DESIGN AND HEALTH – PRACTICE, RESEARCH AND SOCIAL RELEVANCE

2023 SYMPOSIUM PROCEEDINGS
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Table of contents

Acknowledgements

1_Introduction

From July 10 till July 12, 2023, the Swiss Center for Design and Health (SCDH) hosted its second symposium Design and Health — Practice, Research and Social Relevance in Nidau, Switzerland. During three inspiring days at the SCDH headquarters near the beautiful lake of Biel/Bienne, invited speakers, members of the SCDH International Advisory Board, the SCDH Scientific Board, and staff of the SCDH discussed the relevance of design for healthcare and public health. The present proceedings are the result of these discussions.

As a national technology competence centre at the intersection of health, design, technology, and architecture, the SCDH is concerned with future path-ways for the health of people, communities, and our planet. It does this by supporting knowledge and technology transfer between academic partners, society, and industry in the form of applied research, basic research, continuing education, and the translation of research results — as was the case at the second international symposium. The SCDH currently employs 24 people from a wide range of disciplines. As a public-private partnership, it is supported by its shareholders and by funding from the Canton of Berne and the Swiss Confede-ration to fulfil its mission both nationally and internationally.

With 39 participants from 6 different countries, the second international sym-posium exemplifies the transfer function of the Swiss Center for Design and Health by providing a platform to explore the topic of «Design and Health — Practice, Research and Social Relevance» from a variety of perspectives. As chair of the conference, our dear colleague and member of the SCDH International Advisory Board, Prof. em. Jorge Frascara has developed a multi-faceted pro-gramme. Despite its diversity, it offered deep insights into the different facets and dimensions of the designability of ecosystems or pathways for health. From the fundamental question of regenerative design approaches, addressed

by Daniel Christian Wahl, to Angela Mazzi's discussion of the importance of the built environment and its influence on our health and care, to Guillermina Noël's or Juan P. Brito's focus on the aspect of collaboration and the relationship between patients and care providers. A relationship that Thomas Zeltner summed up once again in his public lecture at the symposium entitled «Love is at the Centre of Health Care».

We would like to take this opportunity to once again thank all the contributors and participants who shared their knowledge, expertise, ideas and visions for design and health in the numerous discussion panels and workshops, as well as in the informal moments when we came together. In doing so, we hope to pro–vide readers of these proceedings with a glimpse into the mission and work of our centre, as well as insights and inspiration that may inform the reader's own future work at the intersection of design and health.

Dr. Minou Afzali, Head of Research
Dr. Jan Eckert, Head of Living Lab
Prof. Dr. Arne Scheuermann, Scientific Director
Stefan Sulzer, Managing Director

2_Aims of the Symposium

Jorge Frascara opening the symposium

The 2023 Symposium aimed at creating recommendations to the SCDH for its programs of action and research, and to help interested health officials, managers, designers, and front-line healthcare personnel achieve positive outcomes in their daily interaction with current challenges in both health promotion and healthcare. The symposium's aim was not the development of theory, but of specific guidelines to improve practices, ranging from the ecological health of the environment, through policy making in public health and health services, to working in an operating theatre, or the nature of clinical encounters.

Specific objectives of the symposium

1. To contribute to the promotion of the benefits that the integration of Design and Health can bring to society, in terms of both healthcare (the medicine environment), and public health (health in daily life).
2. To improve the understanding of design: moving from the design of objects and communications to the softer terrain of human interactions; promoting a better understanding of Beyond-Human-Centered-Design (Design and the biosphere), and Evidence-based Design (the relation between design and science).
3. To contribute to the development of the SCDH by extending its network and promoting its potential for partnership with health sector and other relevant actors.

3_Structure of the symposium

The lectures

Three keynote in-person lectures and two online interviews were focused on opening discussions, posing questions, and sometimes using case studies to illustrate the integration of design and health, demonstrating the benefit that this integration had brought and can bring to both health and design. They were followed by 20/30 minutes of Q&A and conversations between speakers and the audience. Four presentations took place on day 1 (July 10). The topics of the lectures were further developed on day 2 by three Working Groups, that aimed at drafting recommendations for action and research.

The lectures explored different scales of reflection and action, and the ways in which these differ—rent scales affect human health, from the planet to the personal. Wahl discussed the broadest concerns: the ecological health of the planet and the issues that should be addressed in defense of a healthier way of living. Zeltner focused on public health and the need to understand it as an ecology, whose efficiency and ethics should be centered on love and respect for all involved. Not being only a patient-centered approach, but considering everybody that is in the system. Mazzi focused on the specific problem of building health service spaces that contribute to healing. Brito explained the ways in which designer and clinician work together at Mayo Clinic in an effort to make those encounters as humane as possible. Noël got closer to the person-to-person scale, including individual examples, and discussing several issues that affect the quality of the encoun—ters between patients and healthcare providers, that often happens in situations of stress. How—ever, for practical reasons, related to Dr. Brito's availability, and due to the interest in broadcasting Dr. Zeltner's lecture in the evening to facilitate public access, his lecture took place after Noël's, and Brito's lecture was held on day 2.

The Working Groups

There were 3 Working groups that met for 4 hours to elaborate on the topics presented by the lecturers who made in-person presentations. The working groups were moderated by the keynote speakers supported by a colleague. The moderators developed an agenda and led the discussions on day 2. They pre—sented their recommendations to the whole assembly on the morning of day 3.

WG1,«Improving Our Environment: Exploring the design/health axis,» was led by invited speaker Angela Mazzi with the support of Jan Eckert. Participants were Klazine van der Horst, Helle Wijck, William Fuhrer, Naïg Chenais, and Minou Afzali (50% of the time).

WG 2, «Make your magic: Can designers foster caring between patients and healthcare providers?»,was led by invited speaker Guillermina Noël, with the support of Tamara Jeggli. Participants were Anjali Josef, Ruth West, David Wollschlegel, Minou Afzali, and Arne Scheuermann (Afzali and Scheuermann 50% of the time).

WG 3, «Love is at the Center of Health Care.» Was led by invited speaker Thomas Zeltner, with the support of Thomas Abel. Participants were Evelyne de Leeuw, Debajyoti Pati, Julia Rehsmann, Sabine Hahn, Deane Harder and Arne Scheuermann (50% of the time).

4_Biographical notes
Speakers (in alphabetical order)

Juan P. Brito, MD, MSc, is an endocrinologist and Professor of Medicine at Mayo Clinic in Rochester, MN, USA. He is the director of the Shared Decision-Making National Resource Center at Mayo, the Quality Chair in the Division of Endocrinology, the principal investigator at the Knowledge and Evaluation Research Unit, and a guideline methodologist for the Endocrine Society. He was also the director of Late-stage Translational Research at the Mayo Clinic Center for Clinical and Translational Science.

He is the principal investigator of two RO1 grants from the National Institutes of health (NIH) and co-investigator of multiple grants from the Agency for Health Research and Quality (AHRQ) and the Patient-Centered Outcomes Research Institute (PCORI). He has authored more than 200 peer-reviewed publications and several book chapters. Dr. Brito focuses on the generation and synthesis of knowledge and its translation into practice through the design, evaluation, implementation, and sustainability of patient-centered interventions, such as shared decision making, and their impact on patient-important outcomes.

Angela Mazzi, FAIA, FACHA, EDAC, is a Principal and Senior Medical Planner at GBBN Architects where she practices primarily out of the Cincinnati, OH office in the USA. She has a BArch Degree from Carnegie Mellon University and a MArch Degree from the University of Arizona. Her research on salutogenesis and socio–cultural contexts provides perspective on how culture reflects in architecture and user experience. Since 1995, she has been an advocate for good design as essential to quality of life, with emphasis on urban impacts, user needs and community interaction. Angela Mazzi is a Fellow and Past President of the American College of Healthcare Architects, a Fellow of the American Institute of Architects, and 2023 President of its Cincinnati Component. She is also the founder of Architecting, a community consisting of a podcast, online learning, and weekly clubhouse room «Architects as Healers: Buildings as Medicine.» Her research linking wellness to design has been published in many healthcare journals and presented at national and international conferences. She is a peer reviewer for Health Environment Research and Design (HERD) Journal, and Academy of Architecture for Health Journal, and 2022 recipient of the HCD10 Top Architect Award. https://healthcaredesignmagazine.com/trends/the–hcd–10–angela–mazzi–architect/

Guillermina Noël, Dr., is a design researcher and educator. She is the Head of the Bachelor of Design Management, International at the Lucerne University of Applied Sciences & Arts in Switzerland. Prior to this position, she was a designer at the Faculty of Medicine & Dentistry, University of Alberta, Canada. Guillermina applies a beyond human-centred and evidence-based approach to design. She works with multidisciplinary health teams to improve care practices (Quality Improvement) or transferring and implementing health research into practice to influence everyday decisions (Knowledge Translation/Adoption of innovation). In addition to other publications, she is the editor of Volume 6, issues 1 and 2, of She-Ji, The Journal of Design, Economics and Innovation, on design education.

Guillermina Noël is a member of the Competence (Research) Centre for Design & Management in her university. She is currently interested in the improvement of design education, locally and internationally. She is also co-founder and Director of the Health Design Network; a platform to enable health design professionals to exchange knowledge. The design process is conceived by her as a continuing series of steps to gain understanding and inform action. In design one does not only iterate ideas and prototypes, most importantly, designers iterate their perception and understanding of things: situations that require change. She believes that in design we learn about the world through action and through action we change it.

Daniel Christian Wahl, Dr., holds degrees in Biology (BSc. Hons., Univ. of Edinburgh, 1996), Holistic Science (MSc.,Schumacher College, 2002) and a PhD in Design (Univ. of Dundee 2006) on Design for Human and Planetary Health. He lives in Majorca where he helped to set up SMART UIB (Sustainable, Multidisciplinary Applied to Regenerate and Transform / Universidad de las Islas Baleares) and works locally and internationally as consultant, educator, and activist. Among his clients have been Ecover, Forum for the Future, Camper, Balears.t, Save the Med, Lush, UNITAR, UK Foresight, Future Stewards, and many universities and NGOs. He served on the academic working group of the Global Ecovillage Network and has been linked to GEN (A Global Hub for Environmental Governance, Geneva) for almost 20 years.

Daniel Wahl has worked closely with Gaia Education since 2007 and contributed to the development of their Design for Sustainability online course and co-authored the current versions of all four dimensions of the curriculum. He also wrote the content and developed the concept of Gaia Education's SDGs Flashcards which with the support of UNESCO are now translated into 7 languages. His 2016 book Designing Regenerative Cultures has helped to define the field of regenerative design and has been translated into 8 languages so far. In 2021 the Royal Society for Arts, Manufacture and Commerce — founded in 1754 – awarded Daniel Wahl with the Bicentenary Medal for «an outstanding and demonstrable contribution, through ... design practice, towards an equitable and regenerative world.»

Thomas Zeltner, Prof. Dr. is a Swiss physician and lawyer. He is the founder and chairman of the WHO Foundation in Geneva. The WHO Foundation is a grantmaking organization with the objective of addressing the most pressing global health challenges of tomorrow by raising significant new funding for WHO from non-traditional sources.

Dr. Zeltner is professor at the University of Bern, Switzerland, in Public Health. He chairs the Swiss Research Institute for Public Health and Addiction (Zürich) and is President of the UNESCO Commission of Switzerland. He advises the Swiss government in the implementation and future development of The National Health Policy. He is also the Vice Chair of the University Council of the Medical University of Vienna. He has recently been appointed to serve the Swiss Red Cross as next president.

From 1991 to 2009 Thomas Zeltner has been Secretary of Health and Director-General of the Federal Office of Public Health of Switzerland, the National Health and Public Health Authority.

As Director-General of the Federal Office of Public Health of Switzerland he was a key figure in Swiss health policy, and instrumental in fostering health promotion and disease prevention. He has presided over changes to transform the regulated market model of the Swiss healthcare sector into a more value and public driven health care system. Prior to these functions Thomas Zeltner was head of the Medical Services at the University Hospital in Bern (Switzerland) and held various academic positions in Switzerland and at Harvard University in Boston (USA). Dr. Zeltner is an Advisor to the Swiss Centre for Design and Health.

Working Groups co-moderators
WG 1: Jan Eckert (with Angela Mazzi)
Jan Eckert is Head of Living Lab at the Swiss Center for Design and Health —— Switzerland's national Competence Centre at the interface between People, Healthcare, Design and Architecture. Before, he worked as Head of the Design Unit at the University of Gothenburg, Sweden. In Switzerland, he has been Head of the Master's Programs in Design, Service Design and Digital Ideation at Lucerne University of Applied Sciences and Arts; Senior Researcher at Lucerne's Competence Center for Typology & Planning in Architecture; Senior Strategy Consultant at Mint Architecture in Zürich, and Interior Architect both in Switzerland and Germany.

He holds a PhD in Design Sciences from the IUAV University of Venice, and an international Master's Degree in Interior Architectural Design from the University of Applied Sciences in Stuttgart, the Edinburgh College of Art and the University of Applied Sciences and Arts of Southern Switzerland. Before, he studied Interior Architecture at the University of Applied Sciences in Stuttgart and at the École Nationale Supérieure des Arts Décoratifs in Paris.

He was a lecturer at the University of Gothenburg, at the Lucerne University of Applied Sciences and Arts, and at the University of Applied Sciences and Arts of Southern Switzerland, a visiting lecturer at IUAV University of Venice, at the Berne University of the Arts as well as an invited lecturer at universities in Argentina and Turkey.

WG2: Tamara Jeggli (with Guillermina Noël)
Tamara Jeggli is a Swiss, recently graduated, Design Manager of the Lucerne University of Applied Sciences and Arts, and considers herself a designer at heart. Having implemented her knowledge in visual and innovation design, she thrives to transform situations by approaching complex problems from a systemic point of view. As a volunteer with the Youth Red Cross, she aims to support the humanitarian sector and shows interest and passion in continuing her career in the social and health sectors in the coming years.

WG3: Thomas Abel (with Thomas Zeltner)
Professor emeritus; Institute of Social and Preventive Medicine; University of Bern, Switzerland. Thomas Abel is a Medical Sociologist and Public Health expert with a focus on structure—agency perspectives, social stratification and inequalities in health and health behaviours.

He was Professor for Health Research at ISPM, Bern, Institute of Social and Preventive Medicine, Faculty of Medicine, University of Bern, Switzerland, from

1995 to 2022. Prior to his appointment In Bern, he was Prof. for Public Health and Epidemiology, Dep. of Medicine at the Ludwig–Maximillians–University, Munich, FRG (1993–95), Lecturer and Research Assistant in Medical Sociology, Dep. of Medicine at the Philipps–University, Marburg, Germany (1986–93) and Teaching and Research Assistant, Dep. of Sociology at the University of Illinois, Urbana–Champaign, USA (1984–86). His academic degrees include a Habilitation at Philipps–University in Marburg (Dep. of Medicine, 1993), a Ph.D. from the University of Illinois (Dep. of Sociology) in 1989, a Master's (1980) and a Dr.Phil. (1984) degree from the Justus Liebig–University in Giessen (Dep. of Sports Science). He has been a visiting Professor at Univ. de Montreal in 2005 (Dép. de médicine sociale et préventive) and at UBC Vancouver in 2012 (Dep. of Sociology), and visiting researcher at Stanford Medical School (San Francisco, USA), and Robert Koch Institut, Berlin in 2019.

Thomas Abel has published widely on theoretical and empirical challenges in social science applied in Public Health. As Editor–in–Chief he has led the International Journal of Public Health from 2000 until 2011. He continues to serve as reviewer and consultant for major national and international research institutions and funding agencies.

Symposium Coordinator
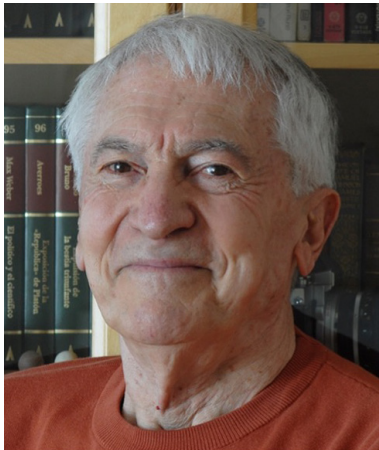
Jorge Frascara is Professor Emeritus and former Chairman, Art and Design, University of Alberta, Canada; Honorary Professor, Emily Carr University; Fellow, Society of Graphic Designers of Canada; Former–President of Ico–D (International Council of Design); Advisor, Doctorate in Design, IUAV University of Venice; Advisory Board Member, Master Design Hochschule Luzern; Inter–national Advisory Board member, Swiss Centre for Design and Health; and Editorial Board Member of Visible Language, Design Issues, and Information Design Journal. He has organized or co–organized 16 conferences on different design issues.

He published more than 90 articles and eleven books, the last in English being Information Design as Principled Action (Common Ground 2015) and the most distributed, Design and the Social Sciences: Making connections (Taylor & Francis 2002). He was advisor to the International Standards Organization (ISO), and the Canadian Standards Council on graphic symbols for public information. He was a guest lecturer in 26 countries and has received honours from eight countries for his socially–oriented practice and promotion of communication design.

Past clients include the Government of Canada, the Government of Alberta, the Mission Possible Coalition (traffic safety), the Alberta Drug Utilization Program, and Health Services in Canada and Italy. He lives in Lucerne, Switzerland, consulting on communication design, mainly for information design, health and safety design, and design education.

5 _Framing the symposium: basic principles
By Jorge Frascara

Debate and conversation
Debate and conversation are two modes of communication. The first is chara–cterized by opposition, and the hiding of differences and nuances within each position. It is centered on winning or losing. The second is centered on under–standing and collaboration, it admits plurality of views and it ends without winners or losers. In all process of teamwork, it is far more efficient to use the conversation model to organize the process of working together. This is the reason why I propose to frame our exchanges in this symposium within the conversation model.

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Yes/and vs either/or: integrating, not opposing.
Coherent with the above, I propose to work toward integrating different viewpoints, seeing them more as complementary than as opposite. This approach will most likely lead to richer conclusions, with different levels of granularity and considering a broad list of concerns.

Collective intelligence / safe space.
I am a convinced believer in the intellectual power of the many as opposed to the few. This is the reason why this is going to be a working meeting, where the function of the speakers is not to demonstrate how good they are (we know this already in this group), and have them talk to us. We need them to open the territory, to explore the limits of current knowledge, to identify where we need to go in order to better develop the potential that a productive relation between healthcare and design can bring to the general well–being of people. This requires the creation of a safe space. This is a space where one can propose ideas even if they are not developed in detail and one is not yet ready to articulate them to the finest point. A safe space allows for the emergence of novelty.

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Planning and self–organization
The symposium has a tentative structure of lectures and working groups, with proposed sections, people, and timelines. However, we will see how things develop. Planning is very useful, but plans should allow for self–organization where the development of interactions require changes to the plan.

From objects to people (objects are means, not solutions)
Designers have moved from a concern with objects to a concern with people.

The design of an object is only a means to meet a need that affects people. We have to understand people's needs and wishes, and create the objects, protocols and processes that consider them but are not dictated by them. In final analysis, the designer must evaluate the information gathered, assisted as necessary in this task, and take responsibility for the final production of responses to the needs addressed. It should not be forgotten that every design idea or product placed in the public space has an operational, a cultural, and often an environmental impact, that the designer must evaluate.

Interaction
All design is interaction, because that's the way people learn and live. Interaction does not happen only in the relations between people and computers. It takes place normally between people and people.

From teaching aids to learning situations
In the education field, we have changed from designing teaching aids to designing teaching/learning situations. The success of a learning experience cannot be trusted to the design of a teaching aid. The whole activity must be planned so that the teaching aid contributes its best to the experience. Many details enter this terrain. The teacher's actions, the student's actions, and the environment in which the intervention occurs, all contribute to the learning event and must be seen as part of the pedagogical design problem. This intervention is not only intellectual, but also emotional. We know that people learn better when they want to learn. We should think not only in cognitive terms when designing teaching aids and situations, but also in motivational terms. The material and the plan of how to use it should both motivate the teacher to teach and the student to learn.

Something similar affects the working environment. We have moved from the design of workstations to the design of work. Despite all we know today about ergonomics, it is not possible to invent and design the perfect chair on which a person could be sitting for eight hours a day, five days a week, without becoming physically fatigued in one way or another. It would be wiser to design a work pattern which, including the design of furniture and tools, would be centered on the design of the activities to be performed. All this of course, define the design problems as interdisciplinary.

Working approach and operational aim
The symposium is to be a working meeting. The main idea is to develop recommendations for future research and action by the SCDH. This will be done in a dialogical way. The roles will be fluid, where problem identification,

problem analysis and proposed responses would be conceived by everybody present. In the end, the collective hope is that there will be material to work with, and we all will be better informed than before about the future potential of the present moment, based on the possibilities opened by an intense collaboration between professionals in both design and health.

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6_The Presentations

This section contains transcriptions of the lectures and conversations, which took place during the two days at the SCDH. The texts that follow have been edited to improve readability. They are not a verbatim transcription of the recordings.

Video recordings of the symposium's lectures can be viewed at: https://vimeo.com/scdh/

6.1 Daniel Christian Wahl
Regenerative Design for Human and Planetary Health, an interview by Jorge Frascara

Introduction by Jorge Frascara

Thank you for making yourself available even if it is in digital fashion. Your book, «Designing Regenerative Cultures» focuses on regeneration instead of sustaina‐bility. Most people who are aware of the environmental crisis are more familiar with sustainability than with regeneration. How would you define the difference between them? Are they opposite, complementary, or how would you see their relation?

Daniel Wahl 1:06

I want to stress that it's not a shift from sustainability. So old fashioned knowing will have to do with regeneration. We need to anchor regeneration as a fun‐damental process of life. In life, regeneration is one of the driving forces. You are not the same person you were three weeks ago. Many of your cells have regenerated. When you break a bone, it regenerates. Life moves as a planetary process through continuously regenerating the actors, the expressions of life as a planetary process. Life moves forward as a planetary process to continuously regenerate itself. And only when we see that, can we also understand ourselves not as a species that now suddenly realizes that is destroying the planet, but one that has a new strategy: regeneration. As a species, we wouldn't have evolved if we hadn't been part of regenerated ecosystems, from what we have knowledge of the world's real existence. The planetary biosphere is a map of the living. We used to inhabit these river systems as expressions of values, as we call them today. So, since this turbulent generation that is starting to take over, get a lot of traction in the world, unfortunately, many of the people who are jumping on the bandwagon are selling it just like they used to shift from whatever to lean, to start, to circular, to sustainable. It's not just another adjective. It's a fundamentally different way of working. But that doesn't mean that sustainability is not still a really important goal. So please don't understand regeneration as the opposition to sustainability: it is coming home to a new way

of perceiving the world and our role in it. It makes the way we go for a sustainable and regenerative future fundamentally different.

Jorge Frascara 3:33
Okay, thank you, that's quite clear to me and to everybody here. I have another question: Your book offers several series of questions connected to many topics relevant to regeneration. My guess is that, based on their possibilities for action, engaged readers would choose the questions to address. But, given the number of questions to consider, this can be a bit overwhelming, and for some, even paralyzing. In the context of an organization like the Swiss Center for Design and Health, which topics appear to you as priorities to address, in terms of action or research?

Daniel Wahl 4:24
Now I digress a little bit, but before that question, because I think it was Einstein who said, «Just because we tried to ignore the complexity of the world it is not going to go away.» Meaning that our current academic process of specializing in different cycles and compartmentalizing a fundamentally interconnected process that is living, transforming the biosphere, doesn't mean that you or I like this approach of only learning within the silos. It seems that complexity has made us lazy in the way we understand our participation in it. And so, we get that feeling of overwhelm when somebody tries to map out interconnected issues that we actually do need to address. I finished my PhD in design for human planetary health 16 years ago. At that point, there wasn't a planetary Health Alliance that now has, I think, 270 research institutions and policy centers around the world, then, in 2001, there were 15 to 17, to which the Rockefeller Foundation and the Lancet, commissioned the so-called planetary health commission to do some work on the link between health policy, population health ecosystems, health, and planetary health... That's precisely what I was working on my PhD. When we were working on sustaina- bility, what we were trying to sustain or regenerate, because we had destroyed it fundamentally, was planetary health. And the only way to restore planetary health is to fundamentally redesign how human beings live on this planet. We have created a fundamentally degenerative civilization, in the amount of energy we use, the amount of resources we use. And on top of it, it is obscenely unequal. The work of Richard Wilkinson in the UK clearly shows that people who are poor are much more likely to have all sorts of illnesses. And so, inequality, and even the need to climb up the social mountain and compete in this current zero-sum game economic system, drives people into illness. All the questions in the book are important, and they are just the tip of the iceberg.

We need to really learn how to understand our participation in this living complexity in a way that every single action every day relates to our current and future health. And that's it, I think, with regard to the Swiss Center for Design and Health: the reframing of understanding of what health actually is, is the first priority for them doing a different type of design intervention. As long as we have no public understanding of health, or health is understood as some form of perfect state, of which we fall because of some kind of motive, then we try to look only at symptoms of disease. And then we try to treat these symptoms to fall back into this previously had perfect state of health... This is what is commonly called a pathogenic approach to health. Ill health comes from a pathogen. But a salutogenic approach to health says that because we're nested in this planetary system, to improve it is a positive, continuous, regenerative process moving into the future. Whenever you have an illness, you don't fall back into the same state before that illness, even if your bone heals, it's still a different one, it's actually stronger at the point where it healed. Or if you have contracted a virus, that virus actually changes, possibly, you get healthy, but your body remembers it. And so, it's not that you fall back into health, into the same state, but you are continuously evolving. And this approach allows us to say that we need to create healthy environments. And these design interventions happen at all points from the materials we use. So basically, green chemistry and material science are a health intervention. If you have toxic paints inside a building that has heat recovery, and air circulation, you accumulate more and more of these toxins, and basically, it's a toxic environment. Last night, I had to sleep at a hotel in the Zurich airport. The whole bedlinen smelled of or felt of this fire retardants that they are legally obliged to use. Those kinds of things are just ludicrous policies, because in the long run, they cost a lot of money to public health. There are plenty of points of intervention for designers to improve health, from product design to the billions that live in the settlements, we live in the whole field of biophilia. Now there's a great report called The Economics of biophilia, that was published quite a few years ago by Terrapin Bright Green. They looked at the retention times in hospitals, based on how much access to living in nature patients had while they were in hospital. They found that access to living in nature reduced stay time significantly. So really, environmental health is at the center of the sustainability conversation. It's the holistic integrator, an emergent property, at scales, from cell to organ to individual to family, to community, to place, to region and planet. And, unfortunately, I can't just give you the five research questions, we need to learn how to work with that complexity and understand that designers design for health basically, intervening across all scales, from health policy to material science.

Jorge Frascara 11:38 (beginning of clean recording)
Good, thank you very much. One of the concepts that stayed in my mind after reading your book, is the importance of focusing on "the future potential of the present moment." Is there a way to improve one's ability to extend the range of possibilities of the present moment? That is to see it in a way, something that hides, or includes affordances that we don't see that easily?

Daniel Wahl
Well, this question kind of touches on one of the fundamental differences in the way that we've dealt with issues in the sustainability approach, which is normally very akin to the allopathic, the pathogenic approach to health, which means you see problems, you see symptoms, and then you throw the might of science, and siloed disciplines onto defining these problems and symptoms evermore in the abstract. And you try to globalize in order to get an angle on that. So, you see whether the problem shows up in different places. But as you do that, it gets more and more abstract. And then we try to design solutions to these abstract problems. And we have a hackathon. And then we bring in the angel investors that listen to the solutions. And they say these three solutions are wonderful, we're going to put a lot of money on the table, and we'll try to scale them up. And then when these abstract solutions that were responses to a very abstract, non-contextualized, non-specific problem definition, are brought back into the specific context of place and culture and people don't fit in, we're surprised. And we keep doing the same pattern for 50/60 years with regard to climate change, environmental degradation and those issues. But we were not succeeding. However, if you flip the approach to handling complexity, and try to deal with this internally connected nested wholeness of which we are expressions, science actually teaches us that complex systems are fundamentally unpredictable and uncontrollable. So basically, we will never know and have certainty about the whole system. We can only ever predict and control within very limited time and space scales. And there will always be surprises. So, one other way is almost like a Kuhnian Gestalt switch:

Kuhnian Gestalt switch

It's a fundamentally different way of approaching the same thing: our parti‐ cipation in dealing with that wholeness is to say, let's stop abstracting and finding abstract solutions to abstract problems: let's meet complexity head on. But make it handleable because we focus on place on a specific context on a locality or a bio region, or river system, because those are the kinds of levels of scale where we can look at how all these issues that we call problems normally show up in the specificity of that place. But in doing so, we look at a specific hydrology, geology, history, population, diversity of people and plants, and bio productivity, and rainfall and climate. And if we try to globalize that and find solutions we'll get lost in it. But if we handle the unique conditions of place, and become generalists and holistic in understanding them, at the population level, well, science and design interact by design, helping science to communicate the detail of place to the people living in that place. So, when we become literate of our bio regions again, we can work with their potential. And that's the future potential of the present moment. This is the big misunderstanding of how people even talk about regenerative cultures now that they're presented as some kind of future utopia, that would be nice to get, because then maybe we have a chance of surviving the coming decades of climate change, and envi‐ ronmental systems collapse, and economic systems collapse. But the reality is that regenerative cultures are already here, all around us. Because we are life. And because we, in our evolutionary journey exhibited the capacity to increase the conditions conducive to life, we're actually still doing it; just our cultural narrative looks at all the problems instead of the millions of collaborative actions that happen every day where people care for the local place, or the single moms or the teenagers that have difficulties with dropping out of school, or the local ecosystem, restoring the local forests. All these are actions that are actually regenerative and salutogenic in a particular place. And to make a bow to it, designers in a center focused on health should really dig deep into the spe‐ cificity of a place and a culture, and co‐create solutions with that culture in context, and not sit in a lab and come up with something fancy that they can try out in a few hospitals around Switzerland and then export to the world, because that's not going to work.

Jorge Frascara 17:39
Okay, thank you very much. I would think that it is true, that it's impossible to foresee and plan with certainty, any action, hoping that sites are going to deve‐ lop the way one wishes that to happen. But I think that there would be a possi‐ bility, if we were more aware and trying better, to avoid harm, as an industry, as a corporation. As we all know, the mega industries are extremely powerful, richer than many countries and have a tremendous influence on the way in

which things are done. And many times, technologists contribute to continuing doing things that are harmful. So, if there were a possibility to change that situation in some places (and I know that in some places harm is being reduced), do you think that it should be part of the education in any profession that deals with the making of things, to introduce a higher consciousness about the medical principle of do no harm?

Daniel Wahl 19:37
But once we have a holistic, dynamic, complexity–based understanding of health, then we actually realize that pretty much every action we take every day affects our health, community health and planetary health. And particularly for designers or engineers they should just like for medics, adhere to the Hippocratic Oath, do no harm. But how do you actually design something with the certainty that it won't do any harm? If you're nested within a system that you can't predict and control, it's the kind of slightly blind arrogance and belief that we have in the power of technology that makes us think we could ever do that? The reason why we need to come back home to place in bioregional patterns of meeting our needs, is also because at the local and regional scale, the feedback of our actions and proposed solutions is quicker. And if we, through education, build a capacity of constantly seeing any kind of solution, any kind of delivered outcome of design, as a prototype, as something that we know, meeting with the best of intentions the situation at one point, we need to be aware that conditions might change. On the one hand, that way of doing might no longer be appropriate and that's that. But on the other hand, the bigger kind of technological superstructure that is currently so powerful, seems to be dictating the narrative of where humanity needs to go regarding AI, robotics, and all that. That techno–fantasy, that utopia that we are currently living in, doesn't pay attention to the fact that we're running a civilization already. And this is just mainly a small proportion of humanity over consuming rather than all of humanity being at that level, that is four or five times using as much energy at every second of the day, as we can generate from current solar income, wind, and marine currents, meaning, the future has to be one of using a lot less energy. The other thing is that the minerals and raw materials that would be needed for the current techno fantasy Green New Deal transition to a high tech, sustainable future, are also limited. And what we now have very clear is that to get half of those minerals, we would all have to increase mining to make this transition. But half of these minerals lie on the indigenous owned biodiversity hotspots. There's no coincidence that the biodiversity hotspots of the planet, are those small corners of the world where indigenous peoples are still living as regenerative expressions of place. If we mined those biodiversity hotspots in a

process that destroys them, then we would have created a civilization without a viable biosphere. And that's not salutogenic either. So basically, as we take that responsibility you're talking about, we need to, again, come back home to place and look at how would we meet the coordinates of a local and regional population within the energy and material limits to a large extent of that bio region, and then have a nuanced conversation around what kind of high technology would enable the regional regeneration, in a future that is more equitable and regenerative?

Jorge Frascara 23:38
Okay, thank you for that. Another question. You are a designer, a scientist, and an environmental activist. I see another issue to face: how can one promote the implementation of an approach to life that is more socially and environmentally responsible, one that foregrounds collaboration instead of competition?

Daniel Wahl 24:10
Well, I mentioned I think, I started as a biologist, and I saw firsthand in the biological sciences, how strong in the 1990s the misunderstood Darwinism of competition for scarce resources and individual success was the driving force of evolution. Even through the work of Richard Dawkins into genetics, and then, like The Selfish Gene story, we just had a fundamentally mistaken narrative of how to understand the evolutionary process, because there are two ways of focusing on life: you can see life either as a planetary process that expresses itself through species and individuals which are like the fruit bodies of a mycelium mushroom, or you see them just as temporary expressions of life, as a planetary process. And if you look at life in that dynamic and holistic way, then competition still exists, but it's a regulating mechanism that has a fundamentally symbiotic and syntrophic process. But if you flip it down to separating everything into individuals and species, which is a usual way of seeing, we've developed a lot of technology and medicine, and all sorts of things, on the basis of it, but it's only one of the two ways of actually understanding participation. When you focus on that, then you see a lot more competition, because you don't understand how all the other actions that aren't competitive are constantly adjusting how a species sits within its context. The unit of survival in that case, is not the individual nor the species, but the process as a whole. And the role of any kind of life form can be seen as a temporary expression of that larger process that creates conditions conducive to life. What the evolutionary process regulates is that species which fall against that pattern might even do very well, for a few thousand years, like we have done, but then they hit the limits of the overall system being degraded by them. Then the evolution asks them to step

aside and take the path of most species, which is extinction. But we are a relatively young species, and we could come back to a shift of consciousness, if we shift back into understanding like all indigenous people do, that we all are expressions of life, and not owners of it, that we are expressions of place, and not owners of it. If we could understand that the survival of the system as a whole is fundamentally influencing our community and individual health, and our long-term survival, we would create a very different way of interacting with the world. So, this is a coming home to indigenous understanding of partici-pation in a nested wholeness, and at the same time, a bringing it together with the best of modern science, but also having the new awareness that we cannot maintain the high technological civilization we have at the moment. In all aspects of life, you know, that ridiculous overconsumption of digital capacity is actually costing energy and water, which we need for other much more funda-mental ways of meeting needs. And by taking this local, and bioregional approach, we're slowly building a system that makes the old system obsolete. There is no point in trying to transform this techno juggernaut. We can use the best of technology and really localize it. And it's actually those capacities that will help us survive when the current system collapses under its own weight, which is beginning to do all around us. We know that this current system cannot continue because we're way over stretching planetary boundaries. And even on the social and economic foundations, we're not performing well, there is obscene inequality across the world and within almost every nation.

Jorge Frascara 28:38
Which are and where are the gaps of knowledge in your estimation? That is, where should our research efforts be directed? And: where do you see the gaps of action? Or just, what is needed to implement the knowledge to take action? Is it political agitation, is it in general education that is missing? How do you see that?

Daniel Wahl 29:41
I think that we have a lot of knowledge, but it's not contextualized. And so, the fundamental shifts, which I just sort of described above, are the two ways of seeing life: either as a planetary process that is fundamentally interconnected, or as a kind of Individual separated species and individuals competing against each other. If we re-perceive our participation in this business of wholeness, and begin to use not only the best of science... but it's not all about knowledge, it's about ways of participation. The union mandala of ways of knowing has analytical thinking as one of the four dimensions, but sensing, feeling, and intuiting, which are the three ways that we used to use and still use to actually

sense our way, in this participatory process of which we are an expression of, have been amplified, by the way we educate ourselves. And so, in many ways, just as the flip from trying to solve problems to paying attention to complexity in a specific context and place, allows us to move from problems to potential, it's also more a shift in re–perceiving the knowledge we already have. And contextualizing it to place, and paying attention, this is where we probably have knowledge gaps: is that people don't really know their places anymore. And that's why they also don't care for them as much. The minute you really deeply know a place and understand its patterns, and constantly see, like, for example, in Switzerland, with the current weather, the brown meadows that are going up to 1000 meters, that's a feedback signal showing that there's a planetary health emergency with climate change. And by making people understand those kinds of patterns, again, not just oh, yeah, it's a bit hot, so the meadows are brown, they will through that understanding shift their way of participating in it; but only if we, through design and appropriate, localized regionalized technology, give them an option to actually participate in this different way of being in the region. That kind of process is beginning to happen everywhere, even in Switzerland. I was just recently at an event where a group of people are starting to look at the different areas of Switzerland, through the bioregional lens, and seeing how they can create climate resilience, and ecosystems health at that specific scale of local region and community.

The presentation ends in minute 32:47 of the recording. Questions from the floor and the lecturer's answers can be heard in the recorded video and read in the transcript column of the video. Apology: there is an echoing that hampers understanding of the speech until the minute 11:38 (the sound is better when heard with headphones). It was not possible to clean it up. We hope the transcript here and in the Vimeo column helps following the interview. https://vimeo.com/scdh

6.2_Thomas Zeltner
Love is at the Center of Health Care

Thank you for giving me the floor to share some thoughts with you. And glad to talk about a quote which struck me deeply when I read it the first time. It is a quote from Don Berwick. «Love is in the center of healthcare.» Don Berwick is the former Administrator of the Centers for Medicare and Medicaid Services (CMS) in the Obama administration and an eminent American Public Health Specialist. People think healthcare is mostly about bringing some technologies, some support to patients. We always say, yes, the patients and their families are in the center of health and healthcare. As Daniel Wahl said this morning, we need healthy environments to support people's health. I will get to the definition of what a healthcare system should provide. I was involved in these discussions at the World Health Organization. And it was not evident. And for those coming from the US, it's not evident even today. Health systems and healthcare systems have 3 goals.

- They are here to improve the health of the populations they serve. That seems like the most normal thing. Here is someone who needs help, and we try to improve her/his health.
- The second one, and that was a long debate: who is providing financial protection against the costs of ill health. In many parts of the world we say, those who fall ill should not go into bankruptcy because of illness. We stand together. We help each other and we help supporting their financial needs. I think it is really a major step forward in human civilization saying that ill health is something that can happen to every one of us.
- And we need to protect each other, this goes right in the heart of design: the system should respond to the expectation of those who use it and protect their privacy.

I will talk first from the perspective of patients going to the system, then I will talk about the needs and expectations of healthcare professionals, and then

come to the question: what brings actually the two worlds together? And the answer is: it is love, it is a relationship of common understanding, but let me go through it. Let's think of what patients expect if they go to a hospital. To begin, there are basic needs: physiological needs, like food, water, light, rest, etc. That's, of course, what patients want. Secondly, there is a need for safety. And then there are psychological needs, belonging, feeling that you're not lost, that you're not just a badly functioning machine, but that you're someone who is loved. That's the kind of pyramid of needs human beings have.

In the healthcare sector, we have the healthcare providers, the patient and the family and friends. They all have their basic need. What you get normally is all the physiological need like nutrition, fluids, appropriate room temperature, etc. And then you need physical safety. And all of that is the promise of the system; you'll get that. One of the paradigms of modern healthcare is: Never get patients disrupted from their family members, they should have access to their family members day and night. Normally, there are visiting hours and then please go home. And so, there are still areas where we could certainly do better. And then there are many questions concerning self–esteem. How does a person with a serious condition (and let's not talk about a mental health disorder, like depression) go home with the feeling of low quality of life and quality of person? What are the patients' needs? First, for me, it is a design for better patient safety. Shame on us. You probably know the data. We have good data from the US, we don't have good data from Switzerland. But the third most common cause of death in the US is the consequence of an injury you acquire when using the medical system. The most frequent cause are cardio–vascular diseases. Second is cancer. Third, is causes or death caused by the medical system. And we have so many areas where we can improve patient safety, it's (also) a matter of design. One of the most risky things being in the hospital is being transferred from one department to another. Because so many mistakes can happen in this process. When a doctor or a nurse report to one another, then the medication can be given twice, as Noël said this afternoon. We can certainly do a lot better about respect, privacy and dignity of patients, not let patients wait in the hallways, or talk to them in the hallways where everyone is passing by. These are questions of dignity, that need to be solved.

And finally, of course, health promotion and health literacy are areas that with better design can be brought to life. Patients go to an institution because they need to meet other people, the health professionals. Of course, healthcare professionals have physical needs too: they need equipment, they need infrastructure, they have safety needs, they need clear instructions, clear roles and responsibilities. They need to feel that they are part of a team. They need

collaborative communication. Often, we are not doing a great job in this respect. We should be looking at what can design do for better teamwork, particularly when it comes to multimorbid patients. We're a little better now with cancer patients, where we have cancer panels where all the doctors and nurses sit together and look at a patient as a team, but in many other areas of healthcare we are not there. We could do much better when it comes to teamwork.

The question of increased job satisfaction to prevent burnout is a very important topic too, these days. I sometimes say that for the time being we might find the money to run the health system in Switzerland, but we don't have enough people to do the job. And we're losing more and more of our health professionals because they feel burned out. Rather than letting this happen we should be looking for better design. And finally, we need to look into better work–life balance and to career development for healthcare professionals. All that can be done and must be done. Because the shortage of healthcare professionals will not go away in the next couple of years.

Many of our healthcare institutions are also teaching hospitals. And most hospitals don't look into how much these teaching obligations disturb patients. You might see a patient lying there, and a whole bunch of doctors around. Very often, as a patient, you feel like a piece of meat in a bed. And our hospitals hardly ever looked at how to design their role as a teaching hospital properly. They may be well equipped to take care of patients, but they are not taking their role as a teaching institution seriously enough. So, whose needs come first? How do we build improvements with the limited resources and time we have? What do we do first? The most common complaints of patients in healthcare are long waiting hours and the feeling of not being heard. The same is true for family members. On average, doctors talk to family members about three minutes during the entire stay of a patient in their institution.

If you look at doctors, the highest problem we are seeing right now is the workload in hospital: 50% of the staff is close to burnout and/or wants to quit. That is not a sustainable situation. How to deal with that? Of course, if we had more money, then we could invest into more staff. Unfortunately, one would not always find the staff. Certainly, digital technologies can help in all kinds of situations. I think the key question is being a good leader in the hospital. We will hear tomorrow from Mayo Clinic. I visited this clinic several times and was always impressed by the leadership of this institution and how much they care about what's happening there.

As indicated before, Dr. Zeltner's presentation took place after Noël's, due to the interest in broadcasting it for public access, hence his reference to her. However, in this publication the sequence follows the logic of the symposium: going from the broadest view of the healthcare issue (environmental health) to the one focused on the caregiver and patient encounter.

But whose needs come first? I think maybe this is not the right question. Remember what Don Berwick taught us: "I think healthcare is more about love, than about most other things. If there isn't at the core of these two human beings, who have agreed to be in a relationship, where one is trying to help relieve the suffering of the other, which is love, you can't get to the right answer here.»

So, I think he touches here something which I would just want to underline: at the center of health care is a relationship. And at the very core, there are two human beings: someone who says I need help, and someone who comes and says, I'm ready to give you this help. What this relationship needs, is first and foremost trust, trust that he/she is recognized as a person. Trust into the healthcare provider that his advice is up to the standard, and that there is respect on both sides. And loyalty. And there is another element that we need to take care of: joy in work. If you know that you, as a healthcare professional, have the feeling that you are doing something in a relationship, then you feel that this is giving you a lot of satisfaction, and you're not just adding up hours and hours.

If you look, then, what are the things that may make this relationship difficult? It's two things, it's time or the lack of time. And the second thing is space, very often patients need privacy, they need the possibility to speak out their concerns. This may be difficult in emergency departments but in other situations this should be guaranteed.

Many doctors and nurses complain that they have too much of an administra−. tive burden. Therefore, we need design systems that give more time for fruitful relationships. I continue to be convinced that technologies can help a lot in this area. Finally, design that allows for fruitful interactions and relationships. And that is, I hope, what we will be discussing tomorrow in the working groups.

I tried to give you some ideas, where design and healthcare need to work together. The first thing I would want to work on, is to increase patient safety. Because we're all here not to harm patients. And we do it way too frequently. That should not happen. The second thing is to give space for fruitful relation−ships, to give people who come to you for help have the feeling of being wel−come. And that they get in touch with a human being who is concerned about what they are going through.

Let me finish with that picture here. I don't know why it always touches me to see this woman there in her bed somehow isolated, waiting. And you almost

feel out of this picture. I think we all are here to help suffering human beings like her. Thank you.

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The presentation ends in minute 27:42 of the recording. Questions from the floor and the lecturer's answers can be heard in the recorded video, and read in the transcript column of the video. https://vimeo.com/scdh

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Zeltner and Frascara during the Q&A session after the presentation

6.3_Angela Mazzi

Improving our Environment: Exploring the Design/Health Axis

Presentation summary

Causes of dis-ease: External and Internal Impacts create stress which diminishes health

1_External Impacts

- The Exposome
    - External Environmental conditions
        - a)Green space
        - b) Light
        - c) Red List Chemicals
        - d) Noise
        - e) Air Quality
        - f) Traffic
        - g) Weather/Climate
    - External Socio-Economic Conditions
        - a) Social connection
        - b) Education Level
        - c) Housing stability
        - d) Diet
        - e) Financial Stability
        - f) Safety
        - g) Access to reliable transportation

2_Internal Impacts

- Negative aspects of the exposome impact internal bodily processes
    - Aging
    - Epigenetics
    - Inflammation
    - Metabolics

- Gut Microbiome
- Fertility
- Stress is a key factor in disruption of homeostatic functional equilibrium
  - Stressors create crisis within an individual and induce homeostenosis
    - a) Short term effects: Elevated blood pressure, elevated blood sugar, muscle tension, high cortisol levels tell our body to hold onto weight.
      Higher level thought and memory are suppressed
      Immune system is suppressed
      Inflammation occurs in the cells
    - b) Long term effects
      Higher incidence of mental illness: Anxiety, depression PTSD
      Higher incidence of heart disease, cancer, diabetes, obesity, autoimmune disorders
      Genetic changes impacting telomeres and cellular structure
      Generational trauma
  - Chronic stress creates an allostatic burden which makes it difficult to restore homeostasis
  - Someone suffering disease and/or high level of stress is more sensitive to the environment than someone who is not
  - If we can induce allostasis via the environment, we can activate the parasympathetic nervous system and place individuals in a restorative state
    - a) Short term effects: slower breathing, more thorough digestion and absorption of nutrients, restful sleep
    - b) Long term effects
      Higher brain function and calm deliberation enabled
      Immune system is strengthened
      Healing and tissue growth

Reverse engineering health: Having external and internal resources maintains homeostasis which leads to health
1_By activating the parasympathetic nervous system through environmental cues, we provide more resources to an individual
- The more resources and individual has, the greater their resilience
  - Economic resources
    - a) Education level

   b) Economic wherewithal

   c) Generational wealth

  – Social resources

   a) Diverse range of services

   b) Culturally competent

   c) Robust networks

   d) Health Literate

  – Environmental resources — where designers can have impact

   a) Supportive and safe

   b) Accessible to places/events and for desired activities

   c) Neutralize adverse climate events

2_Cultivating Resiliency at Multiple Scales

- Human scale — Physical, mental, and emotional interventions at the human scale that improve the mental and physical wellbeing of the individual in the moment
    - Space for respite and recovery
    - Equitable access to healthcare and resources
    - Optimizing for safety and security
- Building scale — Physically built spaces and buildings that improve the social and economic stability of multiple occupants and the surrounding community directly or indirectly
    - Flexibility to adapt to future stressors
    - Using equitable design to increase accessibility
    - Minimizing exposure to external stressors
- Infrastructure – Long term systemic changes to the community's–built environment and networks that improve the socio–economic wellbeing of the community and their social determinants of health.
    - Minimizing impact of future use and growth
    - Providing equitable access to resources for all communities
    - Maintaining systems for optimal operation
- Design implications

3_Salutogenesis: Apply a salutogenic approach focused on alleviating stress and building resiliency by providing an abundance of environmental resources

- Use language that can be easily applied and adopted by designers, planners, architects, clients and the public
- Provide more generalized resistance resources based on five aspects
    - Sense of Coherence (Antonovsky et al) – I understand
    - Self Efficacy (Bandura et al) — I can
    - Biophilia (Wilson et al) — I relate
    - Prospect and Refuge (Appleton et al) — I shelter

– Relaxation Response (Benson et al) — I restore

Resources to cope — we cannot control what stressors people experience before arriving in a space, but by providing generalized resistance resources within the space, we can supplement their resource bank and lower their stress level

1_Design Toolbox based on applying the five aspects of salutogenesis as appropriate for the use and occupants of a space

- Sense of Coherence
    - Analogous mapping
        a) Space evokes a similarity to another type of space with pleasant associations
        b) Meaningful familiarity– order can be established
        c) Multisensory
        d) How to use the space is apparent (affordances as defined by J. Gibson)
        e) Context related to environment is provided
        f) Personalization (Objects, Music)
    - Seeing and Being Seen: Anticipation of path
        a) Highly transparent
        b) Moderately transparent
        c) Mildly transparent
    - Textural/material cues to measure and comprehend scale
        a) Textures/patterns that recede into distance
        b) Horizontal or vertical elements regularly spaced to understand linear perspective
        c) Objects of known size that provide a sense of scale such as trees or furniture
    - Ability to understand time
        a) Views of clocks, calendars or other displays of time
        b) Awareness of time of day and season (views to outside)
- Self Efficacy
    - Choice and control
        a) Variety of activities is supported (Sociopetal and Sociofugal)
        b) Variety of seating is supported
        c) Lighting controls
        d) Sound Controls
        e) Temperature controls
        f) Space can be reconfigured to suit needs by users
    - Wayfinding

a) Ability to see destination or next step in proceeding there

b) Landmark elements help mark the path

c) Cognitive chunking creates multisensory memory moments

d) Entry points are clear

– Hierarchical barrier

a) Minimal barrier such as podium or table

b) High barrier such as transaction counter

c) Staff is behind glass or otherwise physically separated from user

d) Empowerment

– Opportunities to take independent action

- Biophilia

– Access to Nature

a) Outdoor planted space or water feature – measure distance from any given point to a garden or planted area

b) Indoor planted space or water feature

c) Views of nature (garden, green roof)

– Blurring of interior/exterior edge

a) Continuation of materials from exterior to interior

b) Full height glass

c) Continuation of hardscape elements into building

– Access to natural light

a) Sunlight in space

b) Daylighting

c) Color tuned light

d) Diffuse/dynamic light

– Natural/organic forms

a) Natural materials visibly employed

b) Images of nature

c) Patterns found in nature

d) Forms found in nature

- Prospect and Refuge

– Occupying the edge

a) Built in seating along a wall

b) Clear boundaries and borders

– Vantage Points

a) Entry to space is visible from occupant position

b) Occupant has back to a solid form to prevent unexpected approach

                     c) Occupant can see into adjacent spaces
- Social Choice
  - a) Sociopetal
  - b) Sociofugal
  - c) Adjustable for group size
- Focal points for social activity
  - a) Gathering zones
  - b) Activities
  - c) Displays
  - d) Stage or podium

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- Relaxation Response
  - Positive visual distraction
    - a) High visual complexity
    - b) Medium visual complexity
    - c) Low Visual complexity
  - Physical calming
    - a) Ability to engage in repetitive motion activity (rocking, pacing)
    - b) Designated space for calming activity such as dance, yoga or guided meditation
    - c) Ability to find personal space (still contemplative areas)
  - Sound (consonance, resonance, dissonance)
    - a) Quiet space
    - b) Background ambient noise
    - c) Loud, active space

2_Applying strategies

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- Meet people on their own terms — customize the strategy based on user groups
- Understand that change management is an important part of success
- iDevelop cocreation models and rapid prototyping/mockups
- Develop a metric to show how salutogenic properties will be applied
  - Opportunity to develop a graphic way to visualize options or before/after scenarios

Conclusion

Health supporting architecture acknowledges the link between design choices and wellbeing. The analytical description above identifies important conside–rations. These include identifying specific resource deficiencies of stakehol–ders, selectively applying the salutogenic framework, and working together with stakeholders to co–create a solution.

Further information about this topic see: Angela Mazzi (2021) Toward a Unified Language (and Application) of Salutogenic Design: An Opinion Paper. Health Environments Research & Design Journal, Vol. 14(2) 337–349

The presentation ends in minute 32:17 of the recording. Questions from the floor and the lecturer's answers can be heard in the recorded video and read in the transcript column of the video. https://vimeo.com/scdh

6.4 Juan Pablo Brito
Designers and health practitioners' collaboration at the Mayo Clinic,
Rochester, USA. An interview, by Jorge Frascara

Jorge Frascara
In these presentations we collect ideas for how to move this Center in a way that is appropriate for the times. We would like to ask you to help us under–stand in some detail how is the interaction between design and healthcare at your unit in the Mayo Clinic.

Juan P. Brito
When I joined Mayo Clinic around 12 years ago, I stepped into a culture where designers played a pivotal role. Mayo Clinic has a longstanding tradition of collaborating with designers, particularly in user–centered design. It was one of the pioneering institutions to establish an innovation unit focused on patient experience, which is crucial for resource allocation and team development. Designers have always been integral to achieving these goals.

I specifically joined the Knowledge and Evaluation Research Unit, which zeroes in on the interactions between patients and clinicians. Our mission is to under–stand how healthcare is actually delivered. In essence, healthcare isn't isolated dedicated to medication or tests; it thrives in the interactions between humans

during medical encounters.

Working with designers has notably influenced our philosophy. Coming from a research background, my initial approach was heavy on hypothesis testing and understanding the «why» behind problems. However, healthcare issues are multifaceted, involving countless variables like patient conditions, clinicians, and settings. Realizing this, we shifted our approach from solely understanding problems to actively trying solutions. By intervening, we learn what works and what doesn't, which allows us to make progress.

Our team typically consists of a researcher, a clinician, a designer, and a project manager. When a healthcare issue arises——say, a clinician struggles with patient communication——we observe real interactions to identify the root of the problem. These observations are enriched by our multidisciplinary perspectives. For instance, where I might see issues of knowledge translation, our designer Ian Hargraves may point out gaps in situational understanding. These insights help us formulate effective interventions. So, incorporating design thinking has significantly enhanced our research and problem–solving capabilities. It not only boosts user engagement but also helps us develop targeted interventions.

Jorge Frascara
You actually answered two of my questions. So, I'm going now for the third one. In what way do you believe that the contribution of Ian affects the way in which you approach a clinical or research issue?

Juan P. Brito
Ian's involvement has been instrumental in shaping our approach. Let's start with the way we identify problems. I bring a clinical and research perspective to the table, but Ian adds another layer of understanding.

For instance, we once faced a specific challenge in the emergency room invol–ving clinicians and conversations about ear infections. The parents often insisted on getting antibiotics for their children, even though the evidence showed that antibiotics don't offer significant benefits for this condition. Initially, we thought the issue was primarily about communication between clinicians and parents. However, Ian helped us see that the issue was partly linguistic as well.

We used to describe the issue as «otitis,» which is a medical term for ear inflammation. However, parents often interpret «inflammation» as an infection that needs to be treated aggressively, often with antibiotics. Ian suggested we switch our terminology to «ear pain,» which resonated more closely with what the parents were actually concerned about. This change in language refocused the conversation on managing pain rather than on prescribing antibiotics, which

was more aligned with clinical guidelines.

In another context, when it came to developing interventions, our original approach was quite comprehensive. We wanted to cram as much evidence-based information as possible into the tools that clinicians would use in their conversations with patients. Take, for example, atrial fibrillation, a heart condition that could lead to the formation of blood clots. Our initial interventions were dense with information, almost like pamphlets. Ian, however, guided us toward making these tools more supportive of the actual interaction between clinicians and patients.

Ian excels in content curation, which is extremely valuable. Medical evidence is often complicated and not straightforward to convey to both clinicians and patients. Ian has the ability to distill this complex information into supportive content. His work doesn't just aim to transfer knowledge; it aims to support meaningful interactions between patients and clinicians. This shift in focus from mere knowledge transfer to interaction support has been a significant change in our work. It's one of the reasons why our intervention tools have been so successful in clinical trials and in real-world practice.

Jorge Frascara
Thank you very much for your examples. Now I would like to open the floor for the people present here to ask you questions.

Juan P. Brito
Absolutely.

Jorge Frascara
You know, I really appreciate that you were very clear and extensive in describing the interaction with Ian. Yor examples of specific instances made clear the dynamics of this, that, of course, it will change from situation to situation. But somewhat structurally, it will always be something similar. Who wants to ask a question now?

Anjali Joseph
I am Anjali Joseph. I am a professor at Clemson University and a member of the IAB here. The work that you do is really valuable. But even historically, do you know how your unit provides, like how do you justify your presence at Mayo Clinic? And what value? Do they as an organization see? Why do they continue to invest in what you do?

Juan P. Brito

That's an excellent question. Our work is indeed a paradox. Although we focus on aspects of care, care itself is not the core mission of many healthcare organizations, including Mayo Clinic. These organizations are geared toward patient care, but ironically, they often lack the resources to study care in-depth.

We exist within Mayo Clinic primarily as a research group. Our funding comes from governmental agencies and internal mechanisms, which is somewhat unconventional. Typically, you'd expect a research group like ours to be embedded within the practice, to be directly supporting it. However, the appetite for this kind of integration is generally lacking. One reason is that our work doesn't align with traditional billing processes or conventional outcome measures. Care processes and their impacts are often long-term and not easily quantifiable, unlike metrics such as blood glucose levels, which can be measured in a matter of months.

Given these challenges, we've made the deliberate decision to avoid funding from for-profit organizations. We want our work to respond solely to the issues of care, rather than to the interests of a specific company or medication. This decision puts us in a precarious position, as it makes us heavily reliant on grant funding.

Ian plays an important role in this context. He's not just a designer but also a principal investigator for one of our largest grants from the U.S. government. In our collaborative work environment, Ian has had to adopt the role of a researcher to secure the funding that supports our initiatives. This has been a mutual learning experience. While we've gained significant insights from Ian's expertise in design and user experience, he has also had to acquire research skills to function effectively in our setting.

Ruth West 20:41

Hi, I'm Ruth West. I'm also a member of the IAB, and I'm a professor at University of North Texas. My question for you is, can you share more about the roles of your clinician and your project manager in your team? I'm curious about the kind of the connection to clinical or how do you get buy-in from clinicians basically?

Juan P. Brito

That's a good question. Our projects can originate in two ways. The first is through research curiosity within our unit. For example, we might explore aspects of shared decision-making in a specific medical condition. In this scenario, we often have to invest significant time and effort to engage with

partners and convince them that the problem exists. They may not initially see the issue in the same light as we do.

The second, and more successful, pathway is when the problem comes to us directly from clinicians or other healthcare providers. In these cases, we already have one or two champions who are invested in the concept. These champions typically have significant sway with their department's leadership, which is crucial for moving the project forward. Since our work involves direct observation of patient-clinician interactions, having these champions is invaluable. They help us gain physical access to the settings where these interactions occur. Projects that start this way have an almost 100% success rate in terms of producing something that ends up being utilized in practice.

Now, once we've decided to move forward with a project, there are several layers of buy-in we need to secure. The first is from clinicians and healthcare leaders who may question how the project will impact patient-clinician interaction times, overall patient throughput, or adherence to clinical guidelines. To address these concerns, we share data and insights from our past experiences, demonstrating how our tools have positively impacted care.

The second layer of buy-in comes when we ask these stakeholders to try the prototypes with their own patients. Once they see the benefits firsthand, their attitudes often shift.

The final layer of buy-in is from the broader healthcare system itself, particularly when it comes to integrating our tools into electronic health records. This involves liaising with IT groups and vendors. One of the strengths of our program is that we offer our tools free of charge and support their implementation. This greatly facilitates buy-in and has been a significant factor in our success.

Despite this well-honed process, it's worth noting that only about 40% to 50% of our tools ultimately reach the stage of being implemented into electronic health records.

Anjali Joseph
And it's just a quick note, because we are using this abbreviation of IAB, it's an International Advisory Board. So, you know which group we are a part of, officially. Now, the question for you, as a researcher in an innovation unit embedded in a health system: What kind of disciplines or backgrounds is your team comprised of, who do you think you need on your team?

Juan P. Brito
That's a fantastic question. So, they, we, need experience and expertise in

quantitative data. We work with statisticians and more recently with machine learning. So, Artificial intelligence has become also part of the skill set that we have. We have core people working in qualitative research. We have a study coordination. We have project management. And we have the design group. We have of course, the principal investigators, the way works that we will do something that works is that we assembled small teams that respond to projects. And each team has four projects, like a shared decisionmaking tools that support interaction, we have a principal investigator, we have a champion in the clinic, we have the designer, and the project manager. That is a core group. Once things start evolving, for instance, who will do analysis of video recordings, then we bring in some members of the quantitative group, sometimes we need to understand aspects of how the tool impacted other stakeholders. And for that, sometimes we need to interview individuals. And then we bring the qualitative quarry. And lately, we have been working in understanding issues of care within the encounter using artificial intelligence. So now we're working with machine, machine learning experts that uncovered some of these problems in interaction we encountered. Of course, we trained in those machines to do that. But they're also becoming part of the analysis of data that we have. So, it's a multidisciplinary team, that is actually very diverse, not only on the method expertise, but it's very diverse in the way that they think about the problem. We also consider a race and ethnic kind of diversity. We actually have as our core principle to bring a lot of diversity in the background. People who come from different backgrounds, again, not only for research, but also backgrounds that contribute to understanding the problem differently, and the way that we address the problem as well. We used to have a patient advisory group, and it was approached every time that we had a project, but during COVID we had to dismantle it, because it required in-person meetings. Part of our mission is to bring it back to advise us and the projects that we conduct. So, yes, ours is a very diverse group. Multidisciplinary. I will say I am very proud to be in one of those groups.

Anjali Joseph
This is another quick follow up on that one. You mentioned the design group, and there's a lot of designers in this room. So, what does that look like? Who's a designer in your mind?

Juan P. Brito
That's a great point to elaborate on. In our work, the type of designers we collaborate with are mostly those who specialize in user-centered and human-centered design. These designers, like Ian, typically come from an industrial

design background and have training in human-centered design. Their focus is primarily on the interactions between patients and clinicians, which aligns well with our core problem: the care process.

We have occasionally worked with other types of designers, such as graphic designers or web designers. While they contribute to improving the visual aspects or the flow of a tool, their expertise doesn't necessarily help us delve into the nuances of patient-clinician interactions. For those aspects like color schemes or web layout, we often outsource to vendors or partner with other groups that have that specific skill set.

So, in summary, the designers we typically collaborate with are those who understand the complexities and dynamics of interactions between patients and clinicians. Ian is a prime example, and we've also had the chance to work with other two designers who share a similar background in human-centered design.

6.5_Guillermina Noël
«Make your magic.» Can designers foster caring between patients and healthcare providers?

Expectations are important when trying to engage a group of people in a reflection. Titles create them. The title selected has its origin in Alberta, Canada, when I was working with quality improvement processes. There was a committed gastroenterologist that used to come to my office and say, Now, can you «make your magic»? The sentence made me reflect on what was he looking for, and how could I contribute to the colon cancer screening care processes and activities he was trying to improve. I will try to outline in the presentation what is meant by «Make your magic.»

My presentation has four parts: acknowledging the healthcare context, then showing an example working in isolation or relation? Then a second example, Is the problem the problem? Finally, a closing.

Acknowledging the context

Healthcare is not just another service industry. Its fundamental nature is characterized by people taking care of people in times of need and stress (Institute of Medicine, 2001, p. 6).

The awareness of design as a discipline has increased in healthcare. However, there is no clarity about how design contributes to a better quality of care. How does design help improve the life circumstances of a person? We know that life is a process that takes place in interconnected networks. We have learned that wellbeing is a constant dynamic process that happens in the interaction of the person with the environment, whether it being social, cognitive, or natural. So, how do we develop patterns of connections? By pattern, I mean the recognition of unseen interaction links between actions, and reactions of organisms in their contexts and what these interactions create. Do designers create conditions to facilitate the emergence of exchange and conversation? Do we facilitate actions that create new knowledge and mutual learning? How is that we create possibilities for caring to emerge?

First example. Working in isolation, or in relation? Not long ago I had a surgery. It was my best healthcare experience. At the same time, I lived a medical error. A medication was given to me twice, within a time frame of 5 to 10 minutes. We, designers, are always operating as observers. In fact, what I will explain is my experience the first night in the hospital. Two nurses came to administer the drugs to me and take care of me. In that context, several things happened. The younger nurse left. The older nurse noticed that something odd was happening in the corridor, so she left. Then, both came back. In that process, I got twice the same dose of a medication. Shortly I started feeling unwell and having more pain. At that point the physician came with the two nurses and disclosed the medical error. I looked at them and said: «Congratulations. I never experienced before this openness, where healthcare providers came to me acknowledging that an error had taken place.» The whole team was surprised about my reaction. At that moment, I remembered a project by Kaiser Permanente Innovation Consultancy (KP innovation consultancy, 2008), they created a «Sacred zone»a space where nurses get isolated in the moment of preparing medications to administer, and the nurse wears a vest indicating that she should not be interrupted. I was discussing this with the two nurses and the physician, and they became curious about what was my professional background. Saying that I was a designer, made them even more curious.

Hospitals are busy places. Distractions and frequent interruptions are a normal part of the daily environment. Distractions vary, they can be unexpected... my

nurse got distracted, because something was off. Something was not normal. A male patient was in the corridor in the women's hospital. And while caring for me, she left the room, and her cognitive space moved into another caring space, different skills were required, questioning, attending, listening. And when coming back, she was again in a different cognitive space. Distractions in healthcare are not one thing, but many things.

Preventing the distraction might not always be the best action to pursue. Acknowledging distractions and uncovering the unseen interactions between actions, and reactions in contexts, and reflecting about what these interactions create might be valuable. So, when my nurse came back to my bedside, she could have asked herself, «What was the last thing I did?» How do I know? Engaging in a process of confirmation might be necessary. A verification process and a support tool might help. «I got distracted, and now? What should I do?» Did I communicate my previous action to my colleague nurse?

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It would be more useful to expect that distractions will take place. I believe that the isolation proposed by Kaiser Permanente might work in the nurses' office. But throughout the journey of the nurse in the process of caring, different strategies need to be developed: depending on the emotional, cognitive, social and spatial contexts. Non–interrupted attention in the context of caring in busy health environments might not be the best goal to pursue in the fluctuating networks of communication that the human community providing care is engaged in. Caring takes place in relations. So, designers' magic number 1, is questioning what we know, and avoid simplifying realities. This is one of the things that some designers can do: to uncover patterns. To see connections in self–organizing and dynamic human environments. We facilitate conversations

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among teams of providers so that they can create how to respond to distur–bances in their work environment. This helps foster supportive care climates. Some designers can create possibilities for caring to emerge. The following conditions are necessary for designers to contribute: 1: Understanding design not as the creation of objects, but of situations, so that the interdisciplinary collaboration can take place. 2: A team that understands design as a discipline, not as a technique that follows steps. 3: A working space where observation and examination of current ways of practicing is possible. This is a team and space open to reflection and learning.

Second example. Is the problem, the problem? Recently, I went through a breast cancer screening process that included a biopsy. It was negative. I des–cribe here my cognitive, mental, and physical experience of it. By experience I mean: The lived, first–hand acquaintance with, and account of, the entire span

of our minds and actions, with the emphasis not on the context of the action but on the immediate and embodied, and thus inextricably personal, nature of the content of the action (Depraz, Varela & Vermersch, 2002, p. 2).

When arriving at the hospital, there was construction work going on. After entering the hospital, a digital display intended to inform patients, but nobody looked at that display. Incoming patients were going to different places to ask for information. Perhaps in response to this, there were five ladies that volunteered, that provided guidance about where to go. Then, one waited to enter in a cubicle to confirm personal data. Thereafter, the patient needed to walk to another building: a specialized clinic. The patient's journey could be modified to make this process shorter, less cognitive and emotionally demanding, and perhaps more efficient in terms of patients' and employees' time. These are not buildings like the ones Angela Mazzi was describing. Buildings that offer «positive distractions,» places that provide people with calming cues. Pathways where one feels reassured and cared.

Upon arriving at the clinic, the patient has the mammogram, and is then guided to a medical office, where one sees a stretcher, and a screen showing the patient's right and left breast.

This is a caring situation, the moment when health providers and patients engage to collaboratively enact care, discuss care, and plan care. Care is understood as having an interest or concern for a person and their circumstances, and also a mutual process that requires accompanying. For some scholars learning and caring are intertwined, «the goal with the learning process, ... is to relieve the patient's suffering in an ethical way and to strengthen well-being» (Hörberg, Ozolins, and Ekebergh, 2011, p. 3.). As a patient waiting in this medical office I wondered, can care take place in this context (see picture)? Can mutual learning and accompanying take place? I have done research several times on patient's experience. And so, I thought to myself, this could be a relevant situation to investigate from a design research perspective. I decided to write to my radiologists to share my mammogram and ultrasound experience. I said:

I had mammograms before, and I knew that they were, at least for me, painful. What called my attention was the moment of the ultrasound, two people: one looking at the wall, the other looking at the monitor and occasionally at the patient's breast. Another monitor on my left side, which with my limited knowledge about how to interpret the white and black areas, I was trying to make sense of. I thought: would it be possible for these two people to connect differently? How could I support the radiologists as a designer? How could I learn about my breast so that I don't need to have frequent tests that can

overload the system? I asked: would you like to explore what is possible to improve this situation?

The radiologist answered (for privacy's issues, I modify the wording, but the essence is here): I am very sorry to hear that you had a terrible experience. As providers, we try to connect with the patients that need an examination. Let me explain the circumstances, radiologists are under high pressure. We have to train the younger radiologists, we have no time for breaks. We explain everyday what to do, correct the mistakes and so on. We do this 10 hours a day. It is sometimes difficult to give enough attention to the women we examine. I apologize for the situation. The only explanation I have is that we ourselves are human beings and sometimes do not have enough energy to focus on two things, patients and younger doctors.

○ This answer shifted my perception. Her words resonated with my own experience at work. And I realized that we were two people exhausted, and the exhaustion affected the connection and mutual learning. I saw my ignorance, I forgot what I knew: to think in wholes. I forgot that I needed the lived account of all the people involved. For patients to have satisfactory experiences, it is also necessary that all care team members have satisfactory provider experiences, and the same applies to all hospital workers. "We are all profoundly interconnected and part of a whole, but it's truth we have forgotten" (Laloux, 2014, p. 144). Some labels, like "patient-centred," or other "centredness might obscure situations at times, extraordinary things can happen when we start perceiving the whole ecology. In the words of Bateson, ecology is "the science of interrelations and interdependence between organisms and between organisms and their environments" (Bateson, & Bateson; 1988, pp. 207–208).

◇ So, designers' «magic» is questioning what we see and how we know, and considering the whole situation or phenomena. Do we help to see anew? Not when the goal is too centred on one component of the human ecosystem, since this might ignore interrelated problems. In the context of having burned-out care providers, perception, intention, and connection are affected, and so is care.

Do we help to design new dynamics and processes? Do we foster learning? When listening, observing and mapping, designers help to make visible relations and interactions among parts. This in terms helps to consider/imagine what new connections, integrations, flows and exchange could foster knowledge sharing, discussion, inquiry and mutual learning. Do we craft situations where care can be possible? By fostering connections, knowledge sharing and mutual learning, understanding takes place, and caring is more possible.

The changes we are trying to make in organizations require energy. Burn-out results from chronic workplace stress, is characterized by exhaustion, detachment from one's job and cynicism, and reduced professional efficacy (WHO, 2023; see also Rathert, Williams, & Linhart, 2018). Caring actions and care take place in the context of relationships; attending to others requires energy, vitality and nourishment. Caring requires not to be in autopilot. It requires capacity, capacity to care for oneself, so that one can care for others. Caring requires curiosity, and learning. Learning, like caring, requires energy. A change in healthcare should be to move from looking mainly at financial resources to looking also at human relations. How can we develop caring potential? Can design foster care? To frame this discussion, let me highlight some aspects. Caring is:

- Something that one does.
- Something that is manifested.
- It can be overwhelming.
- It needs to be trained, learned.
- It needs to be facilitated, made possible.
- It is delicate, needs conditions to flourish.
- It happens in relationships, and requires capacity.

Healthcare quality and safety are a priority, but they are not possible without providers' capacity for caring. Before proposing to healthcare providers to engage in another quality improvement project, we need to ask: Do they have the energy capacity?

We, designers, might need to reconsider the language we use, and abandon words like "solving." What we say affects what we know. And what we know is not separate from what we do. How we refer to what we do affects how we perceive reality, and how we reflect on reality.

The She-ji Journal recently published a whole issue on design and public health. In conversation between Ashish Jhah and Patrick Whitney, Whitney says "there are process-based disciplines and content-based disciplines. Public health is a content-based discipline that has processes for medicine and care. Design is a process-based discipline, like economics, and engineering" (Park, Fahn-Lai, Shukla, Nogueira, & Whitney, 2022, p. 440).

Design has evolved through the last 100 years, from product and communication design to interface design and interaction design. Unfortunately, some people understand interaction design only as related to computers. Design moved from making things beautiful and useful, to helping people use technology and services, to making things possible. Design helps people to:

- Perform activities in relationship.

- Organize activities into processes and implement them.
- Envision new relationships and create a world together.

Design can help healthcare by moving away from mechanistic thinking, like: these are key drivers, and these are the outcomes. The world we live in is too complex to be represented in arrows and boxes. Healthcare is not something to deliver, it is a combination of, as previously mentioned, constant dynamic processes that happens in the interaction of the person with the social and cognitive environment.

In a conversation between Heinz von Foerster and Bernhard Pörksen (Von Foerster, H., Poerksen, & Pörksen, 2002), Von Foerster said: "It was clear to me that the essence of magic is not the false bottoms, the optical illusions... Good magicians don't hide anything. They make things as obvious as possible." Pörksen replies: "Magicians need a relationship with the audience." [HVF]: "That is correct. Doing magic always includes an element of dialogue... We create a world together."

Closing: Design is about making things possible. Designers envision, plan and implement processes, involve people interacting with tools (clinical or public health guidelines or technology), contexts, other processes (patient journeys, care pathways), services (ambulatory, screening), and experiences, hence designers affect, accommodate and design systems. In the healthcare contexts, design deals with people taking care of other people in times of need and stress.

Designers support the interconnected collaboration of the diverse people involved in caring activities and processes. Designers design strategies, not only to help close the gap between evidence-based care and the actual care patients receive, but to let appear what the gap is causing, linking behaviors, noticing the language, attending to the interrelations, adapting the methods, and steering the process. Designers engage in collective processes of questioning, reflecting, and investigating current practices and ways of understanding. Designers examine situations, designing processes of creative inquiry. Designers imagine other ways of caring that can fit realities, they model and experiment possible alternatives, implementing changes with all people involved in providing and receiving care, and the healthcare system fashioned by us.

Opening a space, exploring what is next. This presentation had led a path to explore in the workshop. Questions to explore can be the following:
- Can designers identify patterns of suffering, increase safety and foster the well-being of all people involved in the whole ecosystem of care and caring?
- Can we move from the problem solution paradigm and dualistic thinking

approaches?

- Can we stop separating and centralizing, and embrace instead multiplicity of ecologies coming together?
- Can we shift from resources to human relations? Can we envision how to better connect with each other? Can we codevelop our caring potential?

Healthcare is not just another service, it is characterized by entangled life processes. People taking care of people in times of need, stress and suffering. These people come together to co-produce care. These are constant processes. All of us are co-creators of health encounters. Design and designers seek to understand what is taking place, and what is that this creates. Within this context and constraints, designers together with healthcare teams, imagine and co-create the conditions for the best possible care.

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The presentation ends in minute 28:00 of the recording. Questions from the floor and the lecturer's answers can be heard in the recorded video and read in the transcript column of the video. https://vimeo.com/scdh

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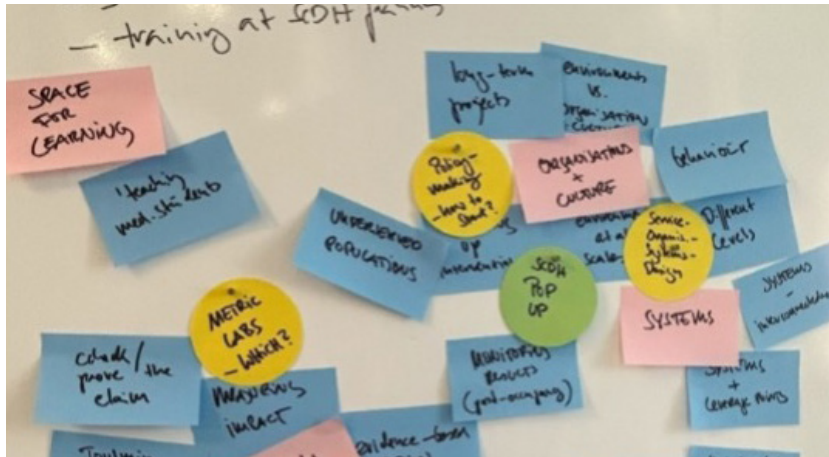
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7   The Working Groups
WG1 Improving our Environment: Exploring the design/health axis
Led by Angela Mazzi and co-moderated by Jan Eckert

Summary

1_What is the gap to implementing design strategies that promote health?

• Demonstrating the WHY behind design

   – Get beyond aesthetics to achieve design as an imperative not a "nice to have"

   – How can we deal with confounding variables in design research?

       a) Find a way to test individual elements

       b) POE that evaluate/measure and recalibrate opportunities

2_What can we do to frame the problem of design intervention as a way of promoting health?

Four Discovery Paths:

• Organizations and culture

   – Behavior

   – Long-term projects where original champions have left

   – Environments vs. organizations and culture

   – Underserved populations

   – Policy making (within organization and at government scales)

• Systems

   – Finding leverage points to catalyze change

   – Embracing interconnectedness

       a) Acknowledging different levels

       b) Understanding environments at multiple scales

   – Service/Organization/Systems design structures

       a) Monitoring results

       b) Design for situations not functions

           Capture "real issues" including lack of time/energy to adapt

to change

    c) Best practices vs. how it's done today

    d) Actor–network theory (ANT)

        Capturing unintended consequences and understanding why they occurred

- Space for learning
  - Appropriate accommodations for medical students to observe/participate in the clinical environment
  - Providing adequate space to accommodate other disciplines and ancillary services
  - Recognize that families (and even the patient) must participate in learning about the disease and care options/implementation

- Metrics
  - Every Design is a hypothesis, but we need to be able to check/prove the claim

    a) Claim must have meaning to the organization/system not just the designer

    b) Use Toulmin model (claim, grounds, warrant, qualifier, backing, rebuttal) https://www.youtube.com/watch?v=hy9_qQn68OA&ab_channel=eimadipcb

    c) Apply Evidence–based design strategies

  - Provide a way to test delivery of care changes and health outcomes

    a) Connection to credible and established healthcare metrics

    b) Demonstrate impact to ROI

    c) Find a common set of values

  - Develop metrics to test experiential qualities (simulation opportunities for Living Lab)

    a) Measure level of confidence/trust

    b) Measure level of stress

        Heart rate

        cortisol level

        nitrous oxide level

        skin conductance

        sleep quality

        glucose level

        vitamin D

    c) Measure social behavior

        Movement quality

        Voice/tone

        Words used

d) Measure movement for staff ad patients

      Steps taken

      Travel paths

      Gathering points

e) Measure impact of smell and sound

– Stakeholder workshops

      a) Patient's choice and voice

3_Provide Quick Wins

- Cost Neutral
    - – Understand direct costs and somatic improvement vs. indirect costs and wellbeing. Currently, built environment improvement are only understood in terms of direct or first cost.
        - a) Value proposition
- Simulations
    - – Experiential, qualitative
    - – Quantitative Interventions with metrics
- Systems design

NEEDS	INFLUENCE OF SPACE		OCCUPANTS OF SPACE				
	Design Team	Decision Makers	Patient	Family	Staff	Students	Healthy People
Safety	Y	Y	X		X		
Healing	Y		X				X
Trust	Y	Y	X	X			
Quality of Life		Y	X				X
Work Satisfaction	Y	Y			X	X	
Efficiency	Y	Y			X		
Learning	Y		X	X	X	X	X
Fatigue	Y	Y			X	X	
Stress	Y	Y			X	X	
Interaction/Collaboration	Y	Y			X	X	
Communication	Y				X	X	

Other considerations:

1_Role of non-human entities
- Nature
- Animal assisted therapy

2_Moving beyond the walls of the health system
- Impacts on healthy people of prevention and screening
- Access to healthy elements of the exposome
    - External Environmental conditions
    - External Socio-Economic Conditions

3_Utilizing metrics to employ targeted salutogenic strategies around these parameters:
- Light
- Indoor Air Quality
- Sound
- Temperature

WG 1 Recommendations Summary (from notes by Rahel Inauen)
Actions to take
- Designers need to be able to measure outcomes
- Designers need to demonstrate that there is value in investing in design
- Designers need to work on projects that are scalable
- Design simulations

Issues to address
- How to include Patients' voice
- How to isolate variables
- How to develop the ability to evaluate
- Identify different stakeholders to think about
- Creating Metrics / collected in the Health System: Which ones can be influenced by Design / How could metrics be improved?
- What aspects could we actually test? Smells, Light, Sound, Indoor Air Quality...
- What things could be «Quick wins»?
- How to implement cost neutral improvements?
- How to generalize Systems Design approaches?

WG2 «Make your magic.» Can designers foster caring between patients and healthcare providers?

Led by Guillermina Noël and co–moderated by Tamara Jeggli

Recommendations to consider for action
SCDH – How can we try to apply caring lenses and foster caring to emerge?

- Thinking about a tool to start conversations about applying transdisciplinary caring lenses
- Designing to give stakeholders the room, space, and time to talk about their challenges
- Prism translation tool to communicate about the value of caring at the SCDH
- Fostering good experiences that stakeholders have with designers to build trust
- Develop an alternative vocabulary for understanding and communicating the value that caring has for the SCDH

Further points (from notes by Rahel Inahuen)

- Where and what are entry points for design
- Identify the possible roles of design
- Design processes, not only products
- Identify when we are trapped in cultural biases
- Creating a tool to start a conversation with different lenses on caring
- Three parallel layers to assess:
    – Current state
    – Its potential
    –What can we try
- If problems and solutions are believed to be known, there's no room for change
- There's a need to make space for reflection and change
- What does it mean for us / for our stakeholders, to have a caring sense
- In what way the Center is currently enacting care and communications skills for caring
- Moving away from the jargon baggage
- Fostering fruitful collaboration and experiences
- Trust is a factor at all levels / Trust in processes, in materials, in disciplinary knowledge
- Providing space and time to believe that a different reality is possible

WG3 Love is at the Center of Health Care.
Led by Thomas Zeltner and co–moderated by Thomas Abel
(Text from notes by Rahel Inauen and Minou Afzali)

A touch of humor from the presentation by Abel and Zeltner on the Working Group 3 recommendations

Design could change aspects immediately to create moments of love
- «Design & Car«», «Caring Desig«»
- Care at home / doctors as guests at home / having a hospital bed at home
- intimacy in the home environment vs. processes and products of care
- The biggest value of a hospital is the staff

Necessary conditions
- Mutual respect
- Solidarity
- Emotional understanding and support
- Social responsibility
- Code of ethics of SCDH: definition of love —> human factors and social solidarity; tools to include these factors, i.e., inputs in early decision making
- Part of management summaries/reports/educational programmes

Opportunities for action
- Include deeply human factors and social solidarity in codes of ethics
- The Center could help provide input in early decision making
- The Center could bring these values into discussion
- Little things and small changes can have an enormous impact
- Integrate patients' loved ones in the health service

Value in Health Care
- the notion that value is "outcome divided by money" has penetrated too much the thinking of people in healthcare
- We forget that the main meaning of values is in values like love

- Not only love towards patients but also towards care givers and staff

8_Conclusions

These conclusions are also an opening. Because the purpose of the symposium was to explore future needs and possibilities of the SCDH for action and research, not to demonstrate how much we know. That was the premise from which the speakers worked.

The publication is a record of what took place on July 10, 11 and 12, 2023. As such, it is a reduction of whatever happened there: "The map is not the territory," said Alfred Korzybski. Every representation is a simplification of the reality represented. There was a stimulating atmosphere in the event, difficult to reproduce here, where every person present was an active member of the community, not only in the questions and answers that followed each presentation, but fundamentally in the Working Groups, and in the breaks, and in every opportunity, there was to be active, talking or listening. Materials presented by the keynote speakers were discussed and developed in the working groups, leading to recommendations to the management of the SCDH regarding future action and research. But also, the presentations referred to open issues, unresolved questions, desired directions.

The event was enacting the collective intelligence of a community of practice interacting with a view to uncovering possibilities for positive action in the interface of design and health. A range of issues were explored: from the scale of the planet to that of the individual encounter patient–caregiver.
As said above, this document includes recommendations directed at providing ideas for the management of the SCDH. However, the ideas are many, and the document should be seen as a territory to be explored and mined, a territory where beyond what is obviously written on the surface, there might be more to discover or to develop.

The ball is rolling. It is now the task of the SCDH and its community to take advantage of the momentum and of the information created, and keep on moving ahead in the promotion and development of creative and fruitful interactions between Design and Health.

Jorge Frascara
Symposium Coordinator
December 5, 2023

Participants, speakers, and organizers at the end of the SCDH 2023 Symposium

Appendix

Symposium participants

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- Naïg Chenais, Dr.
  Research, Swiss Center for Design and Health, Switzerland
- Evelyne de Leeuw, Prof. Dr.
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- Jan Eckert, Dr.
  Head of Living Lab, Swiss Center for Design and Health, Switzerland
- Jorge Frascara
  Professor Emeritus and former Chairman, Art and Design, University of Alberta, Canada, and International Advisory Board member, Swiss Centre for Design and Health
- William Fuhrer, Prof.
  Professor of Urban Development and Mobility, Competence Lead Dencity, School of Architecture, Wood and Civil Engineering, Bern University of Applied Sciences, Switzerland
- Sabine Hahn, Prof. et PhD, CNS, RN
  Head of School Nursing, Division Head of Applied Research & Development in Nursing, School of Health Professions, Bern University of Applied Sciences, Switzerland
- Deane Harder, Prof. Dr.

Professor of Economics, Business School, School of Health Professions, Bern University of Applied Sciences, Switzerland

- Rahel Inauen
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- Tamara Jeggli,
  Design Manager graduate, Lucerne University of Applied Sciences and Arts
- Anjali Joseph, Prof. Dr.
  Professor of Architecture, Director of the Center for Health Facilities Design and Testing, School of Architecture, Clemson University, South Carolina
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- Helle Wijk, Prof.
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University Department of Health Care Architecture, Sweden
- David Wollschlegel
  Living Lab, Swiss Center for Design and Health, Switzerland
- Thomas Zeltner, Prof. Dr.
  Professor of Public Health, University of Bern, Switzerland, / President and
  Chairman of the Swiss Red Cross Council / Chairman of the WHO
  Foundation / President of UNESCO commission of Switzerland / Deputy
  Chair of the University Council of the Medical University of Vienna

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