# Experience design: embracing transdisciplinarity

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# Experience Design:
## Embracing Transdisciplinarity

**The emergence of experience design marks a progression from what design creates to the experiences it facilitates. While this progression activates familiar concepts from formal and interaction-based design disciplines, it also requires a wide range of knowledge, thinking and skills from disciplines outside design. The integrative nature of experience design positions it as a transdisciplinary practice that intertwines design research, thinking and doing. In this article, experience design is discussed in relation to other emerging and traditional design disciplines. Major concepts of experience design are discussed, informed by a review of peer-reviewed and popular content as well as selected, cursory discussions with practicing experience designers. Three core properties of experience design are discussed and examples of these properties in action are detailed.**

Where is experience design situated? Traditional design disciplines are driven by the design of their respective formal outcomes. These design disciplines include visual communication design, interior design, product/industrial design, information design, interaction design, architecture and planning. Emerging design disciplines like experience design are less about design artifact and more about the purposes designed outcomes hope to achieve (Sanders and Stappers 2013, p.20). In order to clarify relationships between emerging design disciplines as defined by Sanders and Stappers (Sanders and Stappers 2013, p.20), a visualization of work by Sanders, Irwin (Irwin 2015), Ryan (Ryan 2014) and Tan (Tan 2012, p.3) reveals the following design groupings (Figure 1).

### Engagement Design Group

The engagement group includes experience design and service design. These emerging design disciplines engage people on a personal level where usefulness, usability and delight are drivers of design (Sanders 1992). These disciplines integrate research and principles from cognitive and social psychology with design and they engage individual senses and meaning-making (Hassenzahl et al 2010; Steen et al 2011; Stickdorn and Schneider 2012; Hassenzahl et al 2013; Norman 2013).

### Social Design Group

This group includes design disciplines aimed at addressing societal issues. The emerging design disciplines in this group include Design for Sustainability, Design for Social Innovation/Design for Social Good and Transformation Design (Burns et al 2006)/Transition Design (Irwin 2015). These disciplines answer calls by Victor Papanek (1971), Buckminster Fuller (1969), Tony Fry (2009) and John Thackara (2006) for design to address complex, social issues. The nature of these issues requires designers to use design thinking and research to address today's *"wicked problems"* (Rittel and Webber 1973) and anticipate future, global needs. These emerging disciplines exist at the societal level where many stakeholders are involved and impacted by design decisions.

### Design Mindsets

While experience design is referred to by Sanders and Stappers as an emerging design discipline (designing for experiences), it is also a mindset for design (Hassenzahl et al 2013). By adopting an experience design mindset, design decisions are guided by considerations of a wide range of human experiences. Such a mindset focuses the designer to make decisions on a micro-level of what would be important to an individual on a personal level. For example, an experience mindset could guide the design of a box containing small jewelry items intended for a romantic partner where compartments in the box would be unlocked on different days timed with important moments from the couple's courtship. The experience design mindset can direct design iterations, concepts, selection of medium and other execution details, all by placing the question *"how would people feel?"* as an experiential guide.

References

Ajzen, I. (1991) 'The theory of planned behavior', Organizational Behavior and Human Decision Processes, 50, 179-211.

Bandura, A. (2002) Social Cognitive Theory, n.p.: Gale, Gale Virtual Reference Library, EBSCOhost [accessed 1 April 2017].

Benz, P. (2015) 'Space, experience, identity, and meaning' in Benz, P., ed., Experience Design: Concepts and Case Studies, London: Bloomsbury Academic, 77-85.

Burns, C. et al. (2006) Red paper 02: transformation design [online], Design Council, available: http://www.designcouncil.org.uk/resources/report/red-paper-02-transformation-design [accessed 7 April 2017].

Coxon, I. (2015) 'Fundamental aspects of human experience: a phenomeno(logical) explanation' in Benz, P., ed., Experience Design: Concepts and Case Studies, London: Bloomsbury Academic, 11-22.

Desmet, P. & Hekkert, P. (2007) 'Framework of product experience', International Journal of Design, 1, 57-66.

Dewey, J. (1939) 'Having an experience' in Dewey, Art as Experience, New York: Capricorn Books, 35-57.

Forlizzi, J. & Battarbee, K. (2004) 'Understanding experience in interactive systems', in DIS '04: Proceedings of the 5th Conference on Designing Interactive Systems: Processes, Practices, Methods and Techniques, 1-4 Aug, Cambridge, Massachusetts: ACM, 268-261.

Fry, T. (2009) Design Futuring: Sustainability, Ethics and New Practice. Oxford: Berg.

Fuller, R.B. (2008) Operating Manual for Spaceship Earth, New Edition, Zürich: Lars Müller.

Gendlin, E.T. (1962) Experiencing and the Creation of Meaning; A Philosophical and Psychological Approach to The Subjective, New York: Free Press of Glencoe.

Hansen, M.T. (2010) 'IDEO CEO Tim Brown: T-shaped stars: the backbone of IDEO's collaborative culture', 21 Jan, available: http://chiefexecutive.net/ideo-ceo-tim-brown-t-shaped-stars-the-backbone-of-ideoae%E2%84%A2s-collaborative-culture/ [accessed 8 April 2017]

Hassenzahl, M. (2010) Experience Design: Technology for All the Right Reasons, San Rafael, California: Morgan & Claypool Publishers.

Hassenzahl, M., Diefenbach, S. & Göritz, A. (2010) 'Needs, affect, and interactive products—facets of user experience', Interacting with Computers, 22, 353-362.

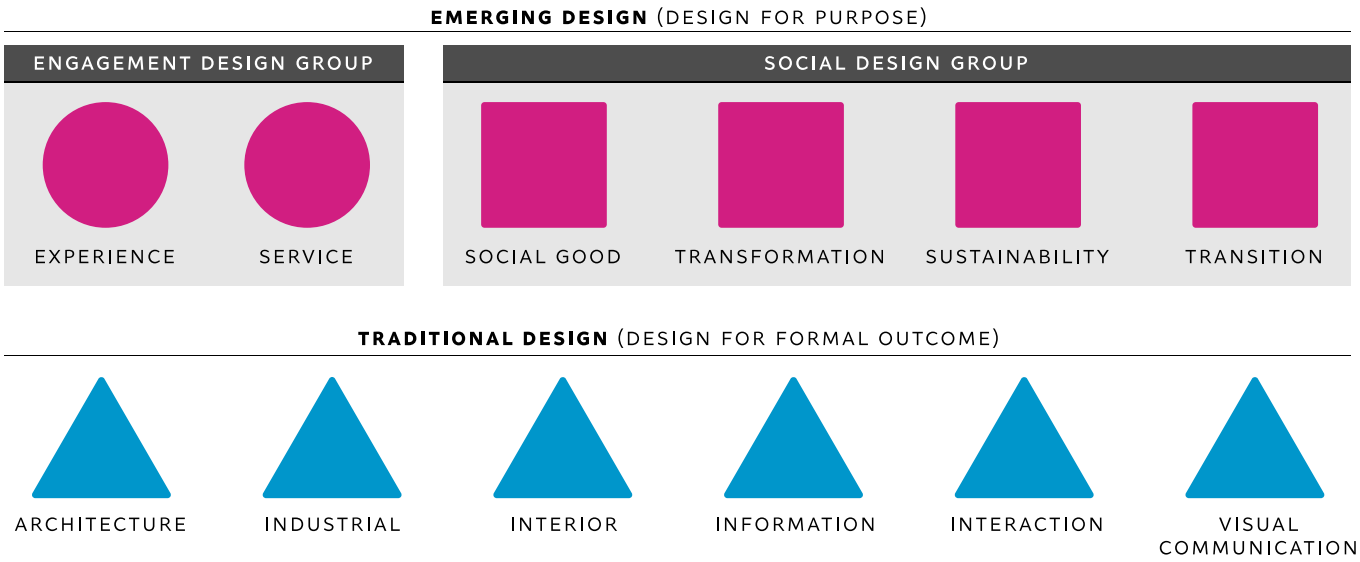


Figure 1. Emerging Design and Traditional Design

A Systemic Design mindset is valuable for Transition/Transformation Design as well as Design for Social Good because of the highly complex nature of designing future societal operation ad relationships (Ryan 2014). The Systemic mindset guides design decisions to consider system connections between a vast network of stakeholders and factors. A systemic mindset would enable the designer to consider seemingly inconsequential relationships as possible parts of design decisions for addressing complex issues.

A third mindset is the co-creation mindset. Co-creation is not a design discipline, but can be used as a mindset, method and tool for design. Such an approach frames design decisions to involve participants as creators themselves. For the *"fuzzy front end"* of design (generative design), co-creation as a mindset enables innovation because what, how and why to design are directly guided by the people whom design will most directly affect (Sanders and Stappers 2013).
Design mindsets present ways designers can reframe design problems (Kolko 2010). They are also helpful for guiding design exploration at different scales, including the micro (experience) and the macro (systemic). Co-creation as a mindset method and tool is useful for involving stakeholders throughout the design process. The act of thinking abstractly using mindsets is very different from procedural *"making"* in traditional design, exemplifying the transdisciplinary nature of emerging design disciplines and approaches. This process of applying mindsets in combination with traditional design is visualised in Figure 2.

## What is experience design?

Admittedly, the claim that a designer can actually design peoples' experiences smacks of hubris. Experiences themselves cannot be designed because experiences are not a malleable product, rather they are inside people where meanings are created in response to experienced phenomena (Gendlin 1962; Sanders 2002). The nature of experiences as a combination of philosophy, psychology and physiology makes them very difficult to define (Dewey 1939; Gendlin 1962). Experiences blend the tangible and intangible. In experiences, concepts like perception, action, motivation, emotion and cognition, are impacted by context, environment and designed products. The experiencer's cultural heritage and memories also shape the ways they experience (Forlizzi and Battarbee 2004; Desmet and Hekkert 2007; Hassenzahl 2010), creating a complex combination of real and perceived factors that influence design interactions. One aspect of experience that is constant is that they require participation from the experiencer: *"An experience is a story, emerging from the dialogue of a person with her or his world through action"* (Hassenzahl et al 2013, p.8).

With this in mind, the role of the experience designer is to think in terms of stories. When the experience designer knows a library of stories (stories where people triumph, feel they belong, remember their connection to loved ones, feel the exhilaration of doing something new), they can design with these stories as drivers for experience design decisions. These stories can be

References

Hassenzahl, M. et al. (2013) 'Designing moments of meaning and pleasure. experience design and happiness', International Journal of Design, 7, 21-31.

Imahori, T.T. & Cupach, W.M. (2005) Identity management theory, in Gudykunst, W.B., ed., Theorizing about intercultural communication, Thousand Oaks, California: SAGE.

Irwin, T. (2015) 'Transition design: A proposal for a new area of design practice, study, and research, Design and Culture, 7, 229-246.

Jensen, J.L. (2014) 'Designing for profound experiences', DesignIssues, 30, 39-52.

Kolko, J. (2010) 'Abductive thinking and sensemaking: the drivers of design synthesis', DesignIssues, 26, 15-28.

Muratovski, G. (2016) Research for Designers: A Guide to Methods and Practice. Los Angeles: SAGE.

Norman, D.A. (2013) The Design of Everyday Things, Revised and expanded edition, New York: Basic Books.

Papanek, V. (1971) Design for the Real World: Human Ecology and Social Change, New York: Thames and Hudson.

Risdon, C. (2011) 'The Anatomy of an Experience Map', Adaptive Path [online], 30 Nov, available: http://adaptivepath.org/ideas/the-anatomy-of-an-experience-map/ [accessed 9 April 2017].

Rittel, H.W.J. & Webber, M.M. (1973) 'Dilemmas in a general theory of planning', Policy Sciences, 4, 155-169.

Ryan, A.J. (2014) 'A framework for systemic design', FORMakademisk, 7, 1-14.

Sanders, E.B.-N. (1992) 'Converging perspectives: product development research for the 1990s', Design Management Journal, 3, 49-54.

Sanders, E.B.-N. (2002) 'Scaffolds for experiencing in the new design space', Information Design, 1-6.

Sanders, E.B.-N. & Stappers, P.J. (2013) Convivial Toolbox: Generative Research for the Front End of Design, Amsterdam: BIS Publishers.

Smith, J.A. (2016) Experiencing Phenomenology, London: Routledge.

Solis, B. (2015) X: The Experience When Business Meets Design, Hoboken, New Jersey: Wiley.

Steen, M., Manschot, M. & De Koning, N. (2011) 'Benefits of co-design in service design projects', International Journal of Design, 5, 53-60.

Stickdorn, M. & Schneider, J. (2012) This is Service Design Thinking. Hoboken, New Jersey: Wiley.

Tan, L. (2012) Understanding the different roles of the designer in design for social good. A study of design methodology in the DOTT 07 (designs of the time 2007) projects, unpublished thesis (PhD), Northumbria University.

Thackara, J. (2006) In the Bubble: Designing in a Complex World. Cambridge, Mass.: The MIT Press.

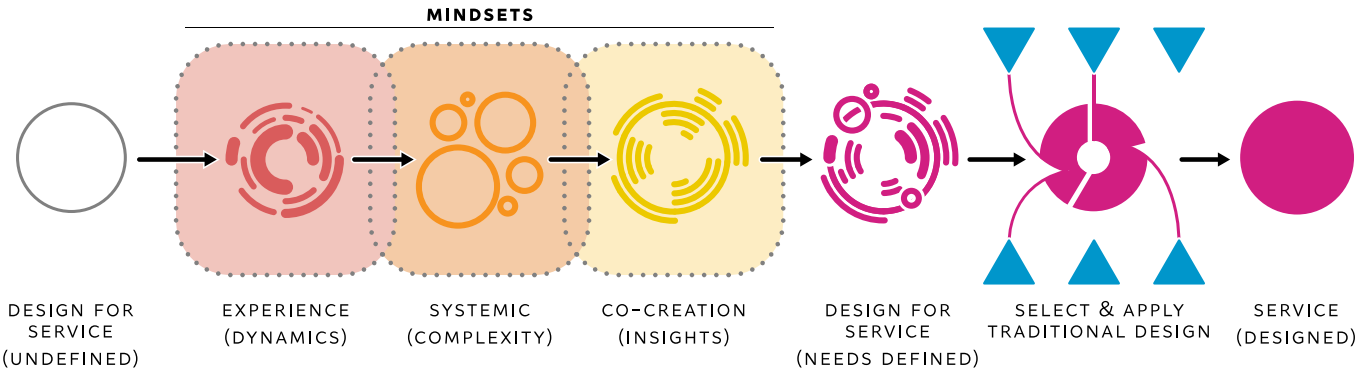


Figure 2. Applying mindsets in the design process

learned through co-creation and research and through a designer's own experience. In turn, products, services and systems can be designed to facilitate intended experiential outcomes for intended experiencers (Jensen 2014). The complexity of experience design where storytelling, psychology and traditional design are involved eludes a singular definition and stands as a reminder that experience designers must be multifaceted and transdisciplinary in order to design for believable and desirable experiences.

### Defining experience design by exploring properties

In order to determine the types of design outcomes and goals experience design encompasses, both a Google web search and peer-reviewed literature searches were conducted in April 2017, using Google Scholar and EBSCOhost, with results set to report as the most *"relevant"* for the search. Of the top 50 results for each search, most addressed experience design as Human Computer Interaction, usability, virtual reality and other screen-based design. Items produced since 2010 largely explored experience design as customer experience and branding, research into peoples' perceptions and experiences with design, designing for emotions and usability. Two peer-reviewed articles addressed Experience Based Design in healthcare and two involved experience design related to tourism. Search results revealed that most design education programs in experience design leaned toward user experience/interaction design and service design, though two hailed from theatre and lighting design. Almost all programs were offered at the graduate level. Of the design agencies surveyed, areas of expertise in experience design were extremely diverse, including game design, user experience/screen-based, environmental design, signature event planning involving lighting, video and featured talent, service, product and industrial design, omni-channel branding and design research.

In order to get first-hand thoughts on experience design, casual discussions were conducted with designers from a range of experience-centered design practices in the midwest United States between March 2016 and February 2017. These discussions were impromptu, stemming from connections made while developing a Master of Fine Arts program in Experience Design at Miami University. The impetus of these discussions was to learn the knowledge, thinking and skills designers value for experience design and how these designers developed them. Special attention was paid to learn what multi-sensory practices designers integrated into their work including sound design, modeling, branding, environmental design, interface design, service design and planning events. These discussions were very informal and not intended to represent a generalizable research sample. Still, the seven designers had similar stories. In every instance, these designers had no formal training in experience design but arrived there by starting from a core area of study in a traditional design discipline.

A Design Director at New York City-based experience design agency, Brightspot Strategy had formal training in architecture and grew his skills in service design and organisational restructuring to co-ordinate with environmental design and architecture. This individual shared that their agency's strengths combining the design of spaces, organisations and services stemmed from their focus on experiences as drivers for design. His design activities included some space design but also included facilitating design charrettes for co-creation activities where research with participants explored emotions, desires and perceptions.

Exhibit designers at Cincinnati Museum Center had backgrounds in liberal arts and design, but learned to construct exhibits and test prototypes with visitors by implementing innovations in their museum. They shared how their work involved assessing guest needs and desires in line with exhibit content, then involved co-ordinating and manufacturing physical installations as well as sounds, lighting and logistics like flow-through. These designers were chiefly concerned with experiences and shared that they would like to grow their design research capabilities in order to more effectively test and develop new exhibits that enhanced enjoyment while learning.

The Design Research Team at Crown Equipment Corporation amassed experience design capabilities by hiring formally-trained designers and social scientists who collaborate across disciplines and co-create experience-centered design research and innovations with lift truck operators. The designers at Crown shared that one of their recent projects involved researching how "happy" and/or "sad" operators were with equipment they had to use every day for their jobs. The fact that emotion and industrial design are intertwined at Crown signifies a human-centered, experience design mindset for design innovation.

### Properties of experience design

Based on the review above, three important properties of experience design emerged:
Consider the totality of experience
Research and design with experiencers
Remain open to any type of medium
Activities like boarding a commuter train at rush hour or ordering a Caesar salad at a fast food restaurant may seem like fairly simple experiences. However, an experience mindset guided by the properties listed above can shape design decision-making in profound ways for the development of experiences that could even make ordering salads memorable.

Consider the totality of experience
Contexts impact peoples' experiences and the meanings they make in profound ways (Benz 2015). These contexts include physical environments that enable movement and reduce or improve access. Temporal contexts also exist in experience design, where the time of day may significantly impact if a service is relevant or desired by certain people. The nature of experiences as perceived means that phenomenology is a central concept for experience design. Phenomenology is a philosophy and a methodology: both a way of thinking about how people live in the world and a way to begin to understand how people experience the world (Coxon 2015, p.13). Joel Smith sums phenomenology up eloquently:
*Phenomenology, as the word suggests, is the study of phenomena, alternatively appearances. This notion of appearing is, in turn, related to that of experience since things appear in experience. Phenomenology can thus be described as the study of experience and of things as experienced* (Smith 2016, p.1).

Simply, what people experience is their reality. In traditional disciplines like visual communication design, a tangible outcome is the object of discussion when assessing the design efficacy and developing iterations of the design. For example, a fast food Caesar salad can be photographed and displayed to highlight the freshness of the lettuce and imply crispness. However, in experience design, the outcome (experience) is intangible and meaning is created in the experiencer so anticipating how to design an in-store Caesar salad tasting session is difficult because not everyone may attend a planned event at the same time or in the same way. These outcomes may not always be perceived in the same way by all experiencers, especially if they are allergic to dressing or don't trust the salad greens were thoroughly washed.

As experiences take the form of virtual reality and augmented reality, designed outcomes will become even less tangible. While these designs facilitate entirely virtual experiences, they will still be very real for experiencers. Co-ordinating philosophical and psychological knowledge and thinking across disciplines may seem transdisciplinary, but in order for experience designers to develop engaging outcomes, experiential mindsets, thinking and knowing are expected knowledge.

Research and design with experiencers
In order to clearly define project goals that inform the design of relevant outcomes, designers must learn about the people who will experience designs. This includes research where qualitative and ethnographic methods are mixed with secondary research of existing theories and prior research

to answer fundamental questions about function and concept relevance (Hassenzahl 2010, p.74). For the commuter train example, research could be conducted to determine if playing ambient music over the loudspeakers during transit would be welcomed by travelers. The ability to operate research methods enables experience designers to base design decisions on evidence.

The intangible nature of experiences necessitates that experience designers have research skills that enable them to co-create outcomes with experiencers so design outcomes are as relevant as possible. It also presses that experience designers should be familiar with a wide range of research methods like observations, mobile diaries, video ethnography and other engaged methods for gathering qualitative data. Of course, after operating and gathering data, experience designers should also be practiced in analysing data and converting it into appropriate design decisions for the intended experience (Hassenzahl 2010; Muratovski 2016).

Not only is evidence via research valuable for experience design, so is the ability to apply behavioral and systems theories from social science and communication studies. Theories like Social Cognitive Theory (Bandura 2002), Theory of Planned Behavior (Ajzen 1991), and Identity Management Theory (Imahori and Cupach 2005) are helpful for experience designers because these designers will be called upon to identify behavioural patterns and attempt to determine how those patterns may align with design decisions. These theories extend outside traditional design theory, but the nature of experiences as people-driven requires research in these new areas for innovation and clearer understanding.

Remain open to any type of medium
Experience design does not centre on a specific medium—rather outcomes are selected because they most effectively facilitate a desired experience. This claim doesn't suggest that experience designers should be excellent practitioners at everything, rather it's important that they are open to change and exploring different media. Brian Solis notes: *Designing for a medium is not the same as designing for experience, and the types of media you're designing for are going to keep evolving. It's better to think beyond them* (Solis 2015, p.40).

Regardless of the medium, effective experience design must tightly align outcomes with the intended experience: Experience design puts experience before products, and acknowledges that all aspects of a product, its functionality, content, presentation and interaction, have to be in line with the experience to be designed. (Hassenzahl 2010, p.67)

Current experience design practitioners typically have a core area of design expertise that serves as a *"home base"* referred to as *"T-shaped people"* by Tim Brown of IDEO (Hansen 2010). This enables experience designers whose expertise area in architecture, visual communication design, interaction design, or sound design have a core area of experience design from which to start. The multi-sensory and temporal nature of experiences requires that designers not stay at *"home"* but find connections to other media and explore interdisciplinary interactions.

The complex, time-based nature of services makes them difficult to communicate to uninitiated audiences, so experience mapping or the use of video and motion design are effective means for making these designs more *"real"* for audiences during the development stage (Risdon 2011). In any project, a team of designers with a range of *"home"* expertise areas can collaborate to produce outcomes to facilitate experiences. The generalist perspective of openness to media enables experience designers to know when to use what medium, for what purposes and how—all before production work begins or experts in outside skill areas are contacted.

### People are transdisciplinary

The three properties of experience design explored above represent different corners of experience design that embody its transdisciplinary nature. The combination of psychology, research and design challenges designers to travel across different disciplines to create multi-sensory outcomes. When it's all put together, memorable and tightly integrated outcomes are possible. For example:
A design agency is contacted by a roller

skate business because they think an upscale roller skate repair service would be important for their customers. The design agency is not a specialist in designing roller skate repair services nor do they know much about roller skating culture. In order to learn more, they hold a free skating session at a local rink to invite participants to co-create their ideal repair service (Research and design with experiencers).

The skate session goes very well, and the design agency learns that music and a light show are very important to potential skate repair customers. The agency is skilled in developing services, environments, products, and other customised, experience-centered design outcomes (Remain open to any type of medium) but they have never done sound or lighting design. Experiences are intensely personal and specific to different people's cultural and personal makeup so the design requires research to determine colours, pricing, typefaces, uniform designs for skate repair agents and store layouts. A sound designer is hired to implement the music and lighting that will be played in the store... all so they align with the intended experience (Consider the totality of experience). The end result is a customer who loves roller skating and enjoys having the business repair their skates because the experience the business provides feels special and is true to roller skating culture.

Perhaps the most salient argument for experience design's holistic approach is that people are not *"disciplinary"*. The people-driven design approach inherent in experience design recognises that experiences are unique for every person because people come from unique cultural backgrounds and life experiences. As a result, people and experience design are transdisciplinary. To limit design to a medium would be to limit its possibilities for facilitating authentically engaging experiences. The endgame of experience design is memorability—each design is crafted to be memorable where every pixel, point, millimeter, second, lumen and decibel is crafted because experiences and the people who have them matter.