

Design Futuring Sustainability Ethics And New Practice

Tools, interfaces, methods, and practices that can help bring about a healthy, socially inclusive, and sustainable food future.

"Illustrated throughout with international case material, Design Futuring presents the author's ground-breaking ideas in a coherent framework, focusing specifically on the ways in which concerns for ethics and sustainability can change the practice of Design for the twenty-first century. Design Futuring extends far beyond Design courses and professional practice, and will also be invaluable to students and practitioners of Architecture, the Creative Arts. Business and Management."--Jacket.

In this wide-ranging book, Anke Schwittay argues that, in order to inspire and equip students to generate better responses to global challenges, we need a new high education pedagogy that develops their imagination, creativity, emotional sensibilities and practical capabilities.

This book showcases over 60 cutting-edge research papers from the 5th International Conference on Research into Design – the largest in India in this area – written by eminent researchers from across the world on design process, technologies, methods and tools, and their impact on innovation, for supporting design across boundaries. The special features of the book are the variety of insights into the product and system innovation process, and the host of methods and tools from all major areas of design research for the enhancement of the innovation process. The main benefit of the book for researchers in various areas of design and innovation are access to the latest quality research in this area, with the largest collection of research from India. For practitioners and educators, it is exposure to an empirically validated suite of theories, models, methods and tools that can be taught and practiced for design-led innovation.

This edited collection broadens the definition of sustainable real estate based on industry trends, research, and the Paris Climate Agreements. Discussions encompass existing and new buildings throughout their life cycle, the financing of their development and operations, and their impact on the surrounding environments and communities. This broader perspective provides a better understanding of the interconnected nature of the environmental, societal, communal, political, and financial issues affecting sustainable real estate, revealing the wide-ranging impact of practitioners' decisions on the sustainable real estate system. Bringing together carefully selected articles from leading global academic and practitioner experts from urban planning, design, construction, and finance, this collection brings to light new opportunities and innovative transdisciplinary solutions to as-yet unresolved problems.

Ecoarts practice is evolving quickly as a practice. While much of it is made by individual artists working alone, artists are increasingly combining into multi-artist collectives, and collaborating with scientists, sustainability professionals, industry or the community to develop artworks with quite far-reaching effects. This book describes an extraordinary range of artistic practices pitched to encourage people to adopt pro-environmental behaviours by provoking, persuading, providing information, creating empathy for nature or by being built into sustainability practices themselves. It brings together 28 contributors who examine different roles of the arts in encouraging pro-environmental behaviour. There is a wide range of practitioners represented here, including visual and performing artists, sustainability professionals, social researchers, environmental educators, research students and academics. The contributors to this book are united in believing that the arts are vital in promoting pro-environmental behavior in the way that they are practiced, but also in the connections they make to ecology, science and Indigenous culture.

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This volume is a technical and operative contribution to the United Nations "Decade on Education for Sustainable Development" (2005-2014), aiding the development of a new generation of designers, responsible and able in the task of designing environmentally sustainable products. The book provides a comprehensive framework and a practical tool to support the design process. This is an important text for those interested in the product development processes.

This book highlights the Eco-design or Sustainable design in textiles and fashion, aimed at reducing their environmental impact throughout their life cycle. Sustainable design is one of the core elements practiced in various industrial sectors. The textiles and fashion sector, is also creating a huge environmental brunt in terms of various fibres, processes, consumption of various resources including dyes, chemicals and auxiliaries, etc,. Thus, sustainable design is the key to reduce the environmental impacts made out of textiles and fashion products. This book includes seven informative chapters to decipher the concept and applications of sustainable design in textiles and fashion.

As culture is becoming increasingly recognised as a crucial element of sustainable development, design competence has emerged as a useful tool in creating a meaningful life within a sustainable mental, cultural and physical environment. Design for a Sustainable Culture explores the relationship between sustainability, culture and the shaping of human surroundings by examining the significance and potential of design as a tool for the creation of sustainable development. Drawing on interdisciplinary case studies and investigations from Europe, North America and India, this book discusses theoretical, methodological and educational aspects of the role of design in relation to human well-being and provides a unique perspective on the interface between design, culture and sustainability. This book will appeal to researchers as well as postgraduate and undergraduate students in design and design literacy, crafts, architecture and environmental planning, but also scholars of sustainability from other disciplines who wish to understand the role and impact of design and culture in sustainable development. ?

Design FuturingSustainability, Ethics and New PracticeBloomsbury USA Academic

This book fills an important gap in the literature, and presents contributions from scientists and researchers working in the field of sustainable development who have engaged in dynamic approaches to implementing sustainability in higher education. It is widely known that universities are key players in terms of the implementation and further development of sustainability, with some having the potential of acting as “living labs” in this rapidly growing field. Yet there are virtually no publications that explore the living labs concept as it relates to sustainability, and in an integrated manner. The aims of this book, which is an outcome of the “4th World Symposium on Sustainable Development at Universities” (WSSD-U-2018), held in Malaysia in 2018, are as follows: i. to document the experiences of universities from all around the world in curriculum innovation, research, activities and practical projects as they relate to sustainable development at the university level; ii. to disseminate information, ideas and experiences acquired in the execution of projects, including successful initiatives and good practice; iii. to introduce and discuss methodological approaches and projects that seek to integrate the topic of sustainable development in the curricula of universities; and iv. to promote the scalability of existing and future models from universities as living labs for sustainable development. The papers are innovative, cross-cutting and many reflect practice-based experiences, some of which may be replicable elsewhere. Also, this book, prepared by the Inter-University Sustainable Development Research Programme (IUSDRP) and the

World Sustainable Development Research and Transfer Centre (WSD-RTC), reinforces the role played by universities as living labs for sustainable development.

Sustainability has emerged as a central issue for contemporary societies and for the world community as a whole. Furthermore, many of the social and environmental concerns that are embodied in the term 'sustainability' are directly or indirectly related to design. Designers help to define our human made environment - how it is produced, how it is used, and how long it endures. Despite some forty years of development and increased awareness of the critical relationships that exist between design decisions and modes of production, energy use, environmental impacts, the nature of work and human exploitation, design for sustainability is still not widely understood or followed. The Handbook of Design for Sustainability presents a comprehensive, state-of-the-art overview of this crucial subject - its development, its methods, its practices and its potential futures. Bringing together leading international scholars and new researchers to provide a substantive insight into the latest thinking and research within the field, The Handbook covers a breadth of historical and theoretical understandings and includes a series of original essays that explore methods and approaches for designers and design educators. The Handbook presents the first systematic overview of the subject that, in addition to methods and examples, includes historical perspectives, philosophical approaches, business analyses, educational insights and emerging thinking. It is an invaluable resource for design researchers and students as well as design practitioners and private and public sector organizations wishing to develop more sustainable directions.

This book represents a major milestone in the endeavour to understand how communication is impacting on the fashion industry and on societal fashion-related practices and values in the digital age. It presents the proceedings of FACTUM 19, the first in a series of fashion communication conferences that highlights important theoretical and empirical work in the field. Beyond documenting the latest scientific insights, the book is intended to foster the sharing of methodological approaches, expand the dialogue between communications' studies and fashion-related disciplines, help establish an international and interdisciplinary network of scholars, and offer encouragement and fresh ideas to junior researchers. It is of high value to academics and students in the fields of fashion communication, fashion marketing, visual studies in fashion, digital transformation of the fashion industry, and the cultural heritage dimension of fashion. In addition, it is a key resource for professionals seeking sound research on fashion communication and marketing.

Sustainability is an increasingly vital subject for all kinds of designers, whether they work in industrial design, graphic design or architecture. This book clearly explains the key issues and debates to allow students and practitioners to adapt and integrate them into their own working practices. "Design for Sustainable Change" explores how design thinking and design-led entrepreneurship can address the sustainability agenda. It examines how the processes of design provide methodologies for driving sustainable change in businesses, organizations and society more generally. Throughout the book, Anne Chick and Paul Micklethwaite present debates around design and sustainability and the integration of the two. In-depth international case studies and interviews put the theories discussed into a real-world context. Sustainability is an increasingly vital subject for all kinds of designers, whether they work in industrial design, graphic design or architecture. This book clearly explains the key issues and debates to allow students and practitioners to adapt and integrate them into their own working practices. "Design for Sustainable Change" explores how design thinking and design-led entrepreneurship can address the sustainability agenda. It examines how the processes of design provide methodologies for driving sustainable change in businesses, organizations and society more generally. Throughout the book, Anne Chick and Paul Micklethwaite present debates around design and sustainability and the integration of the two. In-depth international case studies and interviews put the theories discussed into a real-world context.

Exploring the important role of education in both pursuing and implementing sustainable development, this timely Handbook highlights how teaching methods at schools and universities can impact the future. It looks at ways not only to inform students about matters related to sustainable development, but also to empower them to adopt behaviours and actions that lead to more sustainable lifestyles.

There is mounting evidence that ever-increasing consumption in the developed world is leading us down a path to ecological collapse, and doing our society no favours. Design and architecture are often willing accomplices in consolidating the deep social and political problems of spiralling consumption. But how does sustainable consumption affect design, and what role can design play in bringing about change? Designing De-growth argues that, rather than being a threat to design, an absolute decline in material consumption offers up a huge range...

Contemporary architects are under increasing pressure to offer a sustainable future. But with all the focus on green building there has been little investigation into the meaningful connections between architectural design, ecological systems, and environmentalism. A new generation of architects, landscape architects, designers, and engineers aims to recalibrate what humans do in the world according to how the world works as a biophysical system. Design in this sense is a larger concept having to do as much with politics and ethics as with aesthetics and technology.

This recasting of the green movement for the twenty-first century transforms design into a positive agent balancing societal values with environmental needs. Design Ecologies is a ground-breaking collection of never-before-published essays and case studies by today's most innovative designers and critics. Their design strategies—social, material, and biological—run the gamut from the intuitive to the highly technological. One essay likens window-unit air conditioners in New York City to weeds in order to spearhead the development of potential design solutions. Latz + Partner's Landscape Park integrates vegetation and industry in an urban park built amongst the monumental ruins of a former steelworks in Duisburg Nord, Germany. The engineering firm Arup presents its thirty-three-square-mile masterplan for Dongtan Eco City, an energy-independent city that China hopes will house half a million people by 2050. An essay by designer Bruce Mau leads off a stellar list of emerging designers, including Jane Amidon, Blaine Brownell, David Gissen, Gross.Max, Robert Sumrell and Kazys Varnelis, Stephen Kieran and James Timberlake, R&Sie(n), Studio 804, and WORKac.

This book argues that interior architects have a responsibility to practice their profession in collaborative ways that address the needs of communities and of to be the agents of social justice and cultural heritage. The book is divided into three sections, based on three pivotal themes — community engagement, social justice and cultural heritage. Each section has chapters that put forward the principles of these themes, leading into a variety of fascinating case studies that illustrate how socially sustainable design is implemented in diverse communities across the world. The second section includes four concise case studies of community housing issues, including remote-area indigenous housing and housing for the homeless. The third section offers two extensively researched essays on design and cultural heritage — a case study of the development of a redundant industrial site and a historical study of gendered domestic interiors. The book appeals to a wider audience than the design community alone and challenges mainstream interior design/interior architecture practitioners nationally and internationally to take a leading role in the field of socially responsible design. The issues raised by the authors are relevant for individuals, communities, government and non-government organisations, professionals and students.

“In the twenty-first century we seem to have entered into a new world of knowledge discovery, where many of the most exciting insights come not from the authority of a traditional discipline, but from the dialogue that happens at the hubs and intersections of thought — the arenas where different disciplines and approaches, different schools and habits of thinking, come together to collaborate and contend. This collection is a good example of this, and I hope the book will be widely read and its lessons learned and applied.” Tim Costello, Officer of the Order of Australia, Chief Executive, World Vision Australia.

Design as Politics confronts the inadequacy of contemporary politics to deal with unsustainability. Current 'solutions' to unsustainability are analysed as utterly insufficient for dealing with the problems but, further than this, the book questions the very ability of democracy to deliver a sustainable future. Design as Politics argues that finding solutions to this problem, of which climate change is only one part, demands original and radical thinking. Rather than reverting to failed political ideologies, the book proposes a post-democratic politics. In this, Design occupies a major role, not as it is but as it could be if transformed into a powerful agent of change, a force to create and extend freedom. The book does no less than position Design as a vital form of political action.

A critical overview of contemporary design and its place within the broader context of art history A Companion to Contemporary Design since 1945 introduces readers to a collection of specially commissioned essays exploring the complex areas of design that emerged through the latter half of the twentieth century, design history, design methods, design studies and more recently, design thinking. The book delivers a thoughtful overview of all design disciplines and also strives to stimulate inter-disciplinary debate and examine unconsidered convergences among design applications in different fields. By offering a new perspective on design, the articles assembled here present a challenging account of the boundaries between design history and its cognate disciplines, especially art history. The volume comprises five sections—Time, Place, Space, Objects and Audiences—that discuss environments for design and how we interact with designed objects and spaces. Notable features include: 24 new essays reflecting the current state of design history and theory, and examining developments on a global basis Contributions by eminent scholars and practitioners from around the globe Enriched throughout with illustrations A Companion to Contemporary Design since 1945 provides a new and thought-provoking revision of our conception and understanding of contemporary design that will be essential reading for students at both undergraduate and graduate levels as well as researchers and teachers working in design history, theory and practice, and in related fields.

This book includes details on the environmental implications of recycling, modeling of recycling, processing of recycled materials, recycling potential of materials, characterisation of recycled materials, reverse logistics, case studies of recycling various materials etc.

The volume addresses the hybridisation of knowledge production in space-related research. In contrast with interdisciplinary knowledge, which is primarily located in scholarly environments, transdisciplinary knowledge production entails a fusion of academic and non-academic knowledge, theory and practice, discipline and profession. Architecture (and urbanism), operating as both a discipline and a profession, seems to form a particularly receptive ground for transdisciplinary research. However, this specificity has not yet been developed into a full-fledged, unique mode of knowledge production. In order to dedicate specific attention to transdisciplinary knowledge production, this book aims to explore (new) hybrid modes of inquiry that allow many of architecture's longstanding schisms to be overcome: such as between theory/history and practice, critical theory and projective design, the adoption of an external viewpoint and a view-from-within (often under the guise of bottom-up vs. top-down). It therefore offers the reader a mix of contributions that elaborate on knowledge production that is situated in the (architectural and urban) profession or practice, and on practice-based approaches in theory.

Just as the term design has been going through change, growth and expansion of meaning, and interpretation in practice and education – the same can be said for design research. The traditional boundaries of design are dissolving and connections are being established with other fields at an exponential rate. Based on the proceedings from the IASDR 2017 Conference, Re:Research is an edited collection that showcases a curated selection of 83 papers – just over half of the works presented at the conference. With topics ranging from the introduction of design in the primary education sector to designing information for Artificial Intelligence systems, this book collection demonstrates the diverse perspectives of design and design research. Divided into seven thematic volumes, this collection maps out where the field of design research is now. Two Blind Spots in Design Thinking Estelle Berger From the 1980s, design thinking has emerged in companies as a method for practical and creative problem solving, based on designers' way of thinking, integrated into a rational and iterative model to accompany the process. In companies, design thinking helped valuing creative teamwork, though not necessarily professional designers' expertise. By pointing out two blind spots in design thinking models, as currently understood and implemented, this paper aims at shedding light on two rarely described traits of designers' self. The first relies in problem framing, a breaking point that deeply escapes determinism. The second blind spot questions the post project process. We thus seek to portray designers' singularity, in order to stimulate critical reflection and encourage the opening-up to design culture. Companies and organizations willing to make the most of designers' expertise would gain acknowledging their critical heteronomy to foster innovation based on strong and disruptive visions, beyond an out-of-date problem-solving approach to design. Creating Different Modes of Existence: Toward an Ontological Ethics of Design Jamie Brassett This paper will address some design concerns relating to philosopher Étienne Souriau's work *Les différents modes d'existence* (2009). This has important bearings upon design because, first, this philosophical attitude thinks of designing not as an act of forming objects with identity and meaning, but rather as a process of delivering things that allow for a multiplicity of creative remodulation of our very existences. Secondly, Souriau unpicks the concept of a being existing as a unified identity and redefines existence as a creative act of nonstop production of a variety of modes of existence. In doing this he not only moves ontological considerations to the fore of philosophical discussions away from epistemological ones, but does so in such a way as to align with attitudes to ethics that relate it to ontology – notably the work of Spinoza. (This places Souriau in a philosophical lineage that leads back, for example, to Nietzsche and Whitehead, and forward [from his era] to Deleuze and Guattari.) In thinking both ontology and ethics together, this paper will introduce a different approach to the ethics of design. Investigating Ideation Flexibility through Incremental to Radical Heuristics Ian Baker, Daniel Sevier, Seda McKilligan, Kathryn W. Jablow, Shanna R. Daly, Eli M. Silk The concept of design thinking has received increasing attention during recent years, particularly from managers around the world. However, despite being the subject of a vast number of articles and books stating its importance, the

effectiveness of this approach is unclear, as the claims about the concept are not grounded on empirical studies or evaluations. In this study, we investigated the perceptions of six design thinking methods of 21 managers in the agriculture industry as they explored employee- and business-related problems and solutions using these tools in a 6-hour workshop. The results from pre and post-survey responses suggest that the managers agreed on the value design thinking could bring to their own domains and were able to articulate on how they can use them in solving problems. We conclude by proposing directions for research to further explore adaptation of design thinking for the management practice context.

Design Research and Innovation Model Using Layered Clusters of Displaced Prototypes - Juan de la Rosa, Stan Ruecker The ability of design to recognize the wicked problems inside complex systems and find possible ways to modify them, has led other disciplines to try to understand the design process and apply it to many areas of knowledge not traditionally associated with design. In addition, design's creative solutions and ability to innovate have made designers a valuable resource in the contemporary economy. Nevertheless, there is still an unnecessarily constraining polemic about the meaning and model of the process of academic research in the field of design, the ways in which design research should be conducted and the specific knowledge that is produced with the design research process. This paper tries to broaden the discourse by describing the prototype as a basic element of the process of design, since it is connected to a specific type of knowledge and based on the working skills of the designer; it also proposes a model of the use of prototypes as a research tool based on four different theoretical concepts whose importance in the field of design has been strongly established by different academic communities around the world. These are embodied knowledge, displacement, complexity and that we learn about the world through transforming it. Pursuing these models, we develop a process to intentionally produce designerly knowledge of complex dynamic systems, using layered clusters of displaced prototypes.

Solution-Generation Design Profiles: Reflection on "Reflection in Action" - Shoshi Bar-Eli Solution-generation design behavior in general, and "reflection-in-action" in particular, can serve to differentiate designers, recognizing their personal reflecting when designing. In psychology, reflection is found a more robust tool to enhance task performance after feedback from a personal "device" that generates the process itself while interacting with visual representation. Differences among students' interior design processes appear in their solution-generation design behavior. A "think aloud" experiment identified solution generation behavior profiles. Qualitative and quantitative methodologies showed how design characteristics unite, forming patterns of design behavior. A comprehensive picture of designers' differences emerged. The research aimed: to identify individual design students' solution-generation profiles based on design characteristics; to show how reflection-in-action appearing in the profiles can serve to predict how novice designers learn and act when solving a design problem; to enhance the uniqueness of reflection-in-action for designers as distinct from reflection in other fields. Four distinct solution-generation profiles emerged, each showing a different type of reflective acts. Identifying reflection-in-action type can robustly predict how designers develop design solutions and help develop pedagogical concepts, strategies and tools.

Let's Get Divorced: Pragmatic and Critical Constructive Design Research Jodi Forlizzi, Ilpo Koskinen, Paul Hekkert, John Zimmerman Over the last two decades, constructive design research (CDR) –also known as Research through Design – has become an accepted mode of scholarly inquiry within the design research community. CDR is a broad term encompassing almost any kind of research that uses design action as a mode of inquiry. It has been described as having three distinct genres: lab, field and showroom. The lab and field genres typically take a pragmatic stance, making things as a way of investigating what preferred futures might be. In contrast, research done following the showroom approach (more commonly known as critical design [CD], speculative design or design fictions) offers a polemic and sometimes also a critique of the current state embodied in an artifact. Recently, we have observed a growing conflict within the design research community between pragmatic and critical researchers. To help reduce this conflict, we call for a divorce between CD and pragmatic CDR. We clarify how CDR and CD exist along a continuum. We conclude with suggestions for the design research community, about how each unique research approach can be used singly or in combination and how they can push the boundaries of academic design research in new collaboration with different disciplines.

Critical and Speculative Design Practice and Semiotics: Meaning-Crafting for Futures Ready Brands - Malex Salamanques This article concerns the use of critical design practices within the context of commercial semiotics, arguing that incorporating practices from a critical design approach is valuable for client brands, but also an important means with which to incite brands to consider more deeply their role in shaping the future. As an alternative to the oppositional approach frequently taken by critical design practitioners, working through design practices collaboratively alongside client brands creates potential for the radical changes sought by many of the movement's vanguard. A case study of recent work with a corporate client demonstrates the practical effects of using critical design practice within a commercial setting, proving the complementarity between critical design practice and commercial semiotics – where the confluence of the thinking brought new value to improve product design for example – and points to the value of using current leading edge thinking within the design community.

Beyond Forecasting: A Design-Inspired Foresight Approach for Preferable Futures - Jorn Buhring, Ilpo Koskinen This paper engages with the literature to present different perspectives between forecasting and foresight in strategic design, while drawing insights derived from futures studies that can be applied in form of a design-inspired foresight approach for designers and interdisciplinary innovation teams increasingly called upon to help envisage preferable futures. Demonstrating this process in applied research, relevant examples are drawn from a 2016 Financial Services industry futures study to the year 2030. While the financial services industry exemplifies an ideal case for design-inspired foresight, the aims of this paper are primarily to establish the peculiarities between traditional forecasting applications and a design-inspired foresight visioning approach as strategic design activities for selecting preferable futures. Underlining the contribution of this paper is the value of design futures thinking as a creative and divergent thought process, which has the potential to respond to the much broader organizational reforms needed to sustain in today's rapidly evolving business environment.

Developing DIVE, a Design-Led Futures Technique for SMEs Ricardo Mejia Sarmiento, Gert Pasman, Erik Jan Hultink, Pieter Jan Stappers Futures techniques have long been used in large enterprises as designerly means to explore the future and guide innovation. In the automotive industry, for instance, the development of concept cars is a technique which has repeatedly proven its value. However, while big companies have broadly embraced futures techniques, small- and medium-sized enterprises (SMEs) have lagged behind in applying them, largely because they are too resource-intensive and poorly suited to the SMEs' needs and idiosyncrasies. To address this issue, we developed DIVE: Design, Innovation, Vision, and Exploration, a design-led futures technique for SMEs. Its development began with an inquiry into concept cars in the automotive industry and concept products and services in other industries. We then combined the insights derived from these design practices with elements of the existing techniques of critical design and design fiction into the creation of DIVE's preliminary first version, which was then applied and evaluated in two iterations with SMEs,

resulting in DIVE's alpha version. After both iterations in context, it seems that DIVE suits the SMEs because of its compact and inexpensive activities which emphasize making and storytelling. Although the results of these activities might be less flashy than concept cars, these simple prototypes and videos help SMEs internalize and share a clear image of a preferable future, commonly known as vision. Developing DIVE thus helped us explore how design can support SMEs in envisioning the future in the context of innovation. Mapping for Mindsets of Possibility During Home Downsizing Lisa Otto How can design orient people to an expanded sense of future possibility? Design researchers are beginning to recognize design's potential role not solely in producing products, services and strategies but, instead, in shifting mindsets and behaviors. This shift requires a different view of the design practice, from engaging users to gather insights to be implemented, to that process as the actual material of the design. Borrowing from the framework of practice-oriented design, a first step in these processes is expanding participants' understanding of future possibilities. In opening future possibilities, one recognizes an expanded range of futures and, ideally, engages in dialog with other people and their range of possibilities. This paper introduces mapping activities that are intended to reframe participants' perception of possible futures. This study conducted pilot workshops with participants who were downsizing their home and struggling with decisions about their things and spaces. This paper argues that working with people already engaged in life transitions such as downsizing presents a rich opportunity for these futuring [sic] methods, as they are already beginning to grapple with designing for possible futures. These methods provide a stake in the ground for future exploration of potential methods to engender mindsets of possibility and engage in trialing methods like living labs. Storytelling Technique for Building Use-Case Scenarios for Design Development Sukwoo Jang, Ki-young Nam Numerous studies have dealt with what kind of value narrative can have for creating a more effective design process. However, there is lack of consideration of storytelling techniques on a stage-by-stage level, where each stage of storytelling technique can draw attention to detailed content for creating use-case scenarios for design development. This research aims to identify the potential implications for design development by using storytelling techniques. For the empirical research, two types of workshops were conducted in order to select the most appropriate storytelling technique for building use-case scenarios, and to determine the relationship between the two methods. Afterwards, co-occurrence analysis was conducted to examine how each step of storytelling technique can help designers develop an enriched content of use-case scenario. Subsequently, the major findings of this research are further discussed, dealing with how each of the storytelling technique steps can help designers to incorporate important issues when building use-case scenarios for design development. These issues are: alternative and competitor's solution which can aid designers to create better design features; status quo bias of user which can help the designer investigate the occurring reason of the issue; and finally, social/political values of user which have the potential of guiding designers to create strengthened user experience. The results of this research help designers and design researchers concentrate on crucial factors such as the alternative or competitor's solution, the status quo bias of user, and social/political values of the user when dealing with issues of building use-case scenarios. Group Storymaking: Understanding an Unfamiliar Target Group through Participatory Storytelling Hankyung Kim, Soonju Lee, Youn-kyung Lim Based on a sound research plan, qualitative user data help designers understand needs, behaviors and frustrations of a target user group. However, when a design team attempts to design for unfamiliar target groups, it is extremely difficult to accurately observe and understand them by simply using traditional research methods such as interviews and observation. As a result, the quality of user research data can be called into a question, which leads to unsatisfying design solutions. Inspired by a fiction writer's technique of generating stories together with readers, we present the new method, Group Storymaking that supports designers to quickly gain broad and clear understanding of an unfamiliar target group throughout a story-making activity with actual users. We envision Group Storymaking as a new user study method that designers can easily implement to learn about an unfamiliar target, involving actual users in a research process with less time and cost commitment. Animation as a Creative Tool: Insights into the Complex Ian Balmain Hewitt, David A. Parkinson, Kevin H. Hilton A Design for Service (DfS) approach has been linked with impacts that significantly alter touchpoints, services and organizational culture. However, there is no model with which to assess the extent to which these impacts can be considered transformational. In the absence of such a model, the authors have reviewed literature on subjects including the transformational potential of design; characteristics of transformational design; transformational change; and organizational change. From this review, six indicators of transformational change in design projects have been identified: evidence of nontraditional transformative design objects; evidence of a new perspective; evidence of a community of advocates; evidence of design capability; evidence of new power dynamics; and evidence of new organizational standards. These indicators, along with an assessment scale, have been used to successfully review the findings from a doctoral study exploring the impact of the DfS approach in Voluntary Community Sector (VCS) organizations. This paper presents this model as a first-step to establishing a method to helpfully gauge the extent of transformational impact in design projects.

Creativity and rationale comprise an essential tension in design. They are two sides of the coin; contrary, complementary, but perhaps also interdependent. Designs always serve purposes. They always have an internal logic. They can be queried, explained, and evaluated. These characteristics are what design rationale is about. But at the same time designs always provoke experiences and insights. They open up possibilities, raise questions, and engage human sense making. Design is always about creativity. Creativity and Rationale: Enhancing Human Experience by Design comprises 19 complementary chapters by leading experts in the areas of human-computer interaction design, sociotechnical systems design, requirements engineering, information systems, and artificial intelligence. Researchers, research students and practitioners in human-computer interaction and software design will find this state of the art volume invaluable.

Interdisciplinarity has become as important outside academia as within. Academics, policy makers, and the general public seek insights to help organize the vast amounts of knowledge being produced, both within research and at all levels of education. The second edition of The Oxford Handbook of Interdisciplinarity offers a thorough update of this major reference work, summarizing the latest advances within the field of inter- and transdisciplinarity. The collection is distinguished by its breadth of coverage, with chapters written by leading experts from multiple networks and organizations. The volume is edited by respected interdisciplinary scholars and supported by a prestigious advisory board to ensure the highest quality and breadth of coverage. The Oxford Handbook of Interdisciplinarity provides a synoptic overview of the current state of interdisciplinary research, education, administration and management, and of problem solving-knowledge that spans the disciplines and interdisciplinary fields. The volume negotiates the space between the academic community and society at large. Offering the most broad-based

account of inter- and transdisciplinarity to date, its 47 chapters provide a snapshot of the state of knowledge integration as interdisciplinarity approaches its century mark. This second edition expands its coverage to discuss the emergence of new fields, the increase of interdisciplinary approaches within traditional disciplines and professions, new integrative approaches to education and training, the widening international presence of interdisciplinarity, its increased support in funding agencies and science-policy bodies, and the formation of several new international associations associated with interdisciplinarity. This reference book will be a valuable addition to academic libraries worldwide, important reading for members of the sciences, social sciences, and humanities engaged in interdisciplinary research and education, and helpful for administrators and policy makers seeking to improve the use of knowledge in society. The book is current and interdisciplinary, engaging with recent developments around this topic and including perspectives from sciences, arts, and humanities. It will be a welcome contribution to studies of the Anthropocene as well as studies of research methods and practices. —Sam Mickey, University of S. Francisco Educational institutions play an instrumental role in social and political change, and are responsible for the environmental and social ethics of their institutional practices. The essays in this volume critically examine scholarly research practices in the age of the Anthropocene, and ask what accountability educators and researchers have in 'righting' their relationship to the environment. The volume further calls attention to the geographical, financial, legal and political barriers that might limit scholarly dialogue by excluding researchers from participating in traditional modes of scholarly conversation. As such, Right Research is a bold invitation to the academic community to rigorous self-reflection on what their research looks like, how it is conducted, and how it might be developed so as to increase accessibility and sustainability, and decrease carbon footprint. The volume follows a three-part structure that bridges conceptual and practical concerns: the first section challenges our assumptions about how sustainability is defined, measured and practiced; the second section showcases artist-researchers whose work engages with the impact of humans on our environment; while the third section investigates how academic spaces can model eco-conscious behaviour. This timely volume responds to an increased demand for environmentally sustainable research, and is outstanding not only in its interdisciplinarity, but its embrace of non-traditional formats, spanning academic articles, creative acts, personal reflections and dialogues. Right Research will be a valuable resource for educators and researchers interested in developing and hybridizing their scholarly communication formats in the face of the current climate crisis.

"This collection engages environmental, ethical and cultural values perspectives to show how Design and Technology (D&T) Education actively contributes to the significant educational goal of attaining sustainable global futures. An international collection of authors representing all levels of education articulate how D&T research, curriculum theory, policy, and classroom practices can synergise to contribute positively to the education of children for sustainable global futures. The book offers a spectrum of theorised curriculum positions, political and policy analysis, and case studies of successful school practice. A key word in the title is that of contribution which is construed in several senses: first, of D&T as a vehicle for understanding the range of political and social values that arise with such a major educational challenge; second, of D&T as an agent of critical and practical action for students as global citizens; third, by taking global and multiple perspectives (rather than, say, Western or mono-cultural positions); and, fourth, by demonstrating D&T's capacities for working in holistic and integrative cross-curricular ways. The authors show how students can not only learn about their potential as humans-as-designers but can also develop designerly capacities that enable them to contribute meaningfully in practical ways to their communities and to wider society, that is, as global citizens who can apply design capability in ethical ways that are respectful of peoples, cultures and environments alike."

The value of design for contributing to environmental solutions and a sustainable future is increasingly recognised. It spans many spheres of everyday life, and the ethical dimension of design practice that considers environmental, social and economic sustainability is compelling. Approaches to design recognise design as a practice that can transform human experience and understanding, expanding its role beyond stylistic enhancement. The traditional roles of design, designer and designed object are therefore redefined through new understanding of the relationship between the material and immaterial aspects of design where the design product and the design process are embodiments of ideas, values and beliefs. This multi-disciplinary approach considers how to create design which is at once aesthetically pleasing and also ethically considered, with contributions from fields as diverse as architecture, fashion, urban design and philosophy. The authors also address how to teach design based subjects while instilling a desire in the student to develop ethical work practices, both inside and outside the studio. Design academics and practitioners are facing a multiplicity of challenges in a dynamic, complex, world moving faster than the current design paradigm which is largely tied to the values and imperatives of commercial enterprise. Current education and practice need to evolve to ensure that the discipline of design meets sustainability drivers and equips students, teachers and professionals for the near-future. New approaches, methods and tools are urgently required as sustainability expands the context for design and what it means to be a 'designer'. Design activists, who comprise a diverse range of designers, teachers and other actors, are setting new ambitions for design. They seek to fundamentally challenge how, where and when design can catalyse positive impacts to address sustainability. They are also challenging who can utilise the power of the design process. To date, examination of contemporary and emergent design activism is poorly represented in the literature. This book will provide a rigorous exploration of design activism that will re-vitalise the design debate and provide a solid platform for students, teachers, design professionals and other disciplines interested in transformative (design) activism. Design Activism provides a comprehensive study of contemporary and emergent design activism. This activism has a dual aim - to make positive impacts towards more sustainable ways of living and working; and to challenge and reinvigorate design praxis,. It will collate, synthesise and analyse design activist approaches, processes, methods, tools and inspirational examples/outcomes from disparate sources and, in doing so, will create a specific canon of work to illuminate contemporary design discourse. Design Activism reveals the power of design for positive social and environmental change, design with a central activist role in the sustainability challenge. Inspired by past design activists and set against the context of global-local tensions, expressions of design activism are mapped. The nature of contemporary design activism is explored, from individual/collective action to the infrastructure that supports it generating powerful participatory design approaches, a diverse toolbox and inspirational outcomes. This is design as a political and social act, design to enable adaptive societal capacity for co-futuring.

Design is a key site of cultural production and change in contemporary society. Anthropologists have been involved in design projects for several decades but only recently a new field of inquiry has emerged which aims to integrate the strengths of design thinking and anthropological research. This book is written by anthropologists who actively participate in the development of design anthropology. Comprising both cutting-edge explorations and theoretical reflections, it provides a much-needed introduction to the concepts, methods, practices and challenges of

