Architectural Cognition in Practice

A Framework for Integrating User Cognition Evidence into Architectural Design
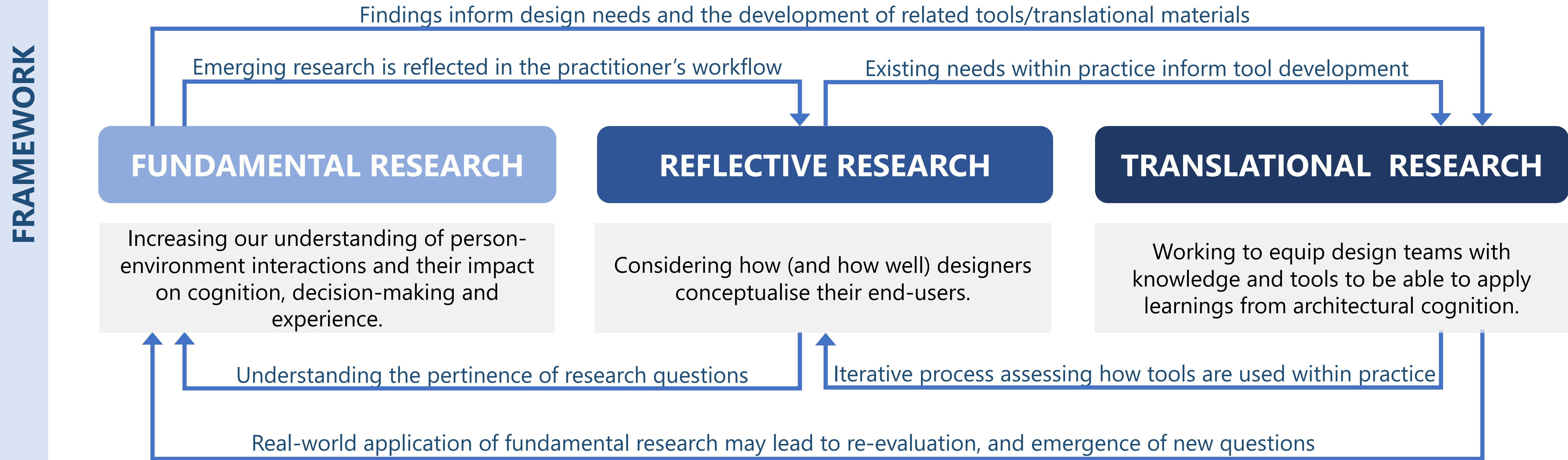
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Architecture, Cognition, Design

The growing body of knowledge within the domains of spatial cognition, neuroarchitecture, built environment research, and related fields, extensively demonstrates that the built environment has an impact on its users. However, there is a notable lack of practical guidance for architects and designers to either effectively integrate this evidence into their work or use it to validate design decisions – we must close the gap between research and practice. Here, we propose a **three-pillared framework** through which we bridge architectural cognition with practice: through **fundamental**, **reflective** and **translational** research.

FRAMEWORK

Findings inform design needs and the development of related tools/translational materials

Emerging research is reflected in the practitioner's workflow

Existing needs within practice inform tool development

FUNDAMENTAL RESEARCH

Increasing our understanding of person-environment interactions and their impact on cognition, decision-making and experience.

REFLECTIVE RESEARCH

Considering how (and how well) designers conceptualise their end-users.

TRANSLATIONAL RESEARCH

Working to equip design teams with knowledge and tools to be able to apply learnings from architectural cognition.

Understanding the pertinence of research questions

Iterative process assessing how tools are used within practice

Real-world application of fundamental research may lead to re-evaluation, and emergence of new questions

METHODS

- Eye-tracking
- Experiments
- Practice Secondments
- Literature Review
- Toolkit Development
- Wayfinding Studies
- Agent-based Modelling
- Interviews/Surveys
- Workshops
- Teaching & Training

RESEARCH HIGHLIGHTS

Zurich University Hospital Study
Evaluating how spatial layouts can support easier, faster and better interactions among staff and patients. We measure face-to-face interactions using novel sensors that anonymously quantify interaction densities, and study this alongside spatial analyses.

Senior Citizens' Experience of High-Density Neighbourhoods
Investigating senior Singaporeans' multi-sensory spatial experiences of their familiar housing neighbourhoods to inform ageing-friendly design. Eye-tracking, surveys and interviews reveal how seniors engage with and feel about their space.

Researcher Placements in Architect Firms
Gaining deeper insights into how designers currently consider and incorporate human-centric design principles into their projects. We collaborate with design teams to reciprocally evaluate how cognitive science can be integrated with architectural practice.

Surveys with Architects Worldwide
Assessing how evidence-based design processes and aspects of cognition are (or are not) evaluated in design practices – take part via the QR code below.

DESIGN EXPERTS Take part in our survey

Integrated Wayfinding System Singapore
Contributing to the design of Singapore's new integrated wayfinding system, using evidence-based strategies. We subsequently analyse the real-world use of these signs in terms of their efficacy in supporting navigation and active mobility.

Architectural Cognition Cards
Developing and running workshops with a novel card deck that facilitates perspective-sharing and knowledge-building between research and practice. Concepts from different disciplines are shared and applied.

CONCLUSION

Ultimately, the goal of our framework is to augment design intuition, design practice and architectural experience through scientific evidence. We help architects understand and argue for the value that architecture has to shape cognition, and thus tackle a range of societal challenges.

Read more of our publications here

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- CNRS@CREATE
- Heatherwick Studio
- UNStudio
- Land Transport Authority
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