进化，人类平均智商提升。"

"知识能够植入大脑中的生物芯片，教育制度发生了根本性改变。"
"人类不再需要死记硬背，传统的长达十来年的教育缩短为几周的移植教育。"
"学校消失，'上学'带上传感器就行了。"

"学校无'教室'和'走廊'之分，教室内是正式学习空间，教室外是非正式学习空间。"
"校园内的每一处、每一物都是可体验、可探究的学习社区。"
"学校深入推进智慧校务办公，实现办公无纸化，通过公告，钉消息、钉任务发布信息。"
"全数字化录入、全数字化分析、全数字化呈现、全数字化应用实现。"

"人工智能达到人脑的水平。"
"人工智能承担了100%的人类体力工作。"
"人工智能替代了90%的智力方面的工作。"
"人类进入到了可以不用工作的时代。"

"实验室成批生产出我们所需要的组织器官，组织器官可被人工编辑。"
"目前的绝症被彻底治愈。"

"人类体内植入可监测身体状况的微型装置。"
"人类大量使用可随意切换语言模式的虚拟看护或陪伴者。"
"重要人体器官被3D打印出来，这些器官跟过我们与生俱来的器官的品质。"

"一半工作实现人工智能化。"

"人工智能带来'无用阶级'概念。"
"机器人进一步推动经济发展，现在的许多青年在未来成为百万富翁。"
"一种新的'效率经济'出现，大量的机器人取代人工，从事那些卑微却又关键的工作。"

"人类完全依靠可再生能源。"
"建筑可以自己供能，能准确读懂人的需求并作出相应改变。"
"人类环保意识增强，环保城市成为人类主要的居住选择。"

"全球实现碳中和。"
"纳米技术的迅速发展促进滤水技术的发展，人类饮用水不足的问题被解决。"
"越来越多的人降低了对大型食品制造商的依赖，宁愿自己在小花园里种植食物。"

Futures
2100
你合意
的未来

未来教育 未来体育 未来健康 未来心理 未来交通

未来仙踪 Future F

未来仙踪是一组启发关于未来思考的思维工具，用于引导使用者建立未来思维。通过融合设计学与未来学工具帮助使用者反思产品和服务的未来愿景。将具体问题置于未来世界中探索解决方法，在对未来世界的塑造中，通过对世界观、价值观等宏观格局的设计，为设计赋予具有未来思考的态度与品格。

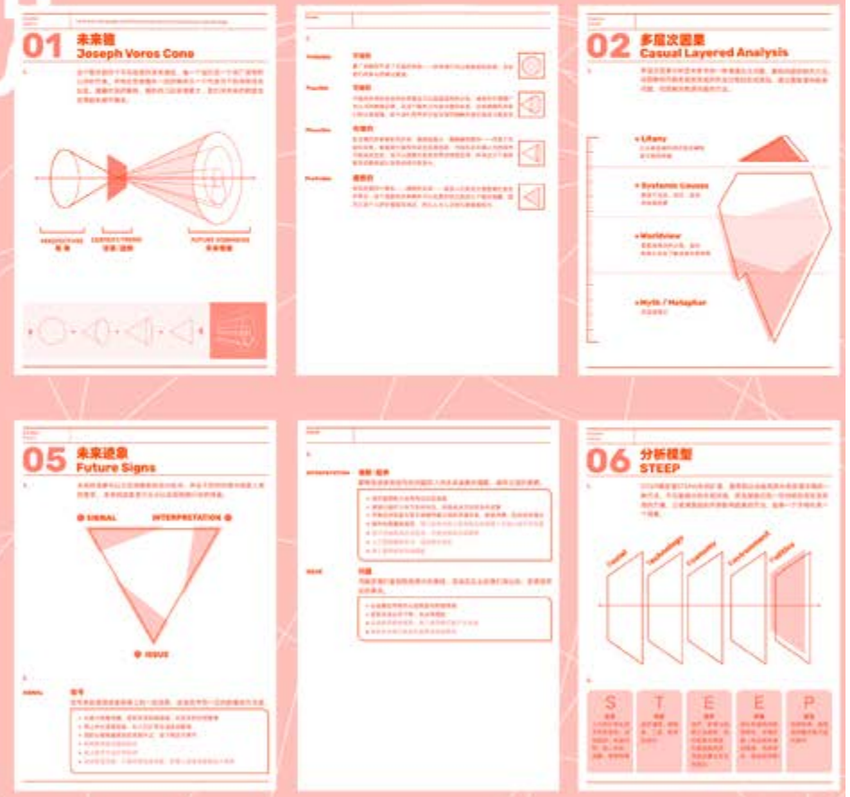
扫描墙面区域体验

Future Footprint is a set of thinking tools that inspire thinking about the future and guide users to build a future mindset. Combining design and futurology tools, it helps users reflect on the future vision of products and services. It is an approach that places specific problems in the future world to explore solutions, and that in shaping the future world, designs macro thinking such as worldview and values so as to endow design with future-oriented attitudes and quality.

03
未来演进
FUTURES EVOLUTION

Tools for

methods that



Footprint

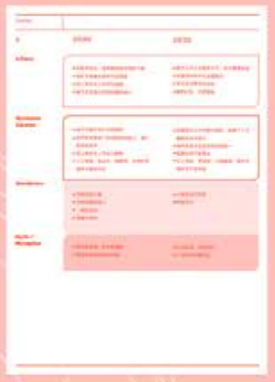
未来仙踪工具由三个部分组成，彼此之间相互关联，层层递进。第一部分由99条时下新闻组成，通过浏览阅读最新的新闻资讯，捕捉科技发展动向与热点话题。第二部分为未来会怎样板块，根据资讯的内容以“在未来，____会_____，因为_____”的格式写下对于未来的预判。第三部分是仙踪地图，按照问题、解释、信号三个类别扩展内容形成多个未来透象立体三角，通过排列摆放每个立体三角确定设计方向。

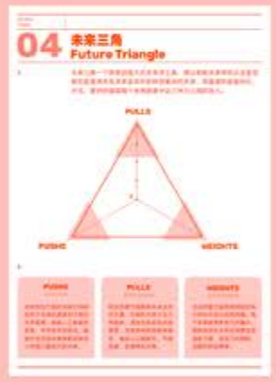
扫描地面区域体验

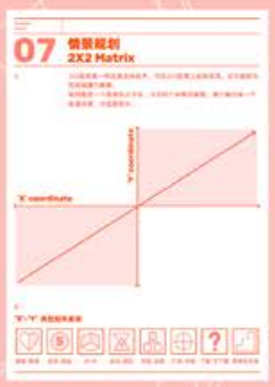
Future Footprint consists of three parts that are interconnected and progressive. The first part is composed of 99 up-to-date pieces of news, which can be browsed and read to identify the trends of technology development and hot topics. The second part is the Future section, where predictions for the future will be presented in the format of “In the future, ___ will _____ because _____” based on the aforesaid news. The third part is the Footprint map, where content of the news is expanded in such three dimensions as questions, explanations and signals to form multiple three-dimensional triangles showing future signs, with each triangle being placed properly to determine the design direction.

设计未来工具
for Design Futures

从过去到多种未来，释放未来思维创造力的方法
From the past to the futures,
ods that unlock the power of futures thinking creativity







AI CITY
城市创想

AI CITY是一系列以未来人工智能城市发展为主题的创作品。探讨了人工智能与城市深度融合的方向及反思，通过未来治理、未来人类、未来经济、未来环境、未来移动和未来生活等多个模块，从接入、理解、互动、共创以及提升等角度，对人工智能参与人类生活的场景进行构想，探讨未来城市人工智能对人类生存的影响，思考可替代的未来趋势。

AI CITY is a series of works with the theme of the future development of artificial intelligence cities, focusing on the direction and reflection of the deep integration of artificial intelligence and cities. It conceives the scenes of artificial intelligence participating in human life through multiple modules such as future governance, future human beings, future economy, future environment, future mobility and future living from the perspectives of access, understanding, interaction, co-creation and promotion, discusses the impact of future urban artificial intelligence on human survival, and considers alternative future trends.

Co-creation模块　未来共

在城市中，AI无处不在，做为人们的伙伴，AI帮助人们
中的各种问题，启发和引导人们的思路，提供解决方案
每个人都会被赋予一种基础能力，人们不再需要
注于获力的获取和提升，（获力只需直接往大脑中传
可轻松获取，但是获取获力的途径和能力提升的过程
难。）不同类别的人所加载的内容和对应的任务都会不
在未来，与他人共创成为了未来潮流，在这里欣然可
对于未来城市的设想与建议上传。

City Brain模块
未来城市大脑

AI能够智能处理不同领域的各种信息，是城市大数据的管理者。
城市拥有一个人工智能的大脑，对时刻刻监控大众的一举一动，自下而上的公民参与式的行政体系已经建立，城市大脑将人进行分类，每一类人的行为数据被大脑吸收成为大数据，城市大脑根据大数据对城市管理进行“判断”，并且可以根据“判断”对人类进行思维控制。

城市接入-Acces　未来城市

AI City 是由方盒所组成的世界，所有人都在方盒中生活，人在这里被分为四个类别，不同类别人所拥有的能力和事务的资源也各不相同。
在未来AI将会发展为超级人工智能，但整个智慧社会的基础在科技大爆炸之后遭遇到了一定的瓶颈，成几乎是无可避免的必然结果。基于二进制码市机器基本都源于绝对的确定性，然而生命的起源与演化却是基于不确定的量子涨落跳跃无数次意
随着时间的推移，关于AI　City应该走向何处，人们产生了不同的思考，诞生了各种对于城市的设想与假说，最终智慧环保主义、艺术科学统一理论、纳米技术原盲主义和无机生物智能主义等思想逐渐深入人心，并开始构筑在人心中的未来城市。

交互运作方式

AI能够智能处理不同领域的各种信息，是城市大数据的管理者。
城市大脑是集中处理城市中各项数据的综合系统，控制城市所有功能模块的运行，包括教育、交通、生活、健康等。
城市的管理采用自下而上的机制，市民通过投票选择的方式，决定着城市的各项决议，AI负责各项数据的庞大运算。经过高效的统计处理，以气球的方式呈现出综合的数据。市民投票的数量越多，在城市大脑中这项模块的气球所占比越大，最终，AI会根据群众的综合选择决定城市的发展，智能的管理着AI City。

未来城市主题

智能环保城市

智能环保城市是由一批智能环境主义者建立的城市，他们在AI 的帮助下建立就如古巴比伦那样的花园之城，人们在花园中悠转。

纳米智慧城市

纳米智慧城堡集了来自世界顶尖的纳米工程师，他们在AI的帮助下利用纳米技术构建城市中的一切，机械与人类达到了前所未有的共同繁荣。

AI艺术城市

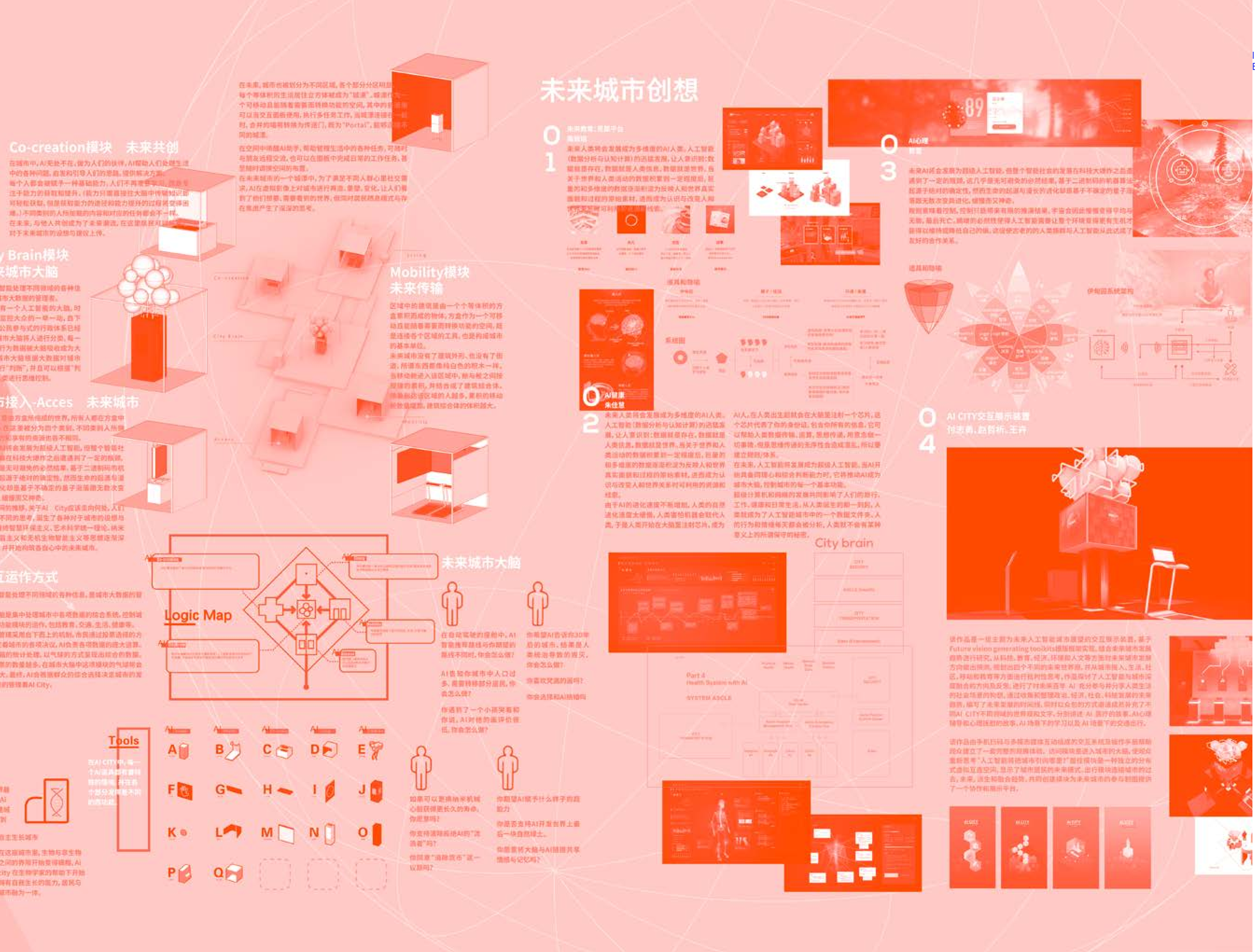
AI艺术城堡世界上最为梅丽的城市，这里聚集了来自世界各地各种风格的艺术家，他们在这里与AI共同创作，城市部是工具又同时是他们的画布与乐谱。

自主生长城市

在这座城市里，生物与非生物之间的界限开始变得模糊，AI city 在生物学家的帮助下开始拥有自我生长的能力，居民与城市融为一体。

Tools

在AI CITY中，第一个AI城市的形象特殊的模块，并在各个部分发挥着不同的作用功能。


未来城市创想
Co-creation模块　未来共创
Brain模块
城市大脑
接入-Acces　未来城市
运作方式
Mobility模块
未来传输
Logic Map
Tools
未来城市大脑
01
02
03
04
AI CITY交互展示装置
City brain

4/ 未来展望

FUTURES PROSPECT

设计未来 50 问

最后，问问自己，你是如何从今天走到你已经规划好的未来的。你现在需要做什么样的选择，什么样的改变才能达到你想要的结果？你能做什么来避免你不想看到的未来？通常，从许多未来思考中获得的关键见解之一就是简单地认识到，未来掌握在我们手中，我们的选择很重要。

Design future 50 questions

Finally, ask yourself how you have come from today to the future you have planned. What choices and changes do you need to make to achieve the results you want? What can you do to avoid the future you don't want to see? Often, one of the key insights from many future thoughts is to simply recognize that the future is in our hands and our choices are important.

2020设计未来国际论坛（成都）

DESIGN FUTURES INTERNATIONAL FORUM 2020 CHENGDU

5/

11 月 27 日下午，“远见 • 可见——2020 设计未来国际作品展”在成都市天府新区紫光 • 天府芯城正式举办，活动由清华大学中意设计创新基地主办，成都天府新区天府文创城（中意文化创新产业园）管理委员会、清华大学艺术与科技创新基地、紫光 • 天府芯城联合承办。活动当天，天府文创城管委会副主任刘杰、清华大学中意基地副主任付志勇、紫光海阔集团品牌中心总经理王元等嘉宾莅临现场，清华大学中意设计创新基地主任郦金梁连线参与，来自政府、企业、学校等关注和支持设计创新的社会各界人士也热情参与了本次活动。

据悉，本次设计未来国际作品展为设计未来线上国际会议（Online International Conference on Design Futures 2020）“设计未来”论坛主题的延伸，旨在以文献与创意作品影像展的形式，呈现未知性和探索性的未来领域设计，从而带给观众更为多维与创新的视角。

此次展览活动主要分为 2020 设计未来国际论坛与设计未来文献展两部分，其中“2020 设计未来国际论坛”由清华大学中意设计创新基地镜像基地执行主任虞苍璧担任主持，论坛主旨以设计学和未来学为基础，从人文视野展望未来研究，帮助创造者从未来视角思考当下设计与科技发展方向。论坛围绕国际会议嘉宾的最前沿的学术理论、文献成果与科研创新领域的艺术设计作品，带给观者全新的思考与灵感。

On the afternoon of November 27, "vision • visible - 2020 International Exhibition of design for the future" was officially held in Ziguang Tianfu core city, Tianfu new area, Chengdu. The event was hosted by Sino Italian design innovation base of Tsinghua University, management committee of Tianfu cultural innovation city (Sino Italian Cultural Innovation Industrial Park), art and scientific and technological innovation base of Tsinghua University Jointly undertaken by Ziguang · Tianfu core city. On the day of the event, Liu Jie, deputy director of Tianfu cultural and creative city management committee, Fu Zhiyong, deputy director of Sino Italian base of Tsinghua University, Wang Yuan, general manager of brand center of Ziguang haikuo group, and other guests attended the event. Li Jinliang, director of Sino Italian design innovation base of Tsinghua University, participated in the connection, from the government, enterprises The school and other people from all walks of life who pay attention to and support design innovation also enthusiastically participated in this activity.

It is reported that this design future international works exhibition is an extension of the theme of the "design future" forum of the Online International Conference on design futures 2020. It aims to present unknown and exploratory future field design in the form of literature and creative works image exhibition, so as to bring the audience a more multidimensional and innovative perspective.

The exhibition is mainly divided into two parts: 2020 International Forum on design future and design future literature exhibition. The "2020 International Forum on design future" is chaired by Yu cangbi, executive director of the mirror base of Sino Italian design innovation base of Tsinghua University. The theme of the forum is to look forward to future research from a humanistic perspective based on design and futurology, Help creators think about the current development direction of design and technology from the perspective of the future. The forum focuses on the most cutting-edge academic theories, literature

活动伊始，清华大学副校长杨斌教授发来视频贺信，他表示，“清华大学关注前沿科研学术领域的发展，致力于为国内外教育、科研、人文领域的合作与交流搭建战略性平台，并融合艺术、科技、文化、创新的力量，探索未来历史变革的趋势，为全球可持续发展做出贡献。本次活动是高等教育为全球可持续发展做出的一项非常有价值、有意义的举措，希望通过本次活动吸引更多创新力量，加入“设计未来”这一前沿对话”。

随后，天府文创城管委会副主任刘杰、紫光海阔集团品牌中心总经理王元分别上台致开幕辞，清华大学中意基地主任郦金梁教授以连线形式致辞，对此次活动的成功举办表示衷心祝贺。

随后进入论坛主旨报告环节，付志勇教授为大家阐述了中意设计创新基地以及天府新区镜像基地的使命与未来以及行动计划，同时也介绍了“中意青年创新创业年”的活动，希望可以通过这些举措促进中意两国的创新创业教育链、人才链与产业链、创新链的有机衔接，助力两国的创新创业成果真正转化为促进“一带一路”沿线国家发展、社会进步、人民幸福的蓬勃力量。

achievements and art design works in the field of scientific research and innovation of international conference guests, bringing new thinking and inspiration to the audience.

At the beginning of the event, Professor Yang Bin, vice president of Tsinghua University, sent a video congratulatory letter. He said, "Tsinghua University pays attention to the development of cutting-edge scientific research and academic fields, is committed to building a strategic platform for cooperation and exchange in the fields of education, scientific research and Humanities at home and abroad, integrates the forces of art, science, technology, culture and innovation, and explores the trend of future historical change, Contribute to global sustainable development. This activity is a very valuable and meaningful measure made by higher education for global sustainable development. We hope to attract more innovative forces and join the frontier dialogue of "designing the future".

Subsequently, Liu Jie, deputy director of the Management Committee of Tianfu cultural and creative city, and Wang Yuan, general manager of the brand center of Ziguang haikuo group, respectively took the stage to deliver opening speeches. Professor Li Jinliang, director of Sino Italian base of Tsinghua University, delivered a speech in the form of connection and expressed heartfelt congratulations on the success of the event.

Then we went to the keynote report of the forum. Professor Fu Zhiyong explained the mission, future and action plan of the Sino Italian design innovation base and the mirror base of Tianfu new area. At the same time, he also introduced the activities of the "Sino Italian Youth Innovation and entrepreneurship year", hoping to promote the innovation and entrepreneurship education chain, talent chain and industrial chain between China and Italy through these measures One belt, one road to innovation, is to help the two countries to transform their innovation and entrepreneurial achievements into a vigorous force to promote

设计未来论坛活动的下半场，以学术报告环节作为开篇，四川大学艺术学院赵成清教授、西南交通大学建筑与设计学院艺术设计系副主任胡剑忠教授、成都信息工程大学计算机学院讲师吴琴老师分别对“寻常之物的嬗变—设计未来的可能性”、“面向未来的环境设计教育探索”，“设计未来：从人机交互到人机集成”三个主题做了深入浅出的分享。

本次作品展作为设计未来线上国际会议 “设计未来”论坛主题的延伸，也邀请到 2020 设计未来国际会议组委会成员——清华大学美术学院夏晴博士作连线分享，为在场嘉宾进行了对于 2020 设计未来国际会议的回顾，她讲到本次会议意图通过设计行动创造未来价值。以设计学和未来学为基础，从人文视野展望未来研究，为设计赋予时间变量和未来思维，帮助创造者通过未来审视当下设计与科技发展方向。

随后的圆桌论坛环节由清华大学中意设计创新基地办公室主任王旭东老师主持，以“多视角下的文创产业发展趋势”为主题展开圆桌讨论，意在探讨如何助力设计文创成果真正转化为促进产业发展、社会进步的蓬勃力量。清控科创副总经理雷爱晶、四川师范大学影视与传媒学院教授林振宇、四川省室内装饰协会设计专委会会长周海、紫光海阔集团成都公司策划总监刘伟、木子尹工坊创始人李娅作为论坛嘉宾结合自身观察和交流互鉴经验，围绕“在整合力和嫁接能力很强的文创产业中，文创在各个行业领域如何赋能”以及“在中国的文创业产业经历了从无到有、从表面到深入的过程中，中国文创未来的道路应该怎么走？”两个主要议题，以创新、协作的视角分享了自己对于文创产业发展的深度思考与智慧观点。

the development of the "one belt along the way", social progress and people's happiness.

Fu Zhiyong shares the keynote Report

The second half of the Forum on Design for the future started with an academic report. Professor Zhao Chengqing of the school of art of Sichuan University, Professor Hu Jianzhong, deputy director of the Department of art and design of the school of architecture and design of Southwest Jiaotong University, and teacher Wu Qin, lecturer of the school of computer science of Chengdu University of information engineering, respectively commented on "the evolution of ordinary things - the possibility of designing the future" "Exploration of future oriented environmental design education" and "design the future: from human-computer interaction to human-computer integration" are shared in simple terms.

As an extension of the theme of the "design future" forum of the Online International Conference on design future, Dr. Xia Qing, member of the Organizing Committee of the 2020 International Conference on design future, School of fine arts of Tsinghua University, was also invited to share online, and reviewed the 2020 International Conference on design future for the present guests. She said that the conference intended to create future value through design actions. Based on design and futurology, it looks forward to future research from a humanistic perspective, endows design with time variables and future thinking, and helps creators examine the current development direction of design and science and technology through the future.

The subsequent round table forum session was presided over by Mr. Wang Xudong, director of Sino Italian design innovation base office of Tsinghua University, and launched a round table discussion on the theme of "development trend of cultural and creative industry from multiple perspectives", in order to explore how to help design cultural and creative achievements truly

紧接着，2020 设计未来国际作品展启动仪式开启，首先本次展览的策展人新媒体艺术家陈娱老师为大家介绍 2020 设计未来国际作品展的初衷及意义。随后，伴随着“3、2、1”的数秒倒计时，付志勇教授、王旭东主任、刘伟总监、天府文创城国际合作部部长姜娟共同宣布，“远见 • 可见——2020 设计未来国际作品展”正式启动，现场气氛达到高潮。

至此，2020 设计未来国际论坛圆满结束，但更多精彩正在崭露头角，本次设计未来国际作品展分别从未来纪事、未来赋能、未来演进与未来展望四个视角呈现。展览以设计未来文献整理与创意作品影像展的形式带给观众多维的视角呈现未知性和探索性的未来领域。展览对成都面向未来建设公园城市提供了启发性的未来工具以及 AI City 案例，以未来思维赋能城市的变革。展览设有互动与体验环节，更让市民能够参与到未来城市的共创过程中，为服务成都未来生活场景建构做规划延展，同时也是城市即服务理念的落地尝试，展览极富创新性与未来感的设计令在场嘉宾赞不绝口。本次展览将持续在天府新区紫光 • 天府芯城展出，展览时间为 11 月 27 日至 12 月 6 日，关注设计创新的各界社会人士均可前来观展，在其中获得对未来的全新思考。

transform into a vigorous force to promote industrial development and social progress. Lei Aijing, deputy general manager of qingkong Kechuang, Lin Zhenyu, Professor of the school of film, television and media of Sichuan Normal University, Zhou Hai, chairman of the Design Committee of Sichuan interior decoration Association, Liu Wei, planning director of Chengdu company of Ziguang haikuo group, and Li Ya, founder of Muzi Yin workshop, served as guests of the forum, combined with their own observation and exchange of mutual learning experience, Focusing on "how to empower cultural innovation in various industries in the cultural innovation industry with strong integration and grafting ability" and "how should China's cultural entrepreneurship industry go in the future in the process from scratch and from the surface to the depth?" The two main topics shared their in-depth thinking and wisdom on the development of cultural and creative industry from the perspective of innovation and cooperation.

Then, the launching ceremony of 2020 design future international works exhibition opened. First, the curator of this exhibition, new media artist Chen Yu, introduced the original intention and significance of 2020 design future international works exhibition. Then, with the countdown of "3, 2 and 1", Professor Fu Zhiyong, director Wang Xudong, director Liu Wei and director Jiang Juan of the International Cooperation Department of Tianfu cultural and creative city jointly announced that the "vision • visible - 2020 International Exhibition of design future" was officially launched, and the atmosphere reached a climax.

So far, the 2020 design future international forum has been successfully concluded, but more highlights are emerging. This design future international work exhibition is presented from four perspectives: future chronicle, future empowerment, future evolution and future outlook. In the form of designing future literature arrangement and creative works image exhibition, the exhibition brings the audience a multi-dimensional perspective and presents an unknown and exploratory future field.

在设计理念及环境急剧变化的当下，探讨趋势、审视变革、通过设计创造未来价值，成为一个全新的议题。本次“远见 • 可见——2020 设计未来国际作品展”的成功举办，为设计思考和实践注入了未来思维，也为中国的设计文化发展做出了“未来可期”的贡献。

The exhibition provides enlightening future tools and AI City cases for Chengdu to build a park city in the future, enabling the transformation of the city with future thinking. The exhibition has interactive and experiential links, which enable citizens to participate in the co creation process of future cities and make planning extension for serving the construction of future life scenes in Chengdu. At the same time, it is also an attempt to implement the concept of city as service. The innovative and futuristic design of the exhibition won the praise of the guests present. The exhibition will continue to be displayed in Ziguang · Tianfu core city, Tianfu new area from November 27 to December 6. People from all walks of life who pay attention to design innovation can come to the exhibition and get new thinking about the future.

With the rapid change of design concept and environment, it has become a new topic to explore the trend, examine the change and create future value through design. The successful holding of "vision • visible - 2020 International Exhibition of design future works" not only injected future thinking into design thinking and practice, but also made a "foreseeable future" contribution to the development of China's design culture.


01
未来纪事
FUTURES CHRONICLE
设计未来
FUTURES TIMELINE
1943
1961
1965
1960
1964
1968
ICDF
DESIGN
FUTURES
蔡军
Jun Cai
清华大学美术学院工业设计系教授
清华大学艺术与科学研究中心设计策略研究所
遠見可見
Foresight Visible
2020/11/27
2020设计未来
国际作品展
展览时间
2020年
至12月0


Carbon Footprint
MORPHA

03 未来演进

FUTURE EVOLUTION

AI CITY

一场未来城市的场景思辨

a Scene Speculation of Future Cities

AI时代即将来临且可供研究，我们为人类在时间线，人工智能发展于为人类社会带来大价值时起点，“做为何充满精彩，各有为何做的”，人工智能的潜力也是无穷的，我们期它可以实现的更多。

AI CITY以社会(S)、技术(T)、经济(E)、环境(E)、政治(P)做为时间轴为基准线，具备未来教育、未来体育、未来健康、未来心理、未来交通等不同模块，在确定模块时，团队制作了从2020-2060年期间的时轴，设想每个时代产生技术爆炸的可能性及技术带来对未来社会产生的影响。

AI era is coming and predictable as a turning point to promote human evolution. Artificial intelligence is at the starting point of bringing greater value to human society. "Don't be encumbered by history. Go off and do something wonderful". The potential of artificial intelligence is also endless, and our interaction with it has just begun.

AI CITY takes the future evolution of society (S), technology (T), economy (E), environment (E) and politics (P) as the baseline, and has different modules such as future education, future sports, future health, future psychology and future transportation. In identifying the modules, the team produced a timeline from 2020-2060, envisioning the potential for technological explosions in each era and the impact of technological change on future societies.

NOW

04 未来展望 FUTURES PROSPECT

相关活动

RELATED
ACTIVITIES

2020服务设计蓝皮书

2020
SERVICE DESIGN
BLUE BOOK

发达国家已步入服务经济的成熟阶段，带动的服务设计浪潮在欧美早有先声。随着中国经济结构的转型和服务经济的持续，服务设计也开始受到国内业界、学界及政府部门越来越多的关注。国内的服务设计起步较晚，尚处于刚刚兴起的状态。但因其机遇与挑战和应用的广度，吸引着众多专家学者转向服务设计的教学、研究和实践。当前，我国社会主要矛盾已经转化为人民日益增长的美好生活需要和不平衡不充分的发展之间的矛盾，人口老龄化、医疗保障、城乡问题、环境保护及危机应对等一系列社会问题越来越受到关注，通过借鉴国外的优秀经验，因地制宜地开展行动，在未来，国内的服务设计将拥有极大的发展空间。本项目从 2019 年 10 月开始，历时一年多的时间，团队实现了跨地域、跨院校，全线上的共创合作。蓝皮书项目团队通过案头研究、深度访谈、定量问卷调查等方式采集相关样本，共访谈海外教授 17 人，国内教授 9 人，其中拍摄视频记录 15 人；调研海内外学生样本近 400 人；问卷涉及院校 39 所；访谈相关领域的企业从业者、专家 14 人。调研范围涵盖来自于海外：皇家艺术学院（英）、伦敦艺术学院（英）、伦敦大学金史密斯学院（英）、格拉斯哥大学（英）、爱丁堡大学（英）、米兰理工大学（意大利）、奥斯陆大学（挪威）、阿尔托大学（芬兰）、萨凡纳艺术与设计学院（美），国内：清华大学美术学院、浙江大学、江南大学、湖南大学、南京艺术学院、广州美术学院等高校。蓝皮书据此呈现了国内外服务设计的应用领域、行业现状、高校教育的现状，

Developed countries have entered the mature stage of service economy, and the wave of service design has long been the first in Europe and America. With the transformation of China's economic structure and the continuation of service economy, service design has begun to attract more and more attention from domestic industry, academia and government departments. Domestic service design started late and is still in the rising state. However, due to its opportunities and challenges and the breadth of application, many experts and scholars are attracted to the teaching, research and practice of service design. At present, the main social contradiction in China has been transformed into the contradiction between the people's growing needs for a better life and unbalanced and insufficient development. A series of social problems such as population aging, medical security, urban and rural issues, environmental protection and crisis response have attracted more and more attention. By learning from foreign excellent experience and taking actions according to local conditions, in the future, Domestic service design will have great development space. The project started in October 2019 and lasted more than a year. The team realized cross regional, Cross College and co creation cooperation on the whole line. The blue book project team collected relevant samples through desk research, in-depth interview and quantitative questionnaire survey. A total of 17 overseas professors and 9 domestic professors were interviewed, including 15 video recording; Nearly 400 students at home and abroad were investigated; The questionnaire involved 39 colleges and universities; 14 enterprise

并基于调研内容提出未来展望，以期与同行共同探索中国的服务设计发展之道。

practitioners and experts in relevant fields were interviewed. The research scope covers overseas: Royal Academy of Arts (UK), London Academy of Arts (UK), University of London Goldsmith College (UK), University of Glasgow (UK), University of Edinburgh (UK), Milan Polytechnic University (Italy), University of Oslo (Norway), University of Alto (Finland), Savannah School of art and design (US), Domestic: Academy of fine arts of Tsinghua University, Zhejiang University, Jiangnan University, Hunan University, Nanjing Academy of Arts, Guangzhou Academy of fine arts and other universities. Based on this, the blue book presents the application fields, industry status and university education status of service design at home and abroad, and puts forward the future outlook based on the research content, in order to explore the development of service design in China with peers.

创新 • 新基建

INNOVATION • NEW INFRASTRUCTURE

近年来，智慧城市的概念开始不断发展，进入到人们生活的方方面面。但这其中仍存在着许多未解决的难题，一个创新 • 新基建的出现将带给城市建设新生机并提出全新的解决方案。我们的创新 • 新基建包括人才网络、创新空间站、设计资源库三个部分。人才网络全面汇集及储备了各类跨学科人才。设计师、工程师等人在一起迸发灵感，产生多学科融合的创新思路，提供给政府、企业以全面优质的设计方案。社区此时应运而生，创新者们可以随时分享自己的灵感与学科经验，收获协作与思想碰撞；并向服务对象开放，将他们纳入到整个创新过程之中。社区内分为领航人 (Steersman)，创意人（Creative people），与实现者 (Implementer) 三种角色，三者打破传统分工，灵活包容，提供多元思路和角色选择，鼓励交叉学科人才共创。创新空间站是创新者们汇聚进行多种项目活动的平台，我们的空间站由线上协同平台与线下的实体空间共同组成。创新者们分布在世界各地，在各个高校的实验室、企业研发中心和设计工作室等实体空间内进行各自的设计创新工作，并通过线上协同平台进行融合式创作。同时站内还有丰富的课程、竞赛、创新工作坊等活动，营造了积极活跃的创新氛围。设计资源库是一套崭新的工具资源及创新流程，供创新空间站中的创新者们使用。基于专业的设计理论基础和多方经验凝练，我们提出了：未来学工具、设计工具以及资源库三大部分。

In recent years, the concept of smart city has begun to develop and enter all aspects of people's life. However, there are still many unsolved problems. The emergence of an innovative new infrastructure will bring new vitality to urban construction and put forward new solutions. Our innovation • new infrastructure includes three parts: talent network, innovation space station and design resource pool. The talent network comprehensively collects and reserves all kinds of interdisciplinary talents. Designers, engineers and others burst out inspiration together to produce innovative ideas of multi-disciplinary integration and provide comprehensive and high-quality design schemes to the government and enterprises. At this time, the community came into being. Innovators can share their inspiration and discipline experience at any time, and harvest cooperation and thought collision; And open to the service objects and integrate them into the whole innovation process. The community is divided into three roles: steersman, creative people and implementer. They break the traditional division of labor, are flexible and inclusive, provide multiple ideas and role choices, and encourage interdisciplinary talents to create together. Innovation space station is a platform for innovators to gather for a variety of project activities. Our space station is composed of online collaboration platform and offline physical space. Innovators are distributed all over the world. They carry out their own design innovation work in physical spaces such as laboratories, enterprise R & D centers and design studios in various universities, and carry out integrated creation through online collaborative platforms. At

未来学工具包括 cla 多层次因果理论 等多个工具卡片，以未来视角带给创新者们更多元化的设计；设计工具中我们将传统的用户研究等工具沉淀，结合人工智能的力量，为设计助力；资源库分为前瞻案例、未来迹象、人物画像与思辨物体四大模块，用海量资源为创新者们提供知识储备，开阔思路，基于大数据自动生成专业参考，奠定设计基础，让设计不再从零开始。

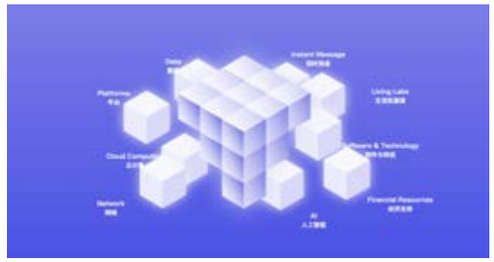
我们还将未来思维融入流程。设计流程分为研究、定义、设计、实现四个环节，我们有不同类型的项目、周期、团队成员等供创新者们选择。在每个流程节点提供相应的工具，工具间相互联动，并允许调整。在这个创新平台上，项目实现了流程透明化，人员分工明确，以及从过程到结果的创新管理。工具资源部分将为从业者赋能，革新传统设计工具，设计流程部分为高校等教育机构提供了专业有效的设计训练。

the same time, there are rich courses, competitions, innovation workshops and other activities in the station, creating a positive and active innovation atmosphere. The design repository is a new set of tool resources and innovation processes for innovators in the innovation space station. Based on the professional design theoretical basis and multi-party experience, we put forward three parts: futurology tools, design tools and resource database.

Futurology tools include CLA multi-level causality theory and other tool cards, which bring innovators more diversified design from the perspective of the future; In the design tools, we precipitate the traditional tools such as user research and combine the power of artificial intelligence to help design; The resource library is divided into four modules: forward-looking cases, future signs, character portraits and speculative objects. It uses massive resources to provide knowledge reserves for innovators, broaden ideas, automatically generate professional references based on big data, lay the design foundation, and make the design no longer start from scratch.

We also integrate future thinking into the process. The design process is divided into four links: research, definition, design and implementation. We have different types of projects, cycles and team members for innovators to choose. Corresponding tools are provided at each process node, which are linked with each other and allow adjustment. On this innovation platform, the project has realized process transparency, clear division of labor, and innovation management from process to result. The part of tool resources will empower practitioners and innovate traditional design tools. The part of design process provides professional and effective design training for colleges and universities and other educational institutions.

创新 • 新基建的理念与方法，来自于我们丰富多彩的实践活动。13 年我们组织了智慧城市国际设计展、国际创意代码大赛；发起了清华创客马拉松，推动创新创业；14 年至 19 年与桑坦德银行进行了 21 世纪全球挑战项目，与斯坦福合作人本城市项目；16 年参加了世界仿真技术应用展；20 年在疫情时期，开启设计合伙人 2.0 计划，线上线下为成都共创美好未来。九个技术支持在创新基建的底层是我们强大的技术支持，现在创新者们与创新 • 新基建一起来到你的城市，在未来思维的视角下，以兼具可持续与可复性理念的创新方式为城市做出新贡献。作为一个开放的创新平台，我们欢迎更多的伙伴加入，共创新生态。城市将拥有着开源的、共创的、智慧的、多元的未来。



Innovation • the ideas and methods of new infrastructure come from our rich and colorful practical activities. In 2013, we organized smart city international design exhibition and international creative code competition; Launched the Tsinghua maker marathon to promote innovation and entrepreneurship; From 14 to 19 years, he carried out the 21st century global challenge project with Santander bank and cooperated with Stanford in the human city project; In 2016, he participated in the world Simulation Technology Application Exhibition; During the epidemic period of 20 years, the design partner 2.0 plan was launched to create a better future for Chengdu online and offline. Nine technical supports are our strong technical support at the bottom of innovation infrastructure. Now innovators come to your city with innovation • new infrastructure and make new contributions to the city in an innovative way with the concept of sustainability and recoverability from the perspective of future thinking. As an open innovation platform, we welcome more partners to join us and create an ecological environment together. The city will have an open source, CO created, intelligent and diversified future.

相关信息

RELEVANT
INFORMATION

展览主办方

EXHIBITION ORGANIZER

主办单位
清华大学中意设计创新基地

协办单位
成都天府新区天府文创城（中意文化创新产业园）管理委员会
清华大学艺术与科技创新基地
紫光 • 天府芯城

Organizer
Sino Italian design innovation base of Tsinghua University

Co Organizer
Chengdu Tianfu New Area Tianfu cultural and creative city (Sino Italian Cultural Innovation Industrial Park) Management Committee
Art and technology innovation base of Tsinghua University
Ziguang Tianfu core city

清华大学中意设计创新基地

CHINA-ITALY DESIGN INNOVATION HUB

清华大学中意设计创新基地（英文名称 China-Italy Design Innovation Hub，英文缩写 CIDIH，简称中意基地）是清华大学在欧洲设立的首个教育科研基地，是中意设计创新合作的综合性国际平台，标志着清华大学全球战略在欧洲迈出重要一步。中意设计创新基地依托清华大学与米兰理工大学的学科优势，打造具有全球影响力的设计创新中心，走出一条新的设计领域成果转化与企业孵化之路，为全校创新人才培养、国际合作交流提供支撑，并致力于服务国家“一带一路”倡议，促进中意及中欧教育科研和文化交流，以及从“中国制造”到“中国创造”的实现。

China Italy Design Innovation Hub (cidih) of Tsinghua University is the first educational and scientific research base established by Tsinghua University in Europe. It is a comprehensive international platform for Sino Italian design innovation cooperation, marking an important step in the global strategy of Tsinghua University in Europe. One belt, one road, is designed to build a global innovation center with the global influence. It is a new design field with the transformation of the new product design and the business incubation. It provides support for the whole school's innovative talents training and international cooperation and exchanges, and is committed to serving the national "one belt and one way" initiative. The design of the innovation center of the Tsinghua University is a new area of innovation. Promote education, scientific research and cultural exchanges between China and Italy and between China and Europe, and realize the transformation from "made in China" to "created in China".

Distretto
Sino-Italiano
sulla Cultura
e l'Innovazione
中意文化创新产业园

2017 年 2 月，在习近平主席和意大利总统马塔雷拉见证下，四川省人民政府与意大利外交与国际合作部在京签署《关于在四川建立中意文化创新园区的联合声明》. 同年 8 月，成都市人民政府与意大利经济发展部签署《关于在川合作建设中意文化创新园区的意向协议》. 中意文化创新产业园正式落户天府文创城，着力打造中意文化艺术交流和文创产能合作的“共赢平台”。

In February 2017, under the testimony of President Xi Jinping and President Mattarella of Italy, the Sichuan Provincial People's government and the Ministry of foreign affairs and international cooperation of Italy signed the joint statement on establishing a Sino Italian Cultural Innovation Park in Sichuan. In August of the same year, The Chengdu Municipal People's government and the Italian Ministry of economic development signed the agreement of intent on cooperation in the construction of Sino Italian Cultural Innovation Park in Sichuan. The Sino Italian Cultural Innovation Industrial Park was officially settled in Tianfu cultural and creative city, focusing on creating a "win-win platform" for Sino Italian cultural and artistic exchanges and cultural and creative production capacity cooperation.

清华大学艺术与科技创新 (ATI) 基地，是由清华大学教务处主管，中国高校创新创业教育联盟和清华大学美术学院服务设计研究所联合指导的校级创新创业平台。基地以艺术与科技融合的模式引领创新创业实践，是一个艺术与科技融合的创意引擎和众创平台，以培育初创团队、升级设计服务、革新文创产业为目标。致力于打造开放跨界的创新生态，对艺术与科技融合的产品与服务进行快速孵化，为入驻团队提供专业化的资源对接服务。

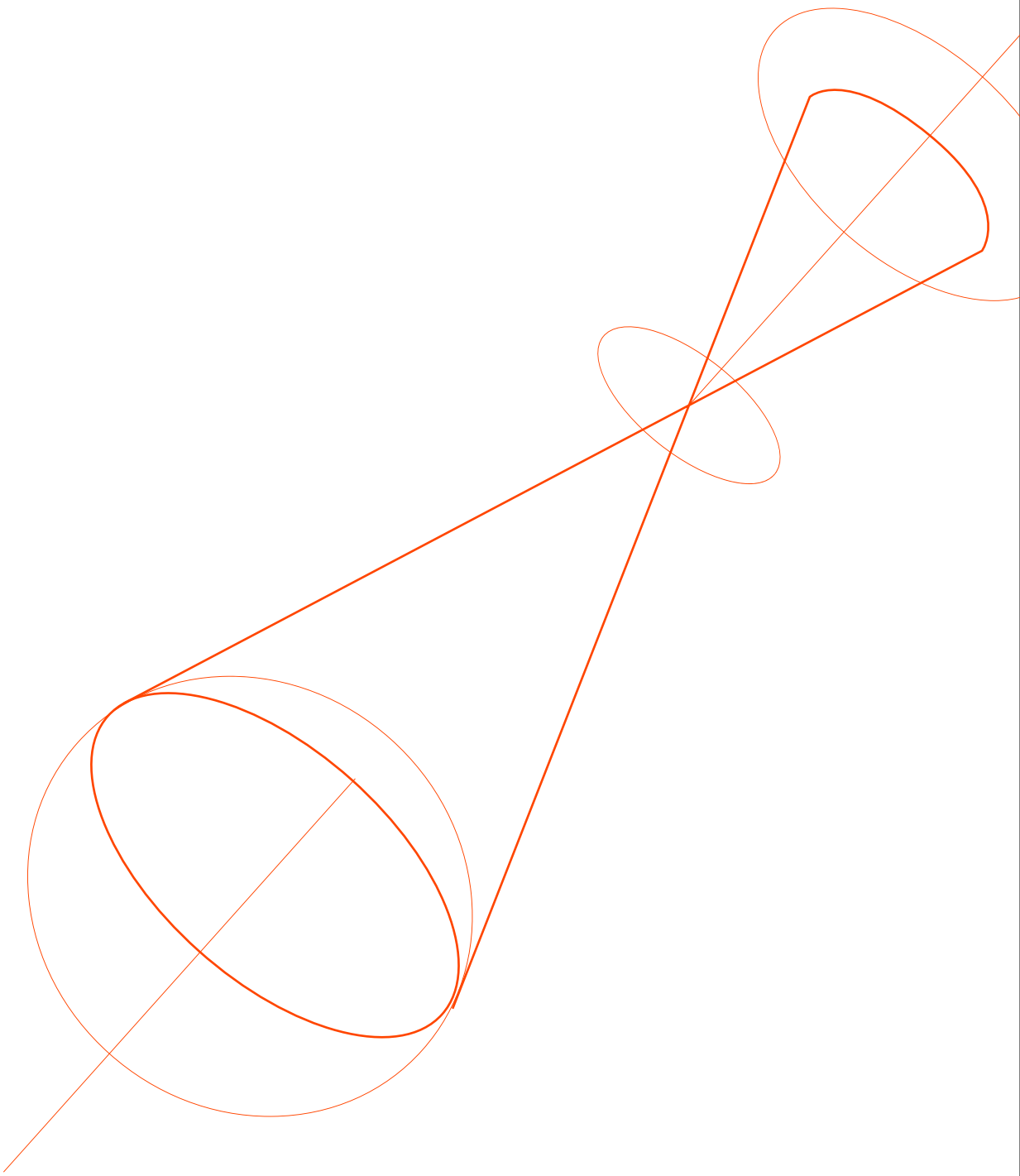
The art and technology innovation (ATI) base of Tsinghua University is a school level innovation and entrepreneurship platform under the joint guidance of the Academic Affairs Office of Tsinghua University, China University Innovation and Entrepreneurship Education Alliance and the service design institute of the Academy of fine arts of Tsinghua University. The base leads the practice of innovation and Entrepreneurship with the mode of integration of art and science and technology. It is a creative engine and mass innovation platform for the integration of art and science and technology, aiming at cultivating start-up teams, upgrading design services and innovating cultural and creative industries. It is committed to creating an open and cross-border innovation ecology, rapidly incubating products and services integrating art and science and technology, and providing professional resource docking services for settled teams.

紫光 • 天府芯城，是由中国智慧产城运营商紫光海阔集团，以约 500 亿元资金投入，联袂世界第七大建筑事务所伍兹贝格，于天府新区科学城兴隆湖旁，打造约 2022 亩的智慧产城 4.0 时代的产城标杆项目，塑造宜业宜商宜产宜居的公园城市范本。

作为项目的文化图腾建筑——智慧之环，由世界顶尖设计大师，荷兰 Powerhouse Company 创始人——南纳领衔设计，整体打造成本近 3 亿元。整个建筑曲面使用了 15218 片彩色铝板拼接以及 700 块的定制玻璃，整条跑道长达 698 米。亮红色的外观表达着成都人的朝气与蓬勃，与周围绿色景观形成鲜明的对比，是一种充满艺术感的视觉享受。依势起伏的环状曲线造型完美展现成都自然生态、以及地貌和环境特色。

Ziguang · Tianfu core city is an industry city Benchmarking Project of about 2022 mu of smart city in the 4.0 era by Ziguang haikuo group, the operator of China's smart city, with a capital investment of about 50 billion yuan and jointly with woods Berg, the world's seventh largest architectural firm, near Xinglong lake, Science City, Tianfu new area, to create a park city model suitable for industry, business, industry and residence.

As a cultural totem building of the project, the ring of wisdom is designed by Nanna, the world's top design master and the founder of the Dutch powerhouse company, with an overall construction cost of nearly 300 million yuan. The whole building surface uses 15218 pieces of colored aluminum panels and 700 pieces of customized glass. The whole runway is 698 meters long. The bright red appearance expresses the vigor and vitality of Chengdu people, in sharp contrast to the surrounding green landscape, and is a visual enjoyment full of artistic sense. The undulating circular curve shape perfectly shows the natural ecology, landform and environmental characteristics of Chengdu.



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