Design for All
How Design Research Drives Sustainability

Guest Editor:
Prof. Dr. Brigitte Wolf
Design research + Design theory

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Other Regular features

Guest Editor:

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Editorial

Design Research as Applied Science

Dr. Brigitte Wolf

I feel very privileged to be invited as a guest editor of the July 2025 edition of the acknowledged designforall magazine. I thank Mr. Sunil Bhatia (who is successfully publishing this magazine since 20 years) for giving me the chance to share my thoughts about design research and research methodologies. In this magazine I present a small variety of examples of design research. I appreciate the dedication of this year's magazines to woman in design research, because experience tells us that many design researchers are female. This might be related to the fact that design research needs social competence – which is a female strength.

I am grateful to all design researchers who accepted my invitation and submitted a paper for this issue of the designforall magazine. The articles published in this edition present design research projects and theoretical reflections about design and designers. The invited authors are women from different countries and cultures. Finally, nine design researchers gave some of their valuable time and managed to write a paper, although they are all very busy researchers and have a variety of projects on their agenda. Four articles were published of June 2025 Vol-20 No-6 issue and fremaining five aticle are published in the July2025 Vol-20 No-7 issue. All of them have been working with me on various projects.

As editor of this issue, I take this opportunity to briefly share my approach to design research: Design research is an academic discipline which has developed and gained more visibility and

acknowledgement during the last years. It is a growing discipline and makes more and more designers to understand human behavior and human experience within their material and immaterial environment. Cultural changes, new technologies, and social values determine living experiences. It is obvious that the complexity of our everyday life is increasing, and new challenges occur in all parts of society.

Design research is not a science and will not be a science in the future. It differs from scientific academic research, which is focusing on the generation of new scientific findings through the verification of hypothesis and theories using quantitative methods. On the contrary design research is applied research focusing on the understanding of problematic situations with the intention to improve peoples' lifes. In many cases 'wicked problems' appear which cannot be solved easily. Design research is a discipline focusing on understanding the interplay/relation between society, environment and technical innovation aiming for improvements.

Research problems are encountered in everyday life and therefore create research processes addressing the experiences of all different stakeholders. Understanding different points of view is crucial for the research process to come up with concepts acceptable to all involved. The aim is to achieve insights and understanding of peoples' everyday life and the challenges they are facing. For this kind of research empathy and collaboration with the targeted group of people is a prerequisite. Consequently, qualitative research methods adopted from different social sciences, like psychology, sociology, ethnology, anthropology are borrowed and modified. Especially participative research methods play an important role and offer the chance for all people involved to have a say. None of these methods was developed for design research, therefore methods need to be modified and

tailored especially for design research purposes and new methods need to be developed.

At the starting point the definition of the research subject is usually very open and research questions are not yet clearly defined. During the research process which consists of secondary (literature) research and primary field research the knowledge base increases and the subject of research will be more clearly defined during the research process. The emphasis of design research is directed to what is called 'social design' - in private or professional life. Other than in classical design disciplines, like industrial design or communication design there is no final solution on the spot, instead it is often an ongoing process of implementation and improvement.

In the design research literature different approaches towards design research are mentioned. The articles in this magazine's issue emphasize on research 'for' design and research 'about' design. The intention of research 'for' design is to deliver insights and knowledge to improve people's lifes including human interaction with their environment, the social interaction with each other and the role of artifacts. The intention of research 'about' design is to reflect in a critical and philosophical way about what designers do, how they do it and what has been achieved already. As a discipline, design research cannot rely on measurable theories. Instead, design creates theoretical assumptions through the analysis of insights and observations. In this way of proceeding critical reflection is a must in every step of the research process.

May the published articles in this issue provide inspiration to the readers and stimulate further design research activities.

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Design for Social Impact: A Research-Driven Approach to Addressing Challenges Faced by Amputees in Egypt

Abstract

Socio-economically challenged amputees in Egypt face systemic challenges that extend beyond physical limitations and difficulties, highlighting a pressing need for inclusive design solutions. This study examines how human-centered design can be effectively employed to address these issues by tailoring the research process to the local cultural and socioeconomic context. A mixed-methods approach was implemented, incorporating the following: a field research that provided a broad understanding of the available services and their accessibility; a case study of a service provider and individual patients that offer detailed insights into gaps in the rehabilitation system available. Semi-structured interviews, observations, and participatory techniques played a central role in capturing authentic experiences and perspectives, fostering trust and empathy with participants. Analytical tools like mind mapping and giga mapping were used to organize findings and identify interconnected challenges. The research process demonstrates the critical importance of human-centered design in identifying the core challenge and crafting relevant, accessible, and impactful solutions that directly address the target audiences' needs and effectively improve their quality of life.

Keywords:*human-centered design, design for social impact, amputees, rehabilitation, socioeconomic challenges*

Introduction

Learning to walk again after lower-limb amputation is a physically and emotionally demanding journey. While advanced prosthetic technologies exist, they remain out of reach for many in developing countries. High-tech solutions, though promising, often fail to adapt to rural lifestyles, leading patients to abandon their devices and revert to makeshift aids like wooden sticks. The situation is exacerbated by poor access to rehabilitation services, limited awareness, and socio-cultural stigma.

Living in Egypt, I have witnessed the disparities firsthand—from individuals able to access overseas rehabilitation to those living with unaccommodated residual limbs. Despite this range, most amputees, particularly from low-income backgrounds, lack access to essential services and support. The result is not only physical immobility but psychological marginalization and a perceived dependency on others.

This research aims to address these inequalities by applying a human-centered design lens to understand and respond to the needs of socio-economically challenged lower-limb amputees.

Literature Review

Post-amputation recovery is shaped by a complex interplay of physical, psychological, and socioeconomic factors.

Physical Challenges. Recovery often involves difficulties with stump healing, chronic pain, and the fitting and maintenance of

prosthetics. Poorly fitted devices can cause spinal misalignment, discomfort, and discouragement from continued use (Footcare MD, 2017; E. Kurichi et al., 2010).

Psychological Challenges. The psychological toll of amputation is substantial. Depression, anxiety, identity crises, and social isolation are common, particularly among trauma survivors and younger patients (Desmond et al., 2002; Hawamdeh et al., 2008). Without proper support systems, emotional recovery can be delayed or inhibited.

Socioeconomic Barriers. The financial burden of prosthetic care, coupled with limited access to rehabilitation services—especially in rural areas—often results in prolonged immobility and dependency (Tyc, 1992). Rehabilitation success depends not only on physical treatment but also on access to early interventions, pain management, proper prosthetic fit, and psychological and social support

In low-income communities, these barriers are further intensified. Many prosthetic devices are imported, costly, and poorly suited to local environments, making them inaccessible or ineffective for many users (Bhaskaranand et al., 2003). Public healthcare infrastructure often lacks investment, and prosthetic services are frequently provided by undertrained personnel, increasing the risk of misfitting and patient harm (Morsy, 2018). Cultural stigma surrounding disability further isolates amputees, creating additional psychological burdens and discouraging the use of assistive devices in public life.

Together, these intersecting challenges demonstrate the urgent need for locally appropriate, inclusive rehabilitation strategies—particularly for socioeconomically disadvantaged populations.

Study Objectives

This study aims to explore how a human-centered design approach can help uncover the complex challenges faced by lower-limb amputees from socioeconomically disadvantaged communities in Egypt. Grounded in principles of empathy, trust, and contextual awareness, the research seeks to surface insights that reflect the lived realities of individuals navigating post-amputation life within under-resourced systems.

The objective is not only to understand the physical, psychological, and social barriers that hinder effective rehabilitation, but also to identify opportunities for inclusive, low-cost, and locally relevant design interventions. By doing so, the study aspires to contribute to more equitable and responsive support systems that can improve the quality of life for marginalized amputees.

Methodology

This study employed a qualitative, human-centered design methodology, grounded in the principles of empathy, contextual sensitivity, and participatory engagement. Rather than approaching the research as a detached observer, the process was guided by immersion, relationship-building, and an intentional effort to listen deeply to the needs, concerns, and hopes of those directly affected by amputation. This enabled the generation of insights that were not only analytical but also emotionally and socially grounded.

The empirical research design was structured into three iterative phases, each building upon the last to deepen understanding and highlight areas of critical need:

Field Research: Conducted across a variety of public, private, and informal prosthetic service providers to map the national landscape and examine issues of accessibility, quality, affordability, and user experience.

Service Provider Case Study (Al-Hayyah Facility): Focused on a rehabilitation center known for its patient-centered ethos, this phase involved long-term observational engagement and informal, semi-structured interviews with staff, patients, and caregivers over a period of one year and a half.

Individual Patient Case Study: A focused exploration of the experience of a 23-year-old female amputee from a rural area. This phase aimed to understand how systemic challenges manifest in day-to-day life and influence personal and social well-being.

A multi-method qualitative approach to data collection was adopted to capture complex realities from multiple perspectives:

Participant Observation: As the researcher, I was embedded within Al-Hayyah's Cairo branch for over eighteen months as an assistant, attending bi-weekly sessions and assisting during consultations and fittings. This assistant role allowed for natural rapport-building with both staff and patients, and allowed for a comprehensive understanding of the organization's operations, routines, and interpersonal dynamics between all stakeholders.

Additionally, this role allowed me to develop a deeper, firsthand understanding of the prosthesis fitting and rehabilitation process within a low-resource context. I observed how patients navigated the physical, emotional, and logistical demands of rehabilitation and prosthesis fitting, often under immense financial and social strain. Rather than following the standardized and linear model often outlined in literature, the process revealed itself to be far more complex and adaptive—shaped by material limitations, informal practices, necessary improvisations and evolving patient-caregiver dynamics. These insights, grounded in participatory observation, offered a detailed and layered view of amputee care delivery reality on ground.

Semi-Structured Interviews: Conducted with patients, caregivers, prosthetists, physiotherapists, and center managers. These were approached conversationally, often occurring informally during waiting periods or clinical sessions, which made participants more comfortable and open. However, building trust—particularly with patients—proved challenging. Many had been previously misled or exploited, receiving low-quality prostheses after paying significant sums. Others had been dismissed by medical professionals, and some faced additional barriers due to illiteracy, which made it difficult to verify information or advocate for themselves.

For the first two months, I focused primarily on observation—listening, learning the language patients used, and understanding how they wished to be treated and engaged. This period of quiet immersion was essential in creating space for genuine connection. Over time, familiarity and consistency helped ease initial hesitation. The first informal conversation with a patient in the waiting area

marked a turning point; gradually, others began to open up. In some cases, patients invited me to help explain medical instructions in simpler terms or take notes on their behalf. These interactions became critical to building trust and collecting insights that would have otherwise remained inaccessible.

Contextual Engagement and Shadowing: The research extended into patients' lived environments, including home visits, to observe how clinical advice translated—or failed to translate—into daily practice. Shadowing was a key method used during the third phase of the study, particularly in the individual case study of a 23-year-old female amputee living in a rural village. I traveled to her home and accompanied her throughout her daily routine to better understand the challenges she faced beyond the clinic setting.

This immersive approach offered a clearer picture of how she navigated work, social interactions, and mobility while managing a painful stump and attempting to apply the rehabilitation exercises recommended by physiotherapists. Some elements of the prescribed routine were followed, while others proved difficult due to physical discomfort, environmental constraints, or lack of ongoing support. Observing these moments firsthand provided a deeper, more grounded understanding of how systemic barriers manifest in everyday life—insight that could not have been captured through clinic-based conversations alone.

Ethnographic Sensitivity: All data collection was shaped by respect for the emotional and cultural boundaries of participants. Due to shyness, discomfort, or cultural norms—especially among female

participants—no recordings or photographs were taken. Notes were taken discreetly and respectfully.

To interpret and organize the collected data, the following analytical tools were used:

Mind Mapping: To cluster insights and observe relationships between themes emerging from interviews and observations.

SWOT Analysis: To assess strengths, weaknesses, opportunities, and threats within Egypt's prosthetics and rehabilitation ecosystem.

Giga Mapping: A systems-oriented method used to trace multilayered connections between institutional gaps, societal norms, and patient outcomes. This visualization helped identify where failures accumulate and where design interventions might be most impactful.
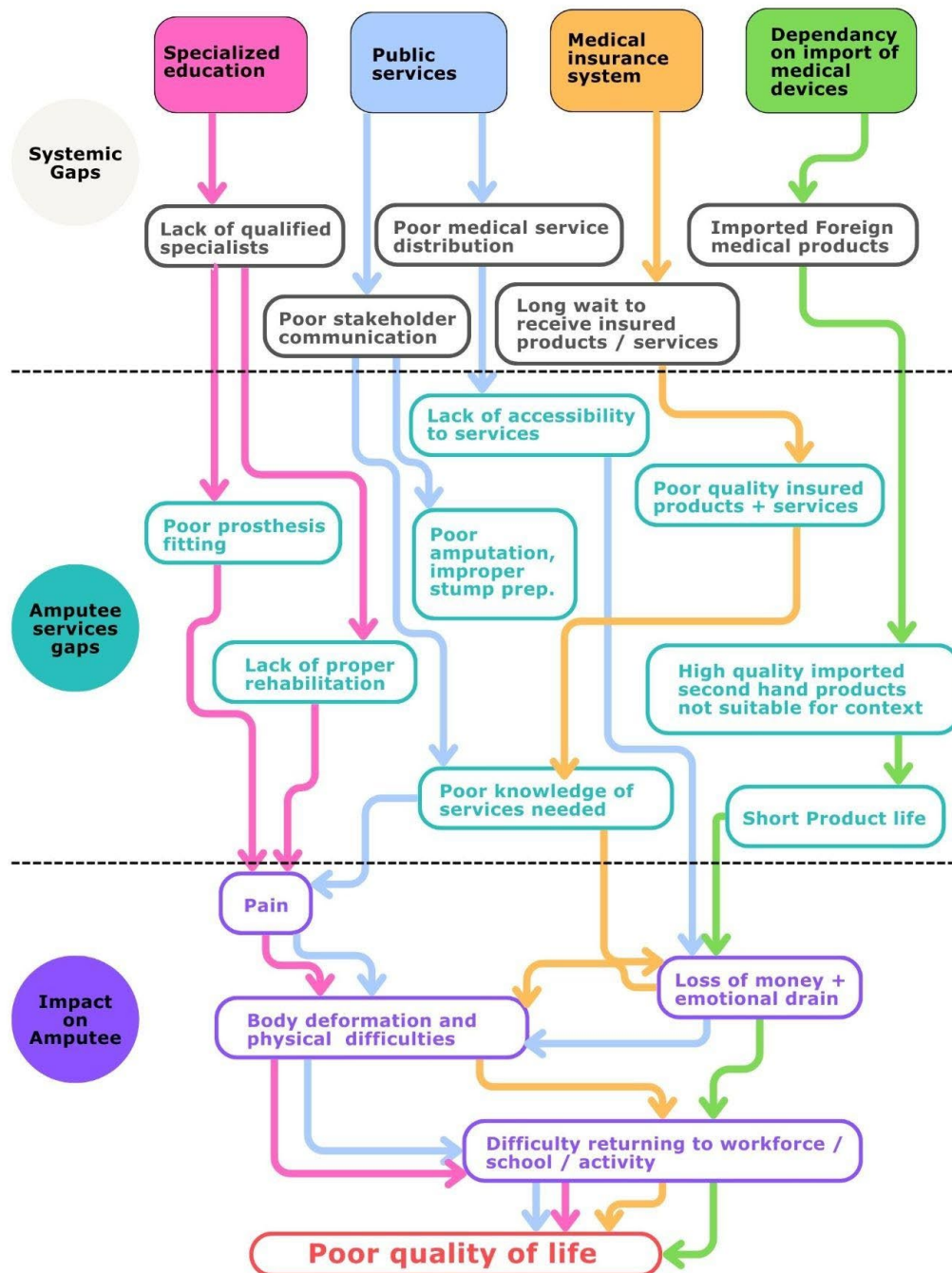
Findings

The research revealed that lower-limb amputees in socioeconomically disadvantaged communities face systemic barriers that severely compromise their post-amputation quality of life. Services are largely centralized in urban areas, making access difficult and costly for rural patients. High-quality prosthetics remain financially inaccessible, while cheaper alternatives are often ill-fitted and uncomfortable, leading to pain and abandonment. A lack of guidance on stump care and mobility training, coupled with unqualified personnel, further limits patients' ability to adapt.

Even in more empathetic care settings, such as Al-Hayyah Rehabilitation Center, key gaps persist. Patients often receive information verbally with no follow-up support, caregivers sometimes mediate or override decisions, and gender dynamics can inhibit trust and comfort during fittings. These issues are particularly pronounced among women and those with prior negative care experiences.

The case of Ms. S., a young woman from a rural area, underscored the long-term consequences of these gaps. Her earlier experience with an ill-fitted prosthesis had caused spinal complications, and the absence of pre-prosthetic care left her unaware of basic stump management. Cultural discomfort further hindered her engagement in rehabilitation. Her story reflected how physical harm, emotional strain, and social stigma are deeply intertwined—and how they often begin well before a prosthesis is fitted.

To better illustrate the interconnected nature of these challenges, a Giga Map (Figure 1) was developed based on the empirical research phase. The map organizes findings across three layers: (1) country-level systemic gaps, (2) amputee-specific service gaps, and (3) resulting quality of life difficulties. These layers are further categorized by issues such as poor public infrastructure, lack of specialized training, inadequate insurance, and underdeveloped local product design.

Figure 1: Findings Giga-map

The map reveals how one issue often leads to another in a cascading, domino-like effect. For example, a lack of specialized education contributes to a shortage of qualified rehabilitation professionals, which in turn results in poor prosthetic fitting and limited patient guidance. This leads to physical pain and gait deviation, which eventually contributes to body disfigurement, emotional distress, and social exclusion. Ultimately, these overlapping challenges culminate in diminished independence and poor quality of life.

By visualizing these complex relationships, the Giga Map highlights the need for integrated, cross-sectoral and human-centered approaches to rehabilitation process innovation—ones that go beyond basic clinical care and are context-specific to address patients' needs and concerns.

Discussion

The human-centered research process revealed rehabilitation as a critical and underserved stage in the amputee journey—one that directly affects long-term adaptation, independence, and overall quality of life. While the larger systemic challenges—such as poor communication between healthcare professionals, lack of specialist training, and limited access to services—require long-term infrastructural reform, it became clear that targeted improvements in rehabilitation could create immediate and meaningful impact.

This insight was grounded in both field observations and case analysis, where recurring issues of misaligned prosthetics, pain, and poor gait were linked directly to the absence of structured, coordinated rehabilitation efforts. As a response, a seven-step rehabilitation model (Table 1) was proposed, aimed at bridging these

service gaps through coordinated care, user-specific treatment plans, and continuous support via a dedicated case manager.

STEP	FOCUS AREA	KEY PARTICIPANTS	KEY ACTIVITIES & TAKEAWAYS
1. PRE-SURGERY MEETING	Surgical planning and psychological prep	Surgeon, Physiotherapist, Prosthetist, Psychologist, Dietitian, Nurse	Amputation planning, prosthetic options, pre-surgery exercises, caregiver guidance
2. POST-SURGERY RECOVERY	Wound care and emotional support	Nurse, Psychologist, Physiotherapist	Stump care, pain and phantom limb management, grief support
3. PREPARATORY PHASE	Early physiotherapy and independence	Physiotherapist	Mobility with preparatory prosthesis, stump reduction, daily activity training
4. BASIC GAIT TRAINING	Gait skills and readiness assessment	Physiotherapist	Gait training, pain monitoring, socket fit assessment, intro to home gait tools
5. FINAL PROSTHESIS PREPARATION	Socket casting and gait analysis	Prosthetist, Physiotherapist	Permanent socket fitting, gait correction, evaluation of home training progress
6. PERMANENT PROSTHESIS TRAINING	Functional adaptation and maintenance	Physiotherapist, Prosthetist	Advanced gait training, prosthesis care, real-world mobility tasks
7. FOLLOW-UP & REINTEGRATION	Long-term adjustment and social reintegration	Full team incl. Psychologist, Vocational Therapist	Socket adjustments, gait check, psychological support, vocational planning

Table 1: 7-step rehabilitation model

The proposed rehabilitation process is structured as a seven-phase journey designed to align clinical expertise with the realities of life in low-resource contexts. Adapted from ideal models and informed by the existing practices at the Al-Hayyah facility, this structure emphasizes continuity, patient education, and long-term support. Each meeting is designed as a full-day intensive workshop to accommodate patients traveling from rural areas, with structured

"homework" and take-home materials to reinforce progress between sessions.

Beginning with a rarely offered pre-surgery session (depending on Amputation circumstances) and continuing through long-term follow-up, each phase brings together an interdisciplinary team to address physical, emotional, and logistical challenges. This process is intended to be flexible and scalable—suitable for both new and experienced amputees—and relies on consistent patient involvement, clear communication, and a case-managed approach for coordination. While implementation may vary based on facility capacity and geography, the model offers a structured foundation for improving long-term rehabilitation outcomes.

Among the most pressing issues identified in the research was the long-term physical impact of incorrect gait patterns following amputation. Poor alignment and limb compensation, often resulting from ill-fitted prostheses and lack of supervised gait training, were shown to contribute to serious complications such as pelvic tilt, spinal misalignment, and chronic pain. In one documented case, these issues had advanced to the point of affecting the patient's ability to bear children—highlighting the profound implications of inadequate post-amputation support.

Gait training, though essential, remains inaccessible to many patients due to cost, distance, and limited availability of physiotherapists. To address this gap, a low-cost wearable tool—the Dynamic Gait Brace—was developed to support patients in maintaining proper step width during unsupervised home training (Figure 2). Designed as an extension of the therapist's role, the brace restricts unconscious

deviations by guiding the user's legs into correct alignment, mimicking the adjustments typically made during in-person sessions.

The prototype consists of an adjustable elastic hip belt connected to vertical and horizontal straps, which help maintain correct spacing between the legs. Materials were chosen for affordability and ease of production, making the tool accessible to the study's target group. It was tested in two versions, both emphasizing modularity and comfort across different age and body types. While not a replacement for supervised care, the brace is intended to improve training outcomes between clinical visits, reduce harmful gait patterns, and support long-term physical well-being.

Figure 2: The Dynamic Gait Brace

Five Years Later: A Shifting Landscape of Need and Capacity (2025)

As of 2025, five years after the initial design and testing phase, the socio-economic reality for many amputees in Egypt has grown more complex. Worsening economic conditions have placed overwhelming pressure on patients from low-income backgrounds. Rehabilitation—despite its proven importance and medical endorsement—has become a luxury many cannot afford. Patients are often faced with impossible choices: investing in a prosthesis or feeding their families. Even when rehabilitation is advised and necessary, it is now frequently postponed or foregone entirely due to lack of time, financial means, and emotional bandwidth. Immediate survival needs outweigh long-term health considerations.

In parallel, the rise of internet access has introduced a new duality in the rehabilitation journey. On one hand, patients now have unprecedented access to information about their condition, enabling a greater sense of agency and understanding. On the other hand, without guidance from trained professionals, this unfiltered access can lead to misinformation, unrealistic expectations, or improper self-treatment methods, ultimately increasing the risk of harm or disengagement from formal rehabilitation services.

This combination of economic hardship and unstructured knowledge access complicates the rehabilitation landscape further, underscoring the need for sustainable, low-cost, and context-sensitive solutions that don't rely solely on ideal systems or patient-driven initiative. The findings of this study remain relevant and timely, pointing to rehabilitation as a crucial but fragile field of intervention—one that

must adapt not only to medical need, but also to shifting social and economic realities.

Conclusion

This study demonstrates the necessity and power of human-centered design in developing social impact solutions. By embedding the research within the lived realities of Egypt's socio-economically challenged amputees, it was possible to surface deeply rooted issues and propose relevant, achievable interventions. Rehabilitation, though often overlooked, proved to be a pivotal phase in patient recovery and independence. The insights gathered here offer a roadmap for designing better, more inclusive healthcare systems—starting not from what is ideal, but from what is real.

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Designing for coalescence –

A design framework resulting from a participatory research process about ethical craft initiatives in Pakistan

Dr. Gwendolyn Kulick

Abstract

In Pakistan ethical craft initiatives are often embedded in development aid and grassroots empowerment activities of different character – from large internationally funded aid programs to small private initiatives or social enterprises of different scales. Besides marginalised craft producers such as home-based women workers or artisans with workshops but few customers, naturally, a large variety of stakeholders from the international development aid field, the local NGO sector, academia, social businesses, philanthropy, and different design fields are associated with ethical craft initiatives. Operating in Pakistan's large and exploitative craft sector, project objectives are usually located at the intersection of poverty alleviation, social justice and cultural heritage preservation. This paper will outline an open-ended, participatory and critically reflective research process that aimed at understanding motivations, experiences and relationships of stakeholders in ethical craft projects better, and how the mutual

impact between the research environment, the research participants and the researcher caused the result of this design research project to take an unexpected direction; instead of focusing product development or value chain management, the data was used to establish the craft for empowerment system, which enabled to analyse structures, processes and mindsets, including preconceived notions of stakeholder roles as beneficiaries or providers of aid. Through the collective research activities also the research participants were impacted in an empowering way, pondering emerging questions regarding their own initiatives and implementing strategic experiments, or in the case of a group of home-based women workers diverting from the stereotypical role of being beneficiaries by offering support to university students and faculty members. The result of this research project, the design framework 'designing for coalescence' will also be introduced.

1. Introduction

When commencing a PhD design research project about ethical craft initiatives in Pakistan, the objective was to address the exploitative conditions under which a large number of craft producers work in Pakistan, and the challenges faced by ethical initiatives in the craft sector.

The scale and character of Pakistan's extensive craft sector highlight the relevance of such research. While it is difficult to determine the exact number of people working in the country's craft sector, the Pakistan Bureau of Statistics provides numbers that allow insightful conclusions to be drawn. In 2023, almost 242 million people lived in Pakistan, with 51.48 percent men and 48.51 percent women (Pakistan Bureau of Statistics, 2023, p. 116). Of the 51.91 percent of employed men and 15.34 percent of employed women (Pakistan Bureau of Statistics, 2022, p. 22), 13.7% work in the category 'craft and related trade workers (p. 24). In this category men work on average 51.7 hours per week and earn about 107 euros per month, and women work 31.5 hours per week and earn 52 euros per month (p. 30 & p. 41). 87.8% of those working in the category 'craft and related trades' work in the informal sector, for example, in small single-household enterprises, and are excluded from state and private sector benefits (International Labour Organization, 2018).

These statistics do not provide information regarding any specific craft or region, but they do show that the craft sector is a significant factor in Pakistan's economy and that millions of people, including a large number of women, are engaged in it. It also illustrates that craft production is a profession of poor people who earn little and are vulnerable to financial and social exploitation.

Several different ethical craft initiatives aim to improve these precarious conditions, including social enterprises, human and legal rights NGOs, community development projects, craft focused apparel, and interior design labels or outreach projects at universities. Their goals usually intersect in the areas of cultural heritage preservation, social justice, and poverty alleviation. Often, they aim to achieve this through vocational training, which should enable craft producers to

satisfy customer demands, such as fashion and textile designers, or even individual customers who attend craft fairs or shops specialised in craft products.

These ethical craft initiatives have a positive impact on many of their trainees, either by establishing sustainable links to customers in the fashion or textile industry or simply through a better sense of how to run an individual micro-enterprise in small local markets or craft fairs. In addition, some NGOs work tirelessly to advocate for better labour rights for people in the informal sector, especially for home-based women workers, and gradually achieve improvements. However, for many training attendees, their situation does not improve after training, which worries project managers and other stakeholders who genuinely aim to support them.

 What frequently happens is that after initial training, funded or not funded, it becomes difficult to find a sufficient number of customers who order from craft producers on a regular basis, and with the growing number of training graduates, facilitating communication between craft producers and customers reaches a scale that is difficult to manage. This is especially true for the thousands of home-based women workers who participate in such training offered by different organizations that cannot follow up with all of them. But why can fair crafts value chains and increased income opportunities for craft producers be achieved in some instances but in many others not?

How to address this situation from a design research perspective was not initially clearly defined. Anticipated research outcomes included formulating guidelines for the development of appealing craft products that could be sold at a fair price or a blueprint for managing an ethical craft project or fair value chains. Through a case study, the

idea was to identify strategies to support craft producers in gaining income opportunities by identifying successful strategies in existing ethical craft initiatives.

This linear plan went through a significant change during the research process that became more immersive, participatory, and open-ended than expected. The case study did indeed become one of the core research methods. However, when observing and partially collaborating with some of the case project stakeholders over a period of five to six years, the focus on how to support craft producers gradually shifted towards understanding their empowerment in relation to the motivations and experiences of other stakeholders in ethical craft initiatives, especially those who initiate and manage them.

The range of these stakeholders is wide and includes managers of large NGOs; academics in fields such as design, social sciences, and business administration; fashion and product designers; social entrepreneurs; micro-credit banks; philanthropists; and representatives of donor agencies. Craft producers, such as home-based women workers, micro-entrepreneurs, and artisans with small established workshops but few fair market avenues are, of course, the central stakeholders. After all, their support is one main reason for such projects to exist. However, they are often not in a position to initiate and plan them, but are included to follow an already finalised process, once the budgeting and planning are completed by others. Such a unidirectional strategy of top-down management of empowerment processes, though, faces challenges in achieving its goal: creating income opportunities, social justice and cultural heritage preservation, let alone addressing the lack of agency of the craft producers. Realising through first hand qualitative research how

closely their empowerment is entangled with the motivations, perspectives, and methods of other stakeholders in ethical craft initiatives, the research methodology became increasingly participatory in nature, involving craft producers as well as other stakeholders. In unexpected ways, the researcher and the participants through conversations and collaborations mutually impacted each other's work. As such this article will outline not 'design for all' but a 'design research process for all.'

This research process also embodied the theory of second-order cybernetics, an area of systems thinking in which the elements – or participants – of a system are also the observers of a system. In an ideal scenario, this is thought to result in more ethical and holistic decisions for each participant because he or she would consider the benefit of the overall system (Glanville, 2003, pp. 3-8). While this might not always reflect reality, in this research process, the interplay between researcher, research participants, and the research environment provided a more holistic research result. Rather than singling out the empowerment of the craft producers, the research objective became to develop a strategy that supports the 'empowerment of all stakeholders.'

Systems thinking also played a vital role in the analysis of data resulting from this research process. Inspired by the GIGA-Mapping method, developed by the systems-oriented design group at the Oslo School of Architecture and Design (Sevaldson, 2022, n.p.) the large amount of data gathered in this research process, diverse in scope and nature, was used to visualise and as such establish the 'craft for empowerment system.' This step enabled to analyse how the system operates, informed by structures, processes, mindsets, and stakeholder relationships that had consolidated over a long period of

time (Fig 1). The noticeable strong top-down dynamic, unequal power relations, and stakeholders' often stark alienation and non-awareness of each other's circumstances, experiences, and perspectives gave the impetus to formulate the design framework 'designing for coalescence.' Translating as 'growing together' it aims to advance ethical craft initiatives' positive impact by encouraging inclusive collaboration and mutual learning from the early stage of ethical craft initiatives.

The following paper will first outline the immersive and participatory research process that became an increasingly collective journey of critical reflection and practice not only for the researcher but also for some of the research participants, who are also stakeholders in ethical craft initiatives. It will then discuss how this mutual impact prompted the development of a design framework that aims to encourage stakeholders to mutually learn from one another across inherent structural hierarchies, different positions of power, and diverse socioeconomic, educational, and cultural backgrounds. The framework 'designing for coalescence' will be introduced, as well as a lab format that serves as a projection of how the implementation of 'coalescence'—or 'growing together'—could possibly be envisioned. Rooted in extensive qualitative data, an understanding of 'design for all,' is presented in which not only the research result might benefit many, but in which already the collective inquiry of the research journey, enabled empowering experiences for many who participated in it.

2. Immersion and stakeholder participation in the research process

The research process started in a rather linear way by conducting interviews with founders and project managers of ethical craft initiatives in Pakistan and partially in India, all together approximately 20[1]. Four of these were followed more in depth over a period of five to six years as one of the main research methods, a case study. While the initial interviews provided interesting insights into how ethical craft initiatives are managed, they also revealed the range of stakeholders involved in different capacities and their diverse motivations and experiences, as well as the multitude and complexity of concerns they routinely address. To better understand these stakeholders and their relationships, further research was conducted with a strong focus on participatory research activities, namely an action research project, focus groups, and general engagement in the field of ethical craft initiatives in Pakistan.

'Participatory research', as an umbrella term, summarises a range of names and frameworks related to action research, anthropological investigation methods, and human-centred inquiries (Vaughn and Jacquez, 2020, pp. 3-4). Their main common characteristic is that people who are not researchers themselves are involved in collecting data, because their concerns are the research focus. The value of such involvement is not only the genuine character of the gathered information, but also the possibility of engaging those research participants to different extents in developing research results. The extent to which this might be helpful depends on the research interest and nature and whether particular expert knowledge is crucial.

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[1]*Some were just visited once, others more continuously before choosing the final four case project sets. Also, some case study projects are so closely entangled that it is difficult to determine whether to count them individually or together. All four case project sets had close connections to other projects that could even be counted as separate case projects.*

Involving research participants in developing strategies and solutions can potentially increase their level of empowerment (p. 2 and pp. 5-6). Similarly, 'participatory design' refers to a design practice that involves concerned stakeholders, including target groups and collaborators, from the very early stage of a project, even when the actual design concern still needs to be clearly defined until the development and testing of a design (Sanders and Stappers, 2014, pp. 5-18). Such early involvement can increase the long-term impact of a design strategy by fostering ownership and agency among concerned people.

The potential impact of participation in research and design on participants therefore resonates with definitions of empowerment, which commonly highlight the condition of having access to information as well as the means and platforms to voice opinions and to take part in decision-making (Eyben, Kabeer and Cornwall, 2008; Rowlands, 1997, pp. 13-15). They are also in line with Amartya Sen's definition of development as a set of freedoms as opportunities for making choices (2000, pp. 37-40). Additionally, the collective experiences of the researcher and research participants and the critical reflection on them contribute to the rigor of the data and can constructively influence further research steps (Cornish, Breton, Moreno-Tabarez, U., et al., 2023, p. 2).

Participation becomes more challenging when stark inequities of status and power characterise collective activities. Here the field of subaltern studies provides aspects to consider, with 'subaltern' describing people who are not only poor but who are marginalised because of other aspects such as ethnicity, caste, gender or culture, and therefore they are left out from historical narratives (Sardar, 1999, p. 13 and p. 79). Gayatri Chakravorty Spivak describes how they

are unable to voice their own perspectives because usually others speak for them (Spivak, 2008; Nandi, 2009, pp. 41-42 and pp. 84-87). Both Spivak and Brazilian educator Paulo Freire argue that the ability and opportunity for critical reflection and articulation lie at the core of empowering experiences (Freire, 1970, pp. 113-116 and p. 129). The take-away from Freire and Spivak is the understanding that people living in precarious conditions lack the self-awareness that they live in those unfair conditions, as well as the platforms and audiences for presenting and debating them and the opportunities to take part in decision-making processes concerning their lives.

Considering that ethical craft initiatives focus on the economic, social, and cultural empowerment of marginalised craft producers, the empowering potential of conversation and participation in research and design was a supportive factor for taking this direction. In addition to the case study research activities, 2) an action research project over a time period of four to five years with a group of home-based women workers in a village near the university campus in Lahore, Pakistan, where the researcher was teaching design at the time of the project; 3) two focus groups with research participants of the case study, action research, and other stakeholders known from the ethical craft sector; and 4) observations through a general presence in the field of ethical craft activities through attending events such as temporary bazaars or round tables.

For the case study (Kulick, 2024, pp. 150-180) four sets of case projects in Pakistan with different organizational set-ups and conceptual approaches were analysed. One was a holistic community development project that commenced when a German retired design professor moved to a village in rural Punjab in the 1990s, invited by her former Pakistani exchange student. She began by developing toys

with the people of the village, and together with volunteers of different professions, a wide range of initiatives in the village followed, including two schools, a health centre with trained midwives, infrastructure such as a sewage system and solar energy, agricultural experiments, and a village radio. Another project started as a joint venture in the early 2000s between a community organization in the Hindukush Mountains, in the Chitral region, and an apparel industrialist in Lahore. The latter founded an apparel label, which applies Chitrali craft to products, while manufacturing and finishing are done in Lahore at the apparel factory. The other case sets are two NGOs with one having its roots in micro-finance and the other one in legal rights, that aim to establish social craft enterprises with a large number of home-based women workers who have completed their vocational training. These case projects were followed over a course of five to six years through field visits, interviews with different stakeholders and affiliated organizations, and partially collaboration.

One common strategy for all case study sets was to integrate the target group, the craft producers, into managerial and creative processes by selecting craft producer representative as board members, training them as managers of craft producer groups, including them as shareholders of a social enterprise so that they have a say in its concerns, or registering them as members in artisan directories for customers to contact them (pp. 194-201).

 The action research project (Kulick, 2024, pp. 218-233) was initiated at the request of a group of women with embroidery skills in a village at walking distance to the university where the researcher taught design at the time. The aim was to explore the possibilities of a supportive neighbourhood between women and academics and

students of art and design. As a first step, the researcher facilitated several workshops on developing embroidered products. The project came to an abrupt halt when tools and materials went missing. It took a year until the women confided that they had taken them, but only because they had heard from peers in other villages that usually projects that promise income opportunities do not result in long-lasting impact; therefore, the best would be to take the items that are provided. Upon reconciling, all participants gained valuable insights. The researcher understood how people in precarious circumstances, who belong to the typical target group of development aid, view initiatives to support them based on experiences of little impact. While income generation was one of the initial objectives of this action research project, the women said that collective activity was their main motivation to attend the workshops and they began thinking about what they could possibly contribute to the university's design programs. This was a significant shift in how they saw their role in this project: no longer as beneficiaries but as people who have the expertise to share (pp. 246-247).

Focus groups (Kulick, 2024, pp. 234-252) were conducted to discuss strategies for sustainable craft business. Most participants also participated in previous research activities and represented a variety of typical ethical craft stakeholders such as directors and faculty members of design institutions, fashion designers, NGO project managers and CEOs, public relations experts for educational institutions, a middle man in the common craft sector, a female micro-entrepreneur who is doing stitching and embroidery, and three home-based female workers of the Action Research Project. While no particularly new insights regarding value chains surfaced in the discussion, focus groups became a turning point in the research

project. The participants began discussing each other's projects, goals, and expertise. NGOs that work on training home-based women workers and linking them to markets, design faculties that familiarise students with cultural heritage and traditional craft techniques, fashion designers who enhance their lines, and social enterprises that aim to establish fair value chains – they all have built expertise in different areas, such as grant application writing, business administration, social work, product design, marketing, and education. In the months following the focus groups, they identified opportunities to mutually support each other, independent of this research. Faculty members of the textile design department, for example, began working with one NGO on curriculum components such as colour and composition to be integrated into vocational craft training. These emerging mutually supportive activities were also a response to a focus group debate about the perpetual dependency of many ethical craft initiatives on development aid grants, which often come with attached strings such as pre-defined project requirements, implementation strategies, and success indicators. If stakeholders form supportive alliances their ethical craft initiative approaches become stronger, so that they can convince those who conceptualise grant schemes of better practices Another key moment was when the village women from the action research near the campus proposed their idea of having a room on campus where they could teach students traditional embroidery. After several years of working on product design workshops and after their revelation of their views on typical grassroots empowerment that people living under similar conditions experience, they flipped their assigned 'role' around. Instead of viewing themselves as beneficiaries of aid they offered their assistance to the students and faculty of a university. They

proposed a laboratory without knowing the term, and the concept of mutual learning (Kulick, 2024, pp. 246-247).

The overall research process can be characterised as organic, often following word-of-mouth recommendations regarding projects and events, such as craft fairs, grant information sessions, or round table discussions. The case study projects' plans, activities, and experiences were followed up. The action research project applied a critically reflective process by deciding on what to do next after each activity. The focus groups were planned in detail, including participants, topic, location, setup, and documentation, and resulted in independent and unforeseen participant collaborations. From an early stage, the characteristics of the research process were in line with the above definitions of participatory research and participatory design. Stakeholders of ethical craft initiatives were not only involved in gathering information and defining challenges and successful strategies, but also impacted the research direction and its result through activities. The independent collaborations after the focus groups, for example, provided a push to go forward with the concept of 'coalescence'.

The research participants played a vital role in the decision not to formulate guidelines for developing craft products or value chains. It became clear that these stakeholders, especially founders and managers, had gathered a wealth of expertise in many years of dedication and experience with rigorously applied critically reflective practices in the field. They did not need a researcher to tell them how to do their projects better, and no road map could guide them through the inevitable challenges.

3. The relationship between the research environment and the research direction

At first sight, Pakistan can be perceived as difficult to conduct research in due to its unpredictability at times; for example, security measures are applied in response to natural disasters or incidents of violence, so that research activities might be cancelled on short notice occasionally. However, what by far outweighs this perception is that the country's people demonstrate high levels of resilience, as did the research participants. They responded with flexibility, effort, courtesy, enthusiasm, and general support to requests, enabling insights into their experiences in ethical craft initiatives in all their eclectic and genuine truths. Eye-opening information revealed itself in unexpected ways, which would have been impossible to plan or gather meticulously by following a linear research process.

Other characteristics of the research environment included social restrictions, especially for home-based women workers, who might require permission from their families to participate in workshops, meetings, or craft fairs; urgent concerns in grassroots communities that need to be prioritised over craft production and research activities, such as rebuilding houses after floods or securing a harvest from the fields; and gaps in communication with research participants not always speaking English or Urdu but local dialects and the researcher speaking English and only basic Urdu.

On the other hand, participants showed commitment, enthusiasm, and creativity when coping with such challenges. Little bureaucratic red tape and a general culture of ad hoc, in which plans can change quickly, often worked in the benefit of the research rather than

hindering it, for example, when research participants were spontaneously available for requested activities. For the researcher, this meant adopting the same flexibility and spontaneity without giving up on planning or in to convenience by only collecting what presented itself. This meant to develop the ability to judge when the data about a certain topic is saturated and does not require seeing, for example, more case projects of the same kind, or to have questions, equipment, and consent agreements at hand at most times, in case a research opportunity occurs. (Kulick, 2015, pp. 3-5; Kulick, 2024, pp. 51-52)

The advantage of this research process was that the interaction between the researcher and the research participants set in motion changes in each other's views, analyses, and subsequent activities. Not only did the researcher change the direction towards formulating the framework 'designing for coalescence' as a research outcome; similarly, the research participants engaged with questions that emerged in collective activities. Many of them commented on how conversations and collaborations became valuable reflections for their own work in NGOs, enterprises, and educational institutions.

The interplay and mutual impact between the researcher, research participants, and environment can be described as the embodied experience of second-order cybernetics, which happened initially less consciously but was gradually more consciously planned and taken forward. Consequently, data analysis was approached from a discursive and systemic perspective, too.

The craft for empowerment system

The large amount of collected data was diverse in format and nature and included many hours of audio and video recordings, pictures,

interview transcripts, handcrafted artifacts from workshops, and case study projects.

In the first step, using the bricolage method (Kincheloe and Berry, 2004, pp. 108-114), thematic fields were clustered and discussed from different perspectives. In this research, these clusters included 1) conceptual approaches and organizational formats, 2) skills and knowledge transfer, and 3) stakeholder concerns. This step was important in recapping and structuring many aspects of ethical craft initiatives. By better understanding these areas, it became possible to map stakeholders and their relationships from a bird's eye perspective (Kulick, 2024, pp. 253-256).
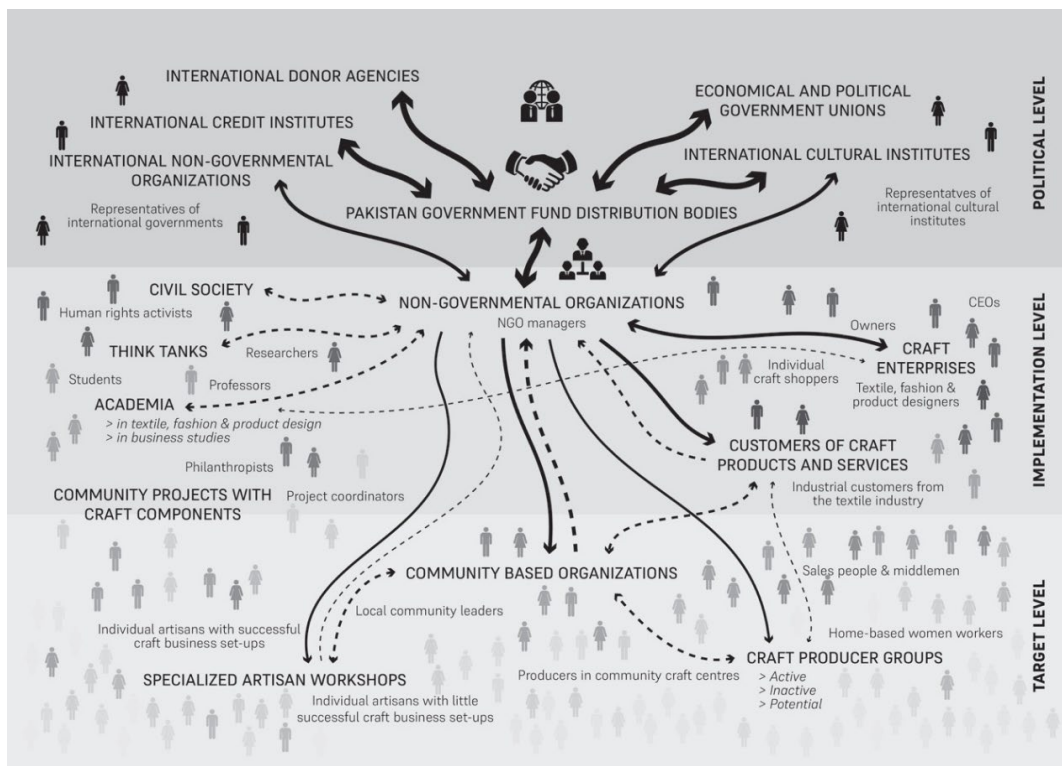
Fig. 1. GIGA-map of the craft for empowerment sector (Kulick, 2024, 257)

This step enabled to view craft for empowerment in Pakistan as a sector in its own right, instead of viewing craft related aspects as subparts of other sectors of development aid such as women

empowerment, employability, financial inclusion, heritage conservation, rural development and more.

Making the sector tangible as the craft for empowerment system created the basis for describing and analysing the shape and performance of the system informed by typical processes, structures, and mindsets, which over time has become a consolidated and questionable routine (Kulick, 2024, 253-282). This analysis provided insights into where ethical craft initiatives fall short of their expected goals, despite the genuinely good intentions, dedication, and expertise of those who conceptualise, support, and coordinate them.

Three levels can be identified in the craft for empowerment system.

1. **The political level at the top**: international donor agencies, governments, fund distribution bodies of the Pakistan government, and organizations and institutions that typically apply for aid grants.

2. **Implementation level in the middle**: entities and people applying for aid grants such as NGOs, government organizations, community organizations, educational institutions, research institutes, businesses, private initiatives, civil society, human rights advocates, philanthropists, and customers of craft products, individuals, and those with their own labels and product lines.

3. **The target level is at the bottom**: individual craft producers who are mostly home-based women workers, artisans with workshops, and craft producer groups and their communities

The main characteristics of and dynamics between the levels of the system are also identified:

- Large in scale with fuzzy boundaries spanning from local communities to international relations and to related fields such as development, culture, business and education
- Top-down dynamics of grant distributions, implementation strategies and measures for success
- Differing supportive network strengths in regards to ethical craft processes, with strong networks on the upper levels and fragmented ones towards the target level at the bottom
- Fading contours of stakeholders' identities at the bottom level, where they appear as an anonymous mass, whereas the ones on the upper levels have names and positions
- Alienation between stakeholders who do not know about each other's circumstances, perspectives, and in some case existence

Stakeholder relationships were visualised regarding the following aspects: flows of funding; skills and knowledge transfer; intensity, nature and direction of communication; and perceptions of each other's tasks and roles (Kulick, 2024, pp. 261-274).

In summary, funds flow top-down when grant schemes are decided at the political level and utilised by stakeholders at the implementation level who apply for them to work with people on the target level. Target-level craft producers usually do not have access to information about grant application opportunities and not the experience, ability or insights needed to apply.

Communication is initiated in most cases on the political or the implementation level; for example, when a call for proposal for a grant is launched, or when on the implementation level, stakeholders have a project idea and contact both donor organizations as well as target-level craft producers as their beneficiaries. The latter can initiate communication and project ideas only when they have a contact, perhaps from a previous project, at the implementation level. Communication within each level and between peers, colleagues, and project partners generally functions well.

How stakeholders perceive each other depends on how far apart in the system they are and their ability to access information. For example, most target-level craft producers cannot distinguish people who work with them during vocational training, especially if it lasts for only a few months with sporadic workshops. Apart from craft producer group coordinators, many training participants find it difficult to distinguish between project managers, design workshop leaders, and others. Generally speaking, target-level craft producers are not aware of the political level and how it communicates aid concepts and principles to the implementation level. Even if someone at the political level visits their community, the person is perceived as one more person who wants to help them. On the other hand, political-level stakeholders lack awareness of real-life conditions and concerns at the target level, as sporadic visits do not provide sufficient insights. Yet, they are in a position of power to develop programs to help people on the target level, for which they depend on information from implementation-level stakeholders. NGO and social enterprise managers who work more frequently with craft producers have a good understanding of the target level, and so do those academics who focus on outreach projects and craft traditions.

Marginalization, therefore, was not only identified as a feature of target-level craft producers but also of people who work at the political level. The significant difference is that political-level marginalization is a privileged form; if grant schemes do not achieve the desired impact, it has little to no impact on the lives and job opportunities of political-level stakeholders. They will launch the next programme. For target-level craft producers, whose marginalization is an underprivileged one, the lack of impact when attending an ethical craft training means either no change in their lives or in rare cases even a worsening, for example in case they gave up an underpaid job, hoping to have better chances after joining vocational training.

As a result, implementation-level stakeholders, play a vital role in the craft for empowerment system, because they are familiar with the structures, processes, and mindsets of the political level where they apply for grants as well as with the target level where they work frequently with craft producers. They also play a vital role because they have a longtime commitment to their work, often projects that they have founded or are associated with over long time periods, usually decades.

 An interesting realization was that the craft for empowerment system, despite showing inequity and alienation between stakeholders and shortcomings in achieving the anticipated goals, was that it keeps generating ethical craft initiatives. Grant schemes for which ethical craft initiatives can continue to be launched; project managers, founders, owners, and academics continue to dedicate themselves to their projects; designers continue to engage with craft producers; and craft producers continue to see the potential to earn

or achieve other benefits from attending activities (Kulick, 2024, p. 280).

This observation was important for the development of the coalescence-focused framework, because if the majority of stakeholders already have good intentions, show dedication, and have many years of experience, what can a design researcher contribute? Surely not guidelines. Especially the stakeholders on the implementation level, work in a very critically reflective manner, reacting to different obstacles with consideration, flexibility, and creativity.

5. Designing for coalescence – Empowerment as processes of growing together in a multi-stakeholder setting

As a result of this research project, a theoretical design framework was developed consisting of seven components: 1) paradigm, 2) goal, 3) impact, 4) principles, 5) design methods, 6) values, and 7) character (Fig. 2) (Kulick, 2024, pp. 283-299).

5.1. Deconstructing a framework of the current craft for empowerment system

As an intermediate step, these seven components were defined for the current craft for empowerment system's performance based on the systems analysis (Fig. 2), that found it to be dominated by strong hierarchies and top-down dynamics. Empowerment in the current system is considered an upward integration of craft producers into existing value chains; consequently, training and industry meetings focus on how they can fulfil customer demands. Therefore, the paradigm of the current ethical craft initiatives was defined as

'appropriation,' with the goal of helping them become partners in craft markets, risking a disappointing impact with continuous external fund dependency when this integration cannot be achieved. The principle is market orientation, and therefore, design methods in current ethical craft projects focus on product design trends and marketing strategies. The values informing this scenario are thoroughly honourable, building on solidarity, philanthropy and the wish to help those in need of it. There is no better starting point for grassroots empowerment. However, they also characterise ethical craft initiatives as being implemented in a formalised manner, focusing on teaching universal standards rather than learning about contextual conditions, limitations, and opportunities in the diverse environments of craft producers.

This current craft for empowerment system by all means deserves respect. It emerged and consolidated over time with the best knowledge and intentions. The underlying equation is that by making craft producers fit for the existing circumstances in the market, they can earn a decent income. However, reality rarely unfolds in such a linear way, and ethical craft initiatives are more frequent than not faced with unexpected challenges and wicked, or complex, unsolvable problems.

5.2. Designing for coalescence – an alternative design framework towards shared agency in the craft for empowerment system

The alternative framework (Fig. 2) focuses on the importance of gradually overcoming the alienation between stakeholders, especially those at the political and target levels, but also implementation-level

stakeholders who are not always aware of each other's expertise and projects.

DECONSTRUCTED DESIGN FRAMEWORK OF THE CURRENT CRAFT FOR EMPOWERMENT SYSTEM		PROPOSED DESIGN FRAMEWORK OF A DESIRED EMERGENT CRAFT FOR EMPOWERMENT SYSTEM
Designing for appropriation	**FRAMEWORK**	Designing for coalescence
Appropriation of craft producers' skills to mainstream market expectations from across the system	**PARADIGM**	Coalescence of people, perspectives, practices & processes from across the system
Craft producers' empowerment as partners in existing craft markets	**GOAL**	Equally shared agency in sustainable craft value chains
Universally streamlined project implementation Risk of disappointing experiences in craft value chains Dependency on relaunching project grants	**IMPACT**	Contextually sensible, feasible and connected initiatives Rewarding experiences in craft value chains Gradually increasing autonomy from top-down dependencies
Market orientation Adjusting to existing standards	**PRINCIPLES**	Co-release Reciprocal care
Unidrectional skills training for craft producers Product development Marketing strategies	**DESIGN METHODS**	Looping cross-level & peer-to-peer learning Forming supportive alliances Complementing each others' projects
Inclusion into mainstream Patronage Philanthropy	**VALUES**	Mutuality Equality Participation Integration
Universal Formalised Project based Taught	**CHARACTER**	Contextual Pluriversal Open-ended Emergent

Fig. 2: Juxtaposition of the proposed designing for coalescence framework with a deconstructed framework based on the current craft for empowerment system's performance (adapted from Kulick, 2024, p. 295)

Considering this alienation one of the main obstacles in implementing ethical craft initiatives, creating opportunities for mutual learning, better contextual understanding and making was considered a viable

direction for this design research. As such the focus was not primarily on developing design strategies towards integrating target-level craft producers upwards into markets and value chains. While that is also important, instead, the focus of this research shifted towards enabling strategies for all stakeholders to critically assess and gradually change the existing structures, processes, and mindsets, so that the agency of craft producers increases in projects that aim to support them and their communities.

The alternative framework's paradigm 'coalescence' translates as 'growing together' and aims to encourage stakeholders in ethical craft initiatives to learn mutually from each other about their respective perspectives, approaches and circumstances, and to collectively develop craft practices that are relevant, feasible and therefore empowering in the local context for craft producers and other ethical craft stakeholders. This may well involve thinking differently about how to respond to grant scheme requirements, for example, by suggesting more locally relevant strategies, or to conduct collaborations differently, for example, by involving people with different expertise for newly suggested and more relevant project components.

Suggesting 'coalescence' as guiding paradigm is a result of the participatory research process, in which small opportunities for growing and learning together were accepted and taken further with much enthusiasm and promising results, such as the new collaborations after the focus groups.

'Coalescence' serves as overarching paradigm, that informs the other six components (Fig. 6). The goal is to achieve more equally shared agency among all stakeholders, but especially for target-level craft producers, meaning to find ways of involving them at the beginning of a project, making information about other stakeholders and project conditions accessible to them, and letting them take the lead in identifying concerns regarding their lives, communities, and financial situation. The coalescence-informed impact is expected to achieve contextual relevance and autonomy for craft producers in their environments rather than universally streamlined processes that may lead to disappointing experiences and continuous dependency on grants. The principles 'co-release' and 'mutual care' suggest the importance of collectively changing the consolidated current system operations while being empathic and non-judgemental about the way other stakeholders approach projects, even if not agreeing with their behaviours and perspectives. The design methods in coalescence spirit exceed product development and marketing strategies and focus on building strong supportive alliances with other ethical craft stakeholders to make use of complementing expertise. Important is facilitating critical reflection, together with stakeholders from different system levels as a form of cross-level and peer-to-peer learning. Values support mutuality, equality, and participation more than integration into well-meaning hierarchies of philanthropy and patronage, whose roles remain important when they support initiatives towards autonomy and contextual relevance. Lastly, the alternative framework's character encourages pluriversal worldviews and contextual diversity, rather than trying to bend diverse contexts into universal standards.

The main objective of 'designing for coalescence' is that implementation-level and target-level stakeholders form lively, strong and constructive ethical craft coalitions in order to become more independent and autonomous to imposed instructions from the political level or gain a collective voice in decisions of the political-level. Taking reference from design anthropologist, development critic and postcolonial theorist Arturo Escobar's pluriversal understanding of 'autonomía', in the true sense of autonomy this does not mean to quit collaboration with political-level stakeholders, but to achieve an interaction on more equal terms, in which the local expertise and contextual relevance guide collaborations and supportive activities (Escobar, 2018, 172-176)

Changing the current craft for empowerment systems cannot happen fast or easily because its behaviour is impacted by structures, processes and mindsets that were perpetuated, established, and consolidated over several decades. In addition, systems change is emergent and open-ended. It cannot be prescribed. Instead, systems change happens through leveraging a change, small or large, into a system, and then observe how the system's performance changes (Meadows, 2009, pp. 145-165)

5.3. A lab concept as an implementation possibility of 'designing for coalescence'

To illustrate a possibility of implementing the coalescence framework, a lab format was conceptualised, rooted in insights and real-life activities observed in the research process (Kulick, 2024, pp. 300-324). The lab is thought of as an independent entity, not associated with any NGO, business, or university (Fig. 3). At this point the lab is

a projection, for how stakeholders of all backgrounds and levels are encouraged to come together and collectively conceive new approaches to ethical craft initiatives or components for their already existing ones. Through
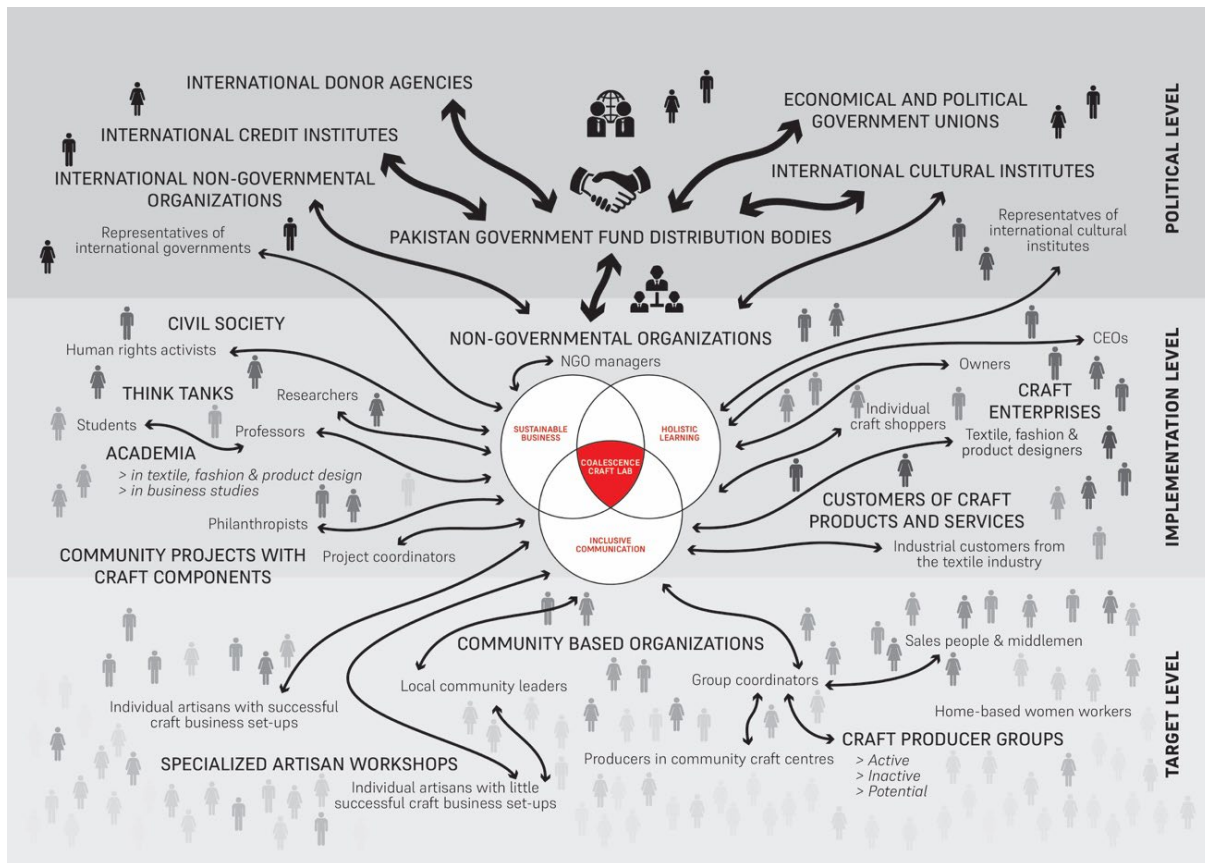
Fig. 3. The lab in the craft for empowerment system (Kulick, 2024, p. 301)

conversations, critical reflections, and collaborative practices, different stakeholders can benefit for their own respective projects by sharing their expertise and agency. Particular emphasis is on involving the target-level craft producers, because as the systems analysis showed, for them it is difficult to take the first step of initiating a project. The lab is envisioned as a self-organising

laboratory with different membership and participation options that encourage commitment to the collaboration and the task of improving the impact of ethical craft initiatives. The lab's characteristics therefore resonate with those of a 'community of practice,' which requires a domain (shared interest to improve the performance of the craft for empowerment system), a community (ethical craft stakeholders from all system levels) and a practice (ethical craft initiatives implementation approaches) (Wenger, McDermott and Snyder, 2002, pp. 29-40; Wenger Trayner and Wenger-Trainer, 2015, p. 2).

The lab combines the features of sustainable business, with craft production taking place at small scale at the lab as well as in different craft communities of Pakistan; holistic learning that enables lab members and participants to understand different circumstances, challenges and perspectives better; and inclusive communication that ensures transparency to all members and participants, including those target-level stakeholders that might be illiterate, or those stakeholders from any level that do not speak English or Urdu fluently.

6. Conclusions

The participatory research methodology significantly impacted the direction of this research project. The mutual impact between the research environment and its specific conditions, the research participants' openness and flexibility, and the researcher's immersive engagement in the field of ethical crafts enabled not only information about product designs, customer demands, and value chains, but more importantly, provided deep insights into the dynamics and relationships between different stakeholders.

Using this data, the craft for empowerment system was visualised, showing how top-down dominance, alienation, privileged and underprivileged marginalization, and preconceived roles of beneficiaries and supporters repeat and impact the implementation of ethical craft projects.

On a positive note, this established system dynamic allows ethical craft projects to have a continuous place in the development aid and grassroots empowerment portfolio of international and local organizations and governments, and therefore grant schemes that fit ethical craft initiatives' objectives continue to launch.

On the other hand, the continuation of old patterns, rooted in unquestioned mindsets about structures, processes, and preconceived stakeholder roles as beneficiaries and helpers, also poses limitations as they see empowerment as a unidirectional adjustment into mainstream. While grant schemes enable this process, they are not in line with real-life conditions in the concerned communities of craft producers.

The open-ended nature of this research process enabled both participants and researchers to challenge preconceived notions of concerns, definitions of empowerment, and stereotypical stakeholder roles. It was only possible though, because the evolving research process extended over about six to seven years, following up with some research participants even afterwards.

The collective critical reflections impacted both, their different activities, such as the case study projects or university outreach projects of the participants, and the way the researcher planned and conducted the action research project, the case study and the focus

groups. Frequent exchange of experiences showed that it is possible to translate insights and ideas from such critical reflection into activities that have more contextual relevance than top-down imposed strategies. While top-down dynamics and stakeholder alienation cannot be changed easily, quickly, or through instruction, systemic change might be possible in small steps and projects, closely linked to stakeholders' better understanding of each other's motivations, experiences, lives, and work conditions.

One core insight of the research is that stakeholder relationships can gradually become more supportive by creating situations for mutual learning and exploring the realities of stakeholders distant from the own position in the craft for empowerment systems. The focus groups were one example in which stakeholders realised how they could mutually support each other's projects by sharing their expertise and resources, and this small opportunity for exchange was welcomed with enthusiasm and constructive ideas.

What was most unexpected and encouraging was that village women from the action research project presented their idea of supporting design students and academics by helping them with their projects if they could get a small room in the university. The fact that they not only had this idea but also felt that they had a platform, the audience, and the opportunity to voice this idea is possibly one of the most empowering moments of this research project, because a typical characteristic of not being empowered is the acceptance of not having a voice. Theories such as subaltern studies (Spivak, 2008) and critical pedagogy (Freire, 1970), as well as the concept of development as a set of freedoms (Sen, 2000) unfolded here in real-life research.

The design framework 'designing for coalescence' aims to encourage stakeholders of ethical craft projects to collaborate towards a critically reflective and mutually supportive dynamic of the craft for empowerment system. While founders and managers of ethical craft initiatives deserve nothing but respect for their oftentimes decades-long dedication and experiences, they themselves have critically reflected on the limitations posed by the requirements imposed on them from the political level, but they have learned how navigate this re-occurring challenge. Because they know also the conditions on the target level well, they are in a position to assist the target-level craft producers in gaining a voice. Generally, implementation-level stakeholders may play a central role in tackling the challenge of alienation in the craft for empowerment system as they are equipped with knowledge and expertise to facilitate well between all levels.

Lastly, the lab concept could not be tried and tested during the research process because it would have taken another few years to do so and to determine its impact on the craft for empowerment system. This research result, though, offers opportunities for further, more design-led research and practice about how to implement 'coalescence' in grassroots empowerment.

The most constructive impact of this design research would be if stakeholders in ethical craft initiatives in Pakistan or similar environments, are encouraged to experiment with their practical approaches, guided by coalescence. Such activities in the craft sector can include product development and sustainable value chain management, but more importantly practical strategies for bringing ethical craft stakeholders together who currently do not interact much while impacting each other's projects.

One risk is that even emerging methods and practices manifest through unquestioned repetition. Therefore, it remains important to apply a combination of immersion, participation and collective critical engagement – similar to that in the discussed research process – when developing coalescence-led practice. Designers can play a vital role here in different ways, as they can contribute methods of visualisation, conceptualisation, and hands-on practical experiments, whether in a lab format or in other formats that are feasible.

Finally, if through such communities of practice 'growing together' as the translation of 'coalescence' does not only refer to 'coming closer', but also to 'becoming better together' the performance of the craft for empowerment system might show changes towards more shared agency.

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In addition to her role with Octa Fashion, Amanda publishes the annual magazine Octa Mag and serves as an editor for the journals Modapalavra and e-Revista LOGO. She also provides consulting services on trends and consumer behavior, contributing extensively to the fields of Fashion and Design.

Threads of change: A Haute Couture Collection embroidered with Sustainability and Inclusion

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Abstract

The creative economy plays a vital role in fashion, advancing inclusion, diversity, and job opportunities for marginalized communities while championing cultural representation through traditional textiles and digital platforms. It also promotes sustainable practices, including the use of eco-friendly fabrics. This article highlights the Ponto Firme Project, presented at Paris Haute Couture Week, led by Brazilian designer Gustavo Silvestre and French designer Kevin Germanier. Their collection garnered international acclaim for its commitment to sustainability, utilizing recycled materials and showcasing crochet techniques from Ateliê Ponto Firme, which trains vulnerable trans and cis women. The article illustrates how fashion can catalyze social change, fostering sustainability and inclusivity through collaborations between Germanier, Silvestre, and the Ponto Firme Project.

Keywords:*Fashion Design, Inclusion, Creative Economy, Fashion for all, Sustainability.*

Introduction

The creative economy includes industries that depend on creativity, intellectual property, and cultural expression, with fashion being a significant element. Within the realm of fashion, the creative economy promotes inclusion and diversity by generating job opportunities for marginalized communities, enhancing cultural representation through traditional textiles, and utilizing digital platforms. This approach empowers diverse talents by providing them with visibility and economic opportunities.

In this context, this article intends to present the Ponto Firme Project, which gained prominence in the last Haute Couture Week in Paris, through the partnership of Brazilian designer Gustavo Silvestre and French designer Kevin Germanier. To this end, bibliographical research was carried out on sustainability, inclusion, and representation in fashion, based on references from Berlin (2012), Mora, Rocamora & Volonté (2014), Ofori et al. (2025) and others.

The investigative stage of this study involved documentary research about the Ponto Firme Project, both designers and the SS2025 collection on official websites, reports issued by the specialized press, a video of the fashion show, and the documentary Ponto Firme Doc.

Kevin Germanier is acclaimed for his sustainable approach – using recycled fabrics, upcycling techniques, and discarded beads, but with a sophisticated and disruptive aesthetic. As the literature review on sustainable aspects of fashion, Daukantienė (2023, p.999) concludes that companies should prioritize the collection and recycling of used clothing. In line with the circular economy theory,

extending the lifespan of products is essential, which can be achieved through technical upgrades, resale, repairs, or recycling.

The SS2025 collection, in collaboration with designer Gustavo Silvestre, has garnered international recognition, marking a significant milestone as the sixth collection between the two designers. This edition, which made its debut at Haute Couture Week, showcases crochet techniques developed by Silvestre at Ateliê Ponto Firme. This atelier not only focuses on creative expression but also provides training and employment opportunities for trans and cis women in vulnerable situations.

This article aims to illustrate how fashion can serve as a powerful instrument for social change by promoting resources, platforms, and opportunities that honor social and cultural diversity. It seeks to enhance the inclusion of marginalized communities and raise awareness of environmental sustainability and cultural heritage preservation. A notable example of this successful collaboration is the partnership between Kevin Germanier, Gustavo Silvestre, and their sponsored project, Ponto Firme, which showcases the potential for sustainability and inclusivity within the global fashion industry throughout the entire product life cycle.

The limiting systems of traditional fashion

Fashion as a structured system was institutionalized by Charles Frederick Worth, an Englishman who postulated a distinctly different *modus operandi* for garment creation. In the latter half of the 19th century, artisan couturiers changed their practices: rather than visiting their clients and catering to their preferences, clients started visiting the designers' *maisons*. During this period, authorship in

fashion creation became evident, with designers signing their pieces with labels affixed to them, thereby granting them copyright protection (Campos, 2021).

The dynamics of previously created collections reverberated in industrialization and mass production processes, which altered the direct relationship between fashion designers and consumers. Great *magasins* and commercial brands further institutionalized the creative figure of the couturier (Sant'Anna, 2011). By the end of the 19th century, the rise of ready-to-wear and prêt-à-porter fashion dissociated luxury fashion from the ideals of artisanal craftsmanship and small-scale, refined production, aligning it with mass production practices (Corrêa; Guerra, 2023).

Starting in the 1980s, the fashion industry witnessed a fast production and consumption transformation, characterized by mechanisms and practices that reduced the costs and prices of products. This shift was driven by reproducing low-cost, trendy items perceived as discardable (Berlim, 2012). Fast fashion epitomizes the peak of fashion's acceleration and massification. Enabled by the sophistication of production and transportation technologies, as well as the internet, fast fashion introduced the launch of several collections within a single year. Allowing brands to respond quickly to sales data and align supply with demand (Campos, Gomez, 2016). However, this approach has raised concerns regarding environmental sustainability, ongoing issues of plagiarism, and inhumane working conditions, highlighting the limitations of the fast fashion model.

As a reaction, the slow fashion phenomenon proposes a reimagined outcome for the fashion system. This paradigm shift has prompted various transformative trends within the industry that

emphasize environmental, social, and cultural sustainability. Thus, the prevailing tendencies of speed, reproduction, homogenization, and deterritorialization announce counterpoints and constraints that lead to a redefinition of fashion's creation, production, and distribution processes.

Fashion, sustainability and inclusion

For several decades, the concept of sustainability has been framed as a solution to an urgent issue. It advocates for reducing the consumption of environmental resources, emphasizes minimizing the use of raw materials, and seeks to avoid product obsolescence or, at the very least, ensure proper disposal practices. In their editorial "On the Issue of Sustainability in Fashion Studies," Mora, Rocamora, and Volonté (2014, p. 140) note that implementing sustainable practices in the fashion industry is challenging due to the complexity of its production chain, which encompasses not only material goods and high levels of labor but also intangible factors related to brand values.

Among the challenges associated with the materiality of fashion items is the notable issue of overproduction and the premature and improper disposing of clothing. This predicament is largely attributed to fast fashion production and consumption methods, amongst rampant consumerism.

Some solutions such as the development of biodegradable and recycled fibers aim to alleviate the effects of production in the environment. More drawn to a change in consumer behavior, the slow fashion - the slow moment as a whole - intends to educate the consumer about the origin and destination of products, promoting a conscious attitude towards consumption (dos Reis & Wolf, 2010). A

growing practice that aims to reduce the environmental impact of fashion is upcycling.

Ofori (et al., 2025) consider upcycling to be a more promising method of ensuring a circular business model than recycling, which often derives a loss in value or downcycling. The German engineer Reiner Pilz created the term upcycling in 1994 precisely to indicate an enhancement of a product's value and longevity. "The goal of this procedure is to increase the aesthetic and functional value of the product by using designers' understanding of material handling and manipulation to give the product a distinctive appearance" (op. cit., p.6). In addition to a new fit, many techniques can be applied to the surface intervention, valuing the aesthetic appearance, such as mending, dyeing, layering, deconstruction, collage, weaving, knitting, crocheting, and others (Rissanen and McQuillan, 2023 apud Ofori et. al., p.6)

Upcycling addresses also immaterial aspects of sustainability, such as *sociocultural and psychological advantages, including a sense of community, a revitalized sense of pride and fulfilment, new knowledge and skills and a sense of empowerment. It makes it possible for people, organizations and communities to trade waste and share resources and expertise.* (Ofori et. al., op. cit, p.8)

In many aspects, social sustainability is put into practice by offering opportunities for education and training, creating job opportunities notably for those underprivileged (Sung et al., 2019). Social sustainability aligns with the design goals for social change by considering the social context crucial for sustainability. It promotes cultural transformation through sustainable fabrics in traditional collections, simplified care processes, extended product lifespans,

and broader definitions of beauty and fashion. "The pervasive endurance of the many homogenizing and stereotyping visions of beauty, health, and success that are typical of mainstream models of Western fashion" (Mora; Rocamora & Volonté, 2014, p.140) must be questioned.

As Isidro and Mesquita defend (2023, p.94), "a socially oriented design must be willing to recognize the knowledge and ways of being and producing of invisible, silenced or socially devalued groups." Likewise, sustainability regards the cultural dimensions of products, as well as their symbolic and immaterial content. It is noticeable on the part of different fashion brands how aesthetic standards are being placed in the spotlight, expanding traditional and Eurocentric fashion references. Many of those interventions occurred due to the collaboration between designers from different countries and between designers, artisans and crafters (Mora; Rocamora & Volonté, op.cit.).

Collaborative efforts between designers and craftsmen often result in exceptional products that stand out for their exclusivity, superior quality, artisanal craftsmanship, and aesthetic appeal. Such attributes enable these items to be valued and appreciated over extended periods. The exclusive and responsible approach of upcycling strongly reverberates with consumers who prioritize individuality, authenticity, and social responsibility. Thus, authorial fashion gains strength in select markets, where artisanal production, the cultural and artistic base of the places, the sustainability and material quality of the pieces, the relationship with the creator and the proximity to their creative process and the inspiration for their creation are valued (Campos, 2021). Authorial fashion enables the experience of space and time adherent to the conception and

production of the pieces. Therefore, the created pieces absorb the "soul" of the creator, attributing to them affective value and the sensitive symbolic experimentation of pieces (works) of clothing.

The creators

Kevin Germanier

Kevin Germanier is a young and accomplished fashion designer born in 1992 in Granges, Switzerland. He is the founder of the eponymous brand, renowned for its sophistication, as well as its commitment to environmental and social responsibility. The Germanier brand was established in 2018 after Kevin, a graduate of Central Saint Martins, received recognition for his talent. His signature style consists of statement pieces that serve as uniforms for ultra-feminine and glamorous women, embodying a futuristic warrior aesthetic characterized by striking color combinations and adorned with an array of crystals, pearls, glass beads, and sequins—each creation destined for a noble purpose beyond mere disposal (Kevin Germanier, 2025).

Dedicated to sustainable development, Germanier redefines luxury as a captivating blend of visual allure and environmental consciousness, garnering him significant acclaim in the fashion industry. However, the designer is keen to avoid being labeled solely as a proponent of sustainability; his upcycling practices emerged out of necessity during his years as a fashion student at Central Saint Martins. This experience shaped his creative process, which focuses on repurposing garments and materials, utilizing textile waste from other fashion houses to prevent overproduction (Les Echos, 2021). The outcome is a collection of colorful and eccentric outfits crafted from recycled materials, exemplifying high-quality artistry (RTS, 2021).

Germanier is also known for employing elderly knitters from his hometown in Valais, including his 82-year-old grandmother. In an interview

with David Berger, he stated, "I don't want to talk about ethical fashion anymore; sustainable development isn't a trend; it's a necessity" (Ibid.). The designer showcases in the official Paris Fashion Week from 2020, highlighting his substantial influence and recognition within the fashion industry.

Gustavo Silvestre

Born in 1980 in Recife, Gustavo Silvestre is a Brazilian designer, artist, craftsman, and educator in manual arts (Gustavo Silvestre, 2025a). He is recognized for integrating crochet into art, fashion, and sustainability. His connection to crochet began in childhood, watching the women in his family. (Ibid.) Despite being told it was a craft for women, he became a master of the technique and challenged this perception by teaching crochet in prisons, one of society's most rigidly gendered spaces.

In 2015, Silvestre was invited to teach crochet to inmates already familiar with manual work at a Penitentiary in the metropolitan region of São Paulo. The project has evolved into a continuous initiative aimed at training inmates and ex-inmates of the prison system while generating income for them. Since its creation, the course has successfully trained over a hundred students. Some of these individuals have reintegrated into society and continue collaborating with Gustavo Silvestre in his studio. (Isidoro & Mesquita, 2023).

Through his Ponto Firme project, Gustavo Silvestre introduces art and compassion into prisons, using crochet as a means of social transformation. He believes that fashion should be engaged with the realities of the world(Artigas, 2018). The designer acts, as MIsidoro & Mesquita (op.cit.) defend, as a facilitator, in the search for collective

solutions that prioritize the needs of a specific group, above individual professional expectations, when developing projects with the participation of socially vulnerable groups or communities.

Ponto Firme Project

The Ponto Firme Project was established in 2015, initially offering crochet classes to inmates at the Adriano Marrey men's prison in Guarulhos. The initial focus was on creating household items like rugs and towels (Gustavo Silvestre, 2025b). However, as the project developed, it transitioned to fashion, resulting in collections. The company Círculo, based in Santa Catarina, has been instrumental in this endeavor by supplying the materials needed for the crochet course.

This initiative provides inmates with an alternative path to professional reintegration upon release, particularly for those serving sentences for robbery, drug trafficking, and assault. Since 2022, the Ponto Firme Project has showcased its work five times at São Paulo Fashion Week, allowing inmates to display their craftsmanship, instilling pride, and serving as a deterrent to recidivism.

The project first appeared at São Paulo Fashion Week (SPFW) in 2018. In October 2022 it made its debut at Paris Fashion Week thanks to a collaboration with designer Kevin Germanier. In 2021, the initiative grew with the launch of Escola Ponto Firme, which provides crochet courses to individuals facing vulnerabilities.

The project brings affection, design, and aesthetics into a penitentiary, promoting social transformation through fashion and crochet for inmates and ex-prisoners. According to Silvestre, "Crochet establishes identity. Each crochet stitch is legitimate, and each person puts their identity into their craft work" (Bezerra, 2023, p.8). Thus,

every stitch and tie embraces and empowers its creators, aiding their recovery, resocialization, and the reconstruction of their self-esteem and autonomy.

Image 1: Gustavo Silvestre, models and artisans from Ponto Firme in SPFW 58, Foto: Felipe Rufino for L´Oficiell Brasil (Holzmeister & Viveiros, 2014)

The creature: the SS2025 Collection

This paper focuses on the Spring/Summer 2025 collection designed by Kevin Germanier, which was presented as the final show at Paris Fashion Week. On January 30th, the Swiss designer made his haute

couture debut at this prestigious event. This collection marked the sixth collaboration between Brazilian designer Gustavo Silvestre and Germanier, in partnership with the Ponto Firme Project. Their previous collaborations included four prêt-à-porter collections showcased at Paris Fashion Week and one at São Paulo Fashion Week in December 2023. For his haute couture debut, Germanier developed a collection by upcycling vintage pieces from luxury fashion brands. He emphasized that the process involved outright creation rather than simple customization. He explained, "We retouch, exchange the lining and embroider. It is not a customization, It's really this idea of having a piece that you love and want to adapt it to continue using it" (Mesquita, 2025). This approach extends the product's life cycle while reinterpreting its value.

Image 2: View of the line up of PFW SS2025 collection

Source:Launchmetrics Spotlight apud Coy (2025)

From the social and cultural sustainability perspective, Silvestre celebrates the appreciation for ancient techniques, commonly related to crafts, considered lesser arts and achieving questionable aesthetic

quality. "It is gratifying to see how an ancestral technique can be reinterpreted in haute couture, showing the unlimited potential of manual work", affirms the designer in a PR interview retrieved by Elle Magazine (Mesquita, 2025). Another impact of this social oriented practice is the context of production, as mentioned in the Ponto Firme subsection, since the project capacitates trans e cis women in vulnerable situations. For this particular collaboration, 15 participants dedicated 140 hours of manual work to execute seven full looks (Coy, 2025, s.p.).

The complete collection showcased sculptural pieces featuring a variety of surface treatments. It included flatter textures like crochet, knitting, and embroidered rhinestones, as well as three-dimensional textures that transformed silhouettes using sharp sticks, resulting in ample, explosive, and irreverent volumes. The collection presented a total of 27 looks for both men and women, many of which comprised mini and midi skirts, blazers, and suits.

The female models sported hairstyles with volume at the crown, reminiscent of 1950s-style quiffs. Many outfits featured thick, voluminous fringes at their hems and collars. The pants also showcased embroidery and material applications in various shapes and textures, contributing to the pieces' richness and rhythm. The coats were densely embellishing, either fully or partially embroidered, with figures or continuous prints that spanned the entire garment.

The outfits are entirely made of colored beads, assembled in blocks of color arranged in contrasting harmonies of saturated colors. These beads also make up headpieces, earrings, and necklaces. In some cases, these beads reach the feet, making up high and knee-high boots. Some beaded looks adopt elongated embellishments that

project from the body and generate geometric and atomic shapes, following dispersed directions.

Outfits made in crochet by Ponto Firme also configured twin sets either of blouses or suits, and skirts. The projected textures of the hems or collars had an organic morphology, like coral ruffles, and ruffles like grand and dense anemones. Some were shiny, as initially presented, and were made with metalloid ribbons, and others were matte, apparently using materials such as cotton or wool. In these ruffles, the outer edge has a lighter tone, projecting its outer face even further forward.

Image 3: Upcycled look by Gemanier, Silvestre and Ponto Firme SS2025

Source:Launchmetrics Spotlight apud Coy (2025)

Other costumes are composed of the accumulation of beads and crocheted threads, draped and overlapped, forming layers of materiality that transform the limits and movements of the body. The

profusion of textures and surface treatments, combined with the unusual choice of colors, invigorates the overabundance of stimuli, achieving a collection with a unique and fashion-forward look that three-dimensionally and visually intervenes in space and achieves a distinguishing result that draws attention to the Ponto Firme project, to the practices coming from culturally and socially undervalued groups: to the values of social design.

The confluence of timeless: weaving sustainability into long lasting apparel

Carvalho (2010) proposed that the dressed body enhances the interaction with various fabrics and textures that come into contact with the skin. In this state, the body is dynamic, expressing individual characteristics and its relationship with space. Designers Gustavo Silvestre and Kevin Germanier emphasize new ethical and aesthetic values through techniques such as stitching, finishing touches, three-dimensional printing, and diverse applications.

They creatively use ready-made clothing and other discarded materials as their raw materials, positioning their work within sustainable practices. This approach is known as upcycling, which transforms textile waste—usually destined for disposal or incineration—into new products that exceed the value of the original items.

As Ofori et al. (2025) attest, each upcycling creation narrates a transformation, emphasizing the creative and technical skills applied in transforming discarded materials into innovative and contemporary fashion pieces. According to the substantial literature review

conducted by the aforementioned authors, in addition to the collection analyzed, an upcycling clothing item that applies ancestral knowledge reinforces a silenced cultural base and presents an iconic and distinctive aspect. This type of valorization not only addresses visual and design aspects, achieving a singular appearance and one-of-a-kind products. Moreover, it drives the rapprochement between producers, consumers, and ancestral practices.

Our approach to sustainability surpasses technological considerations, such as the limited availability of materials and environmental preservation. It also encompasses social and cultural inclusion, a relatively new aspect of sustainability (Mora, Rocamora & Volontè, 2014). In this example, the action of design for inclusion especially involves the project of Brazilian Gustavo Silvestre, who faces challenges when personally coordinating the Ponto Firme project, working with vulnerable populations without support and resources. In addition to teaching crafts and providing social reintegration by employing people who have left prison systems, the designer rescues crochet as an artisanal practice, redefining it based on the designers' understanding and knowledge of material handling, manipulation, and techniques.

Likewise, Germanier sees in the transformations of second-hand clothes, manual knitting, and even kitsch aesthetics considered outdated or distasteful, a return to the stories of her grandmothers, his life story, and the need for reuse for economic and environmental reasons. By reintegrating and valuing this aesthetic, Germanier and Silvestre challenge the current structure of fashion, opening up to a counter-hegemonic performance of fashion design.

Traditionally, Isidoro & Mesquita (2023) argue that by neglecting non-institutionalized and dominant forms of knowledge, Brazilian design adopts a technical-scientific approach that marginalizes the capabilities and practices of culturally and socially undervalued groups. They suggest transgressing rigid horizontal and vertical structures to assert unique characteristics and dissolve hierarchies, creating a dynamic and continually evolving rhizome (op. cit., p. 94). The successful coverage of the collection and its impact on international media reflect a time that values cultural, social, political, and economic diversity. This collection, in particular, celebrates the potential and autonomy of varied perspectives, promoting a creative model that emphasizes inclusion and the appreciation of marginalized knowledge.

They offer a diverse range of apparel that is interconnected with the environment, various cultures, and minority groups. Their approach presents a poetic and practical experience in the act of dressing.

The artistic creations of Gemanier, Silvestre, and Ponto Fime serve as "rhizomes," intricately connecting diverse stories, worldviews, and strategies for environmental, social, and cultural sustainability across different continents. Through their work, they seek to reconstruct and redefine meanings, skillfully intertwining knowledge, cultural practices, collective memories, and the multifaceted nature of time. Their collection presents a rich intertwine of apparel, each piece thoughtfully designed to engage with the environment, celebrate diverse cultures, and honor minority groups. This innovative approach transforms the act of dressing into a poetic and practical experience, inviting wearers to connect deeply with the narratives and histories embodied in each garment.

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Nora Aly MSc

Nora Aly is an independent designer based in Cairo, Egypt. She works as an adjunct Professor at the American University in Egypt (AUC). She is mainly interested in Arabic typography which acts as a core element that she integrates in other creative endeavors such as visual communication, branding, type design and graphic design. Her interest in typography is also evident in how she engages with language, not only as a tool to manifest thoughts but also as means to shape our collective identity. She holds a master's degree in graphic design from the German University in Cairo. Nora Aly's work was featured in several exhibitions; Mena Art Fair in Paris, Arab Design in Doha, Weltformat in Switzerland, P21 gallery in London, Dubai Design week, Beirut Design week, and 100 Best Arabic Posters.

The Nubian Language: From Spoken to Written

Design Research to Prevent Disappearance of Traditional Languages

Abstract

Believing in the importance of cultural and linguistic diversity, this study explores the endangered Nubian languages. These languages consist of two dialects in Egypt which are only preserved by the tongues of its special ethnic native people who live in peninsulas and islands across the Nile in Aswan.

The study starts by a review of literature about the historical background of the language, its characteristics, multi-linguistic uses and how it evolved through the years, as well as the various political, religious and social occurrences/reasons that led to the deterioration of the language and the extinction of its script.

It also discusses how some fellow researchers and few locals attempted to document and save their vernacular.

The research resumed by conducting a field research in the Nubian villages to better understand the context of the language due to the lack of material and resources regarding this matter.

The field research was divided into two phases: the first one aimed at deeply and fully understanding the people, as well as the social and cultural aspects of the Nubian life. This was done through qualitative research by holding unstructured and semi-structured interviews, in addition to participant observation.

As for the second phase, the aim was to narrow down and validate all the data that was previously gathered into very specific fields of focus through quantitative research by holding more structured interviews, unlike the first stage. According to the fieldwork, it was concluded that the problem that should be tackled is the gradual disappearance of the language from Nubian homes because of mothers being indirectly forced to favor Arabic over Nubian. This was due to the need to prepare their children for the predominant Arabic speaking society that they will end up working and interacting with.

To preserve the language, the results of the study showed that it has to have a clear function that is financially and emotionally rewarding especially for the mothers. Accompanying this research, a new Nubian display typeface was developed to be used in henna designs presented in a kit for henna artists -who most likely happen to be young mothers or mothers to be- to develop henna art that is based on their language, aiming to bridge this socio-emotional and economic concern. This could be sold to tourists and visitors and provide the language with the opportunity of being spread. A lot of locals and henna artists were included in the process to ensure inclusivity, as well as relevance and sustainability of the proposed solution.

Keywords:

Traditional Languages, Cultural Studies, Preservation, Empowerment of Woman, Typeface Development

Would we ever be able to maintain our culture, if we lose our mother tongue? And by culture, I mean our sense of humor, the way we

express ourselves, our traditions, literature, music, art in all its forms, everything that defines us and shapes our identity?

Language is a major part of one's identity; sounds, vocabulary and structures differ from one language to another. Therefore, languages are not just considered as a tool to manifest our thoughts, but they also shape our minds and the way we think according to Lera Boroditsky, Professor of Cognitive Science at University of California San Diego and Editor in Chief of Frontiers in Cultural Psychology.

In her Ted Talk "How languages shape the way we think", Boroditsky explained that an aboriginal community in Australia, for example, does not have words for 'left' and 'right' in their language, instead, they use cardinal directions. People of this community would say "There is an ant on your south-west leg," to refer to someone's left leg. Additionally, this ethnic group greets each other by stating where they are going, instead of saying "hello". Being constantly aware of where they are heading at any time of any day, this special group stays extremely self-oriented in their lives, unlike anyone we might know.

Moving from stating directions to describing visuals, the word 'blue' in English is used to describe any shade of the color, while Russians have two completely different words: 'Goluboy' and 'Siniy' that refer to light and dark blue respectively. Although some people would think that this is a slight difference to be mentioned, Russians believe that it is important to be accurate and distinctive when it comes to the smallest details.

Human minds invented not only one cognitive universe, but 7,000 and they can keep on creating endless options (Boroditsky, 2017). The beauty of this linguistic diversity that shows the ingenious and

flexible capabilities of the human mind is subject to extinction. Unfortunately, we are losing an average of one language every week. In 2005, some linguists concluded that as many as 60 to 90% of the world's approximately 7,000 languages, may be at risk of extinction within the next 100 years (Boroditsky, 2017)

This summarizes the state of endangered languages on a global scale. On a national scale, there are some dialects in Egypt all preserved only by the tongues of special ethnic groups which the Nubian language- a language practiced in Nubian villages in Aswan, southern Egypt- falls under.

Several islands and peninsulas are located along the Nile River in this area that are inhabited by Nubians who consider themselves an independent ethnic group. They developed a common identity which has been celebrated in poetry, wall paintings, music and storytelling. They have their special language, very rich culture and traditions.

The shift of this language has occurred due to large scale processes and pressures of social, cultural, economic, and political attributes across hundreds of years during Egypt's profound history. The possibility of impending shifts appears when a language that was once used throughout a community in many domains becomes restricted in use as another language intrudes on its territory. Unfortunately, that is exactly what happened to the Nubian language being constantly threatened by Arabic since the rise of Islam within the area.

However, being a very closed community that is isolated in the southern islands and peninsulas, made it easy for Nubians to keep using their own language to communicate among themselves, and help the language survive all these years. Therefore, the Nubian

language became an only spoken language that was last seen written before the rise of Islam and that's why in 1973, Egypt used to employ Nubians in the Arab Israeli war, as code-talkers.

While very few individuals still know how to write the language in its last used writing system, the majority are not even aware of the existence of this alphabet or what it looks like.

There are many theories made by 19th-century anthropologists in which the origin of Nubians was debated. Some theories claim that they are originally Africans who migrated from the South choosing to stay in this area, consequently mixing with Caucasians from the Northeast and West Africa. Others claimed that Nubians are Caucasian Africans who got mixed with other Africans migrating from the South to Nubia. (Hamid, 1973)

Aside from their ethnic origin, different civilizations rose in Nubia during the fourth to the sixth centuries in Lower Nubia (Bianchi, 2004) which helped in shaping the Nubian identity.

It is essential for this paper to study the history of the Nubian language to get a deeper understanding of all the stages that affected it across the years to better understand the current state that the language has reached.

Historical context of the Nubian Language:

Meroitic language:

Meroe kingdom, also known as Kush, is located between the 1st and the 6th cataract of the Nile Valley known today as Nubia (Southern of Egypt and North of Sudan) during the 3rd century B.C (Before Christ) until the mid 5th century C.E (Christ Era). Kushite kings

conquered Egypt around 712-656 B.C and created an empire in which its borders extended from central Sudan, all the way to the borders of Palestine. With their leader Taharqa, they formed Egypt's 25th dynasty and were known as 'Black Pharaohs' (Mansour, 2008).

After that, they were confined to rule Nubia only under the pressure of Egyptians, Persians and later Romans, until the 4th century of our era. The Meroitic empire was divided for unknown reasons into three small states that were converted later to Christianity (Mansour, 2008): Nobadia, Makuria and Alodia.

Despite Kush or Meroe being regarded as an inferior era to Ancient Egypt's history, but this civilization was one of the most flourishing significant civilizations of sub-Saharan Africa (Mansour, 2008). Also, out of all the different local languages that were once spoken in Nubia and central Sudan, Meroitic is the only one that is well documented although it is not yet fully deciphered (Rilly, 2019).

The Meroitic language was spoken in this area during the 3rd century B.C until the mid 5th century C.E and its script, written from right to left, is twofold (Fig.1): the cursive script, derived mainly from Demotic, and the hieroglyphic script, which uses a selection of Egyptian hieroglyphs. Both sets include 23 signs in addition to a word divider (two or three dots). (Rilly, 2019).

The people of Meroe also used the Egyptian hieroglyphs as late as the 1st century C.E, but they appeared alongside the Meroitic script or were replaced by it. In the royal cemeteries at Meroe, Egyptian hieroglyphs were used exclusively in some inscriptions, while in others, Meroitic hieroglyphs were used just for the royal name completed by the Egyptian script for the rest of the text.

However, other inscriptions were written entirely in Meroitic hieroglyphs. Also, a cursive version of Meroitic was used for the majority of royal texts (Fig.2) (Mansour, 2008).

Mansour also highlights the existence of some features in the written language that demonstrates how common speed reading in the late period was, as opposed to some widespread ideas claiming that the last centuries of the kingdom of Meroe were a period of intellectual decline, which indicates that this period was the golden age of Meroitic literacy.

Some Egyptian Nubians I met in Aswan are confusingly convinced that Meroitic's alphabet is the original script of their currently spoken Nubian language and they transliterate the language using the Meroitic script. They are a group of three men, but they are trying to spread this knowledge among other Nubians and visitors through social media and in casual social gatherings. (Fig 3)

hieroglyphic	cursive	transliteration	values
		a	initial /a/ or /u/
		b	/ba/
		d	/da/
		e	/e/, /ə/, or no vowel
		h	/xʷa/ and /ŋʷa/ (?)
		i	modifier /i/
		k	/ka/
		l	/la/
		m	/ma/
		n	/na/
		ne	/ne/, /nə/ or /n/
		o	modifier /u/
		p	/pa/ (Egypt.) ; /ba/
		q	/kʷa/
		r	/ra/
		s	/sa/
		se	/se/, /sə/ or /s/
		t	/ta/
		te	/te/, /tə/ or /t/
		to	/tu/
		w	/wa/
		x	/xa/ and /ŋa/ (?)
		y	dummy vowel support
		:	word-divider

(Fig.1) Meroitic Scripts
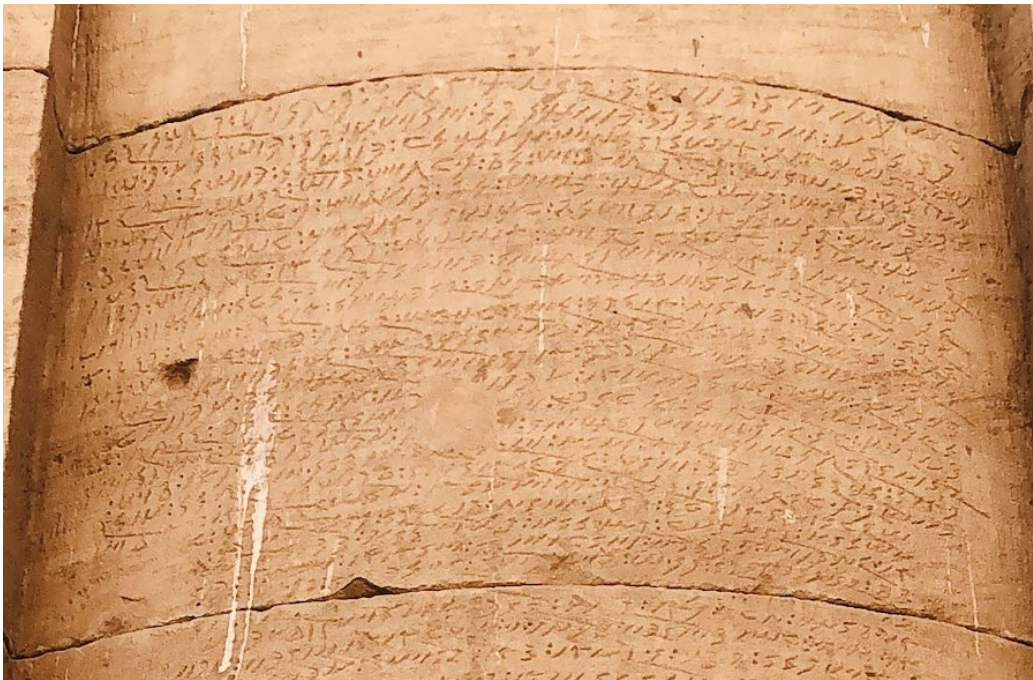
(Fig.2) Royal Meroitic Inscriptions in Kalabsha Temple
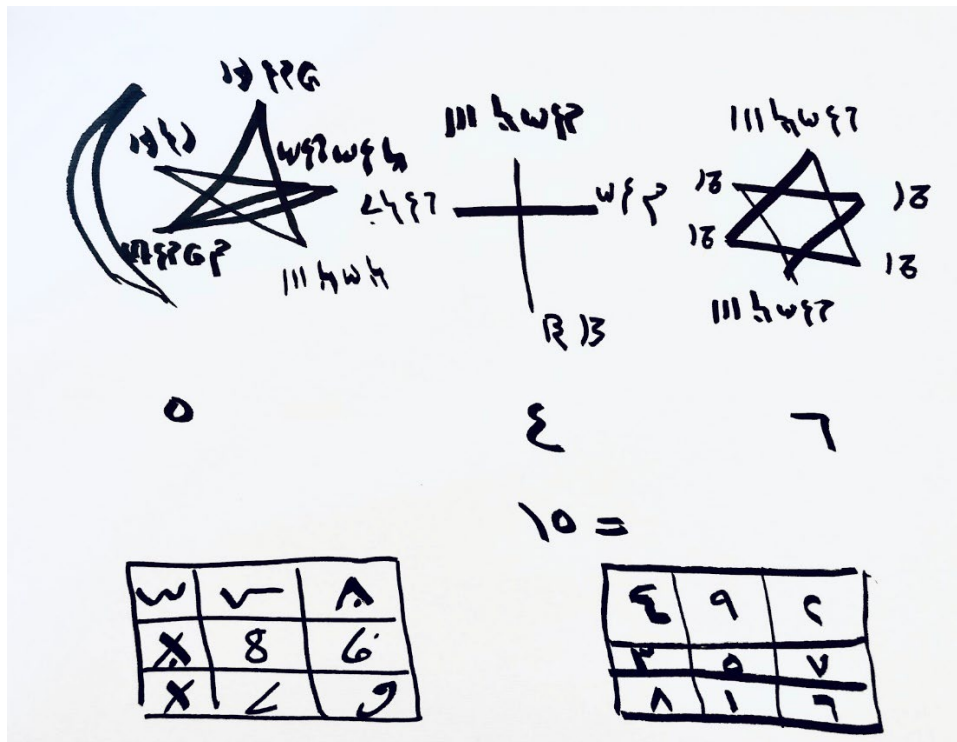
(Fig.3) Meroitic Talismans written by one of the locals in Gharb Seheil

Old Nubian Language:

Old Nubian, which is a Nilo-Saharan language belonging to the East Sudanic branch, according to Greenberg's classification, was the main language of the kingdoms of Nobadia, Makuria and Alodia (the area of North Sudan and Southern Egypt also known as upper Nubia and lower Nubia respectively).

The Old Nubian script was first discovered in 1906, when Karl Schmidt, a German scientist, bought a manuscript that he first thought was Coptic, but soon realized that it was a different language. Starting from this point, an intensive research into the Nubian language was developed by Griffith with his monumental edition of the texts (Griffith, 1913), followed among others by Zyhiarz (1928), Vycichl (1958), Hintze (1971-1986), Smagina (1986) and Browne (1982-1998). All the research that was investigating the Nubian language and its script were based on the collection of Griffith in 1913, which is estimated to be around 20 pages of continuous text until the construction of the High Dam. While the construction of the High Dam brought numerous negative consequences for the Nubians and their culture, it is worth noting that the excavations to save Nubian monuments from submersion led to the discovery of new texts, significantly expanding the Old Nubian corpus fourfold (Fig.4).

This new material has significantly improved the understanding of language and script. Nonetheless, it is still not clear how and when the Nubian language appeared due to a time gap that is estimated to be around four hundred years between the latest Meroitic documents and the earliest Nubian ones.

However, it is believed that old Nubian - which is the direct ancestor of the current spoken contemporary Nubian - was spoken and written during the Christian era of Nubia (6th -14th C.E) and was stopped

from being written when Islam replaced Christianity and dominated the region, making Arabic the official and most used language.
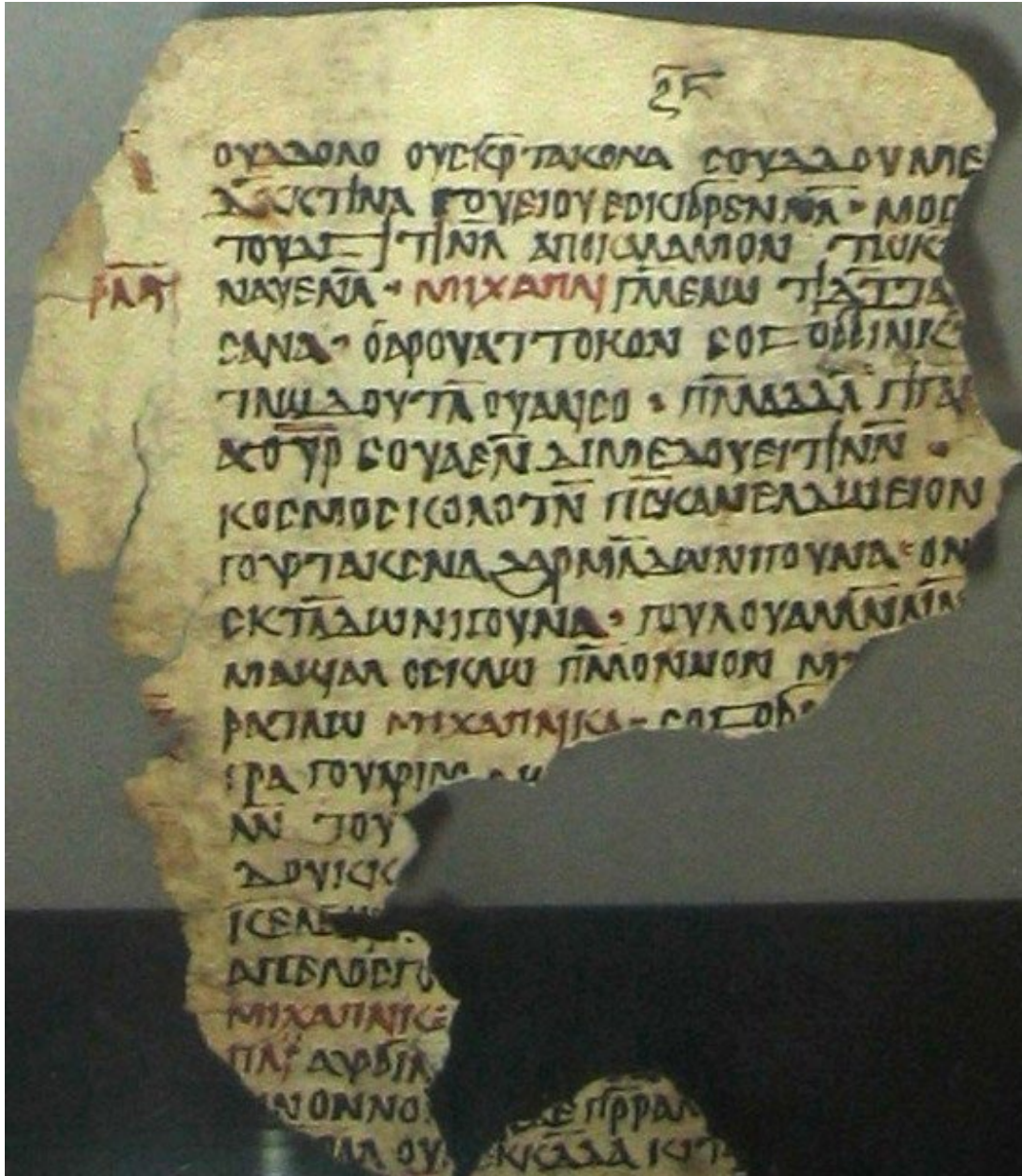
(Fig.4) A page of Old Nubian translation of "Liber Institutionis Michaelis Archangelis" found at Qasr Ibrim and now housed in the British Museum.

Characteristics of the language:

Old Nubian is divided into two different dialect groups:
- The Kenzi, also known as Matokki, and the Dongolawi group, which is split into two: Kenzi spoken in Northern Nubia (Egyptian part) which is the focus of this study, and Dongolawi spoken in Southern Nubia (Sudanese part).

- The Mahas or Fadidja, which is spoken in the Central area of Nubia (from Korosko to Dongola).

The Old Nubian script consists of 30 letters and it is written from left to right in a modified form of the Greek uncial (majuscule script) alphabet with additional characters borrowed from Coptic and Meroitic. The latter were borrowed to represent sounds in Nubian unknown to both Coptic and Greek languages. Although the Coptic alphabet was adopted to write old Nubian, for some unknown reason, the invariably upright Coptic letters were written by Nubian scribes on a slant. This makes Old Nubian the only known alphabet in the world to be written entirely in italics according to *"The Atlas of Endangered Languages."* Most of the Old Nubian texts are dated back to the Christian period on Biblical themes and were written on parchment paper. Half of the preserved material consists of religious content, including translations of the Greek New Testament, the Septuagint, and other Christian writings. The remaining material is documentary, comprising public contracts, private letters, and other similarly transient documents.The majority of the Nubian manuscripts can be found in the British Museum and Berlin Museum.

Evolution of the language and its script:

Although the script ceased to be written following the Nubians' conversion to Islam, it underwent several changes influenced by the socio-political climate.

A lot of concerns about losing the Nubian language without having any trace to it in our modern history, have been raised by many Nubian activists.

Therefore, the urge of writing and documenting the language started to appear a few decades ago resulting in a modified scripture composed of both Latin and Arabic alphabets in an attempt to make the Nubian language readable. However, it was not until Mokhtar Khalil Kabbara - a Nubian linguist and historian - that the original Nubian script made its way back to Egypt through his book "The Nubian Language: How to write it?" (Fig.5). In his book, Kabbara uses the original alphabet, but modifies it into 26 letters instead of 30. After the knowledge of the original script became popular among the Nubian scholars community in Egypt, some of them started to use it in its original form while others applied some changes to it.
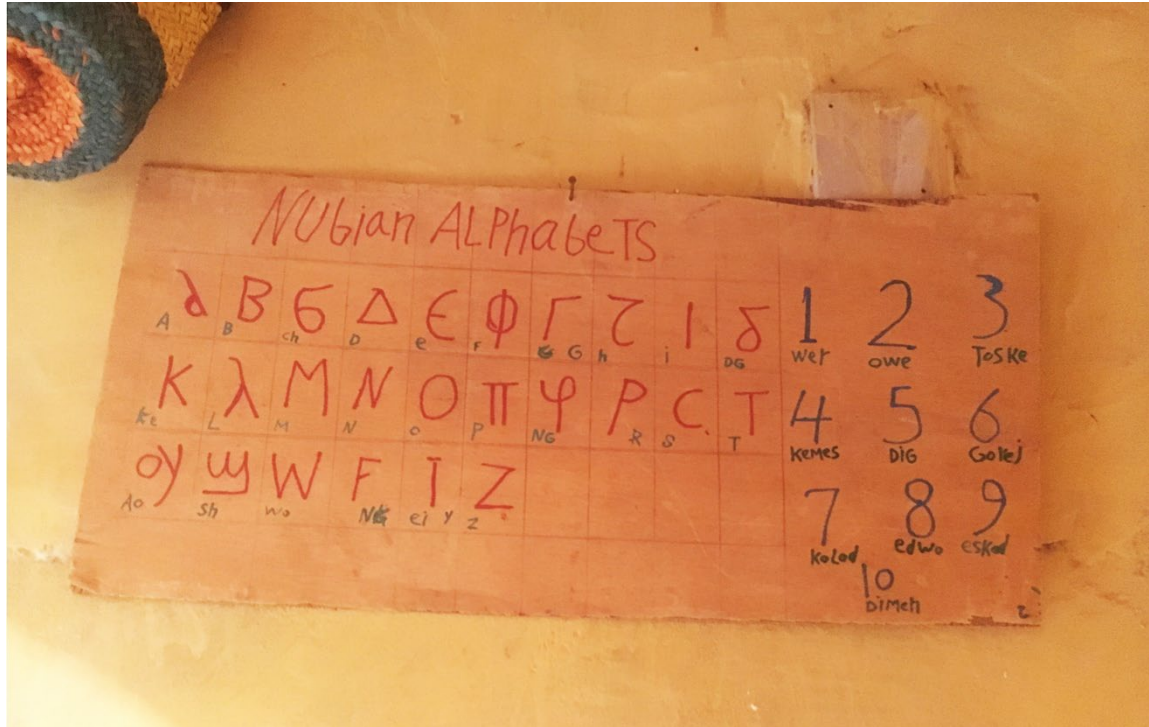
(Fig.5) The modified Nubian alphabet developed by Mokhtar Khalil Kabbara, found in a Nubian activist's house during the fieldwork in Seheil island, Aswan.

The use of Nubian in multi-linguistic applications:

During the medieval times, Nubia witnessed multilingualism.

Findings in Qasr Ibrim - the only archeological site that survived the flooding of Lake Nasser in southern Aswan after the construction of the High Dam - prove that Old Nubian was not the only written language of the region (Fig.6).

Many documents were found written in Meroitic, Hieratic, Demotic, Greek, Coptic, Old Nubian and Arabic.

Some of the Greek writings that have been found in the Nubian inscriptions, graffiti or documents were described as chaotic (Hagg,1978) and it is assumed that a pidginized Greek had been

adopted. Numerous graffiti artworks were found with a mix of Greek and Old Nubian which reflected popular use among the community. According to *The Atlas of Endangered Languages*, Greek was not the mother tongue of the scribes, and at times, they may not have been sufficiently proficient in the language.

Nowadays, the original Nubian script is only written by scholars and usually used along with Arabic or Latin writing systems for translation and documentation purposes.
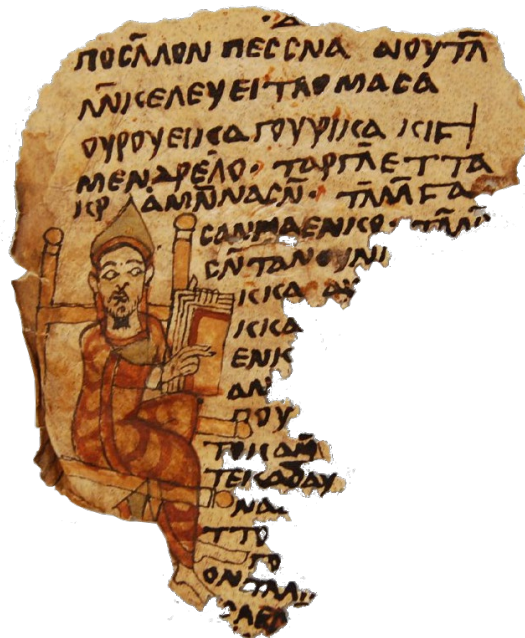
(Fig.6) Old Nubian manuscript that was found in Qasr Ibrim showing a bishop

Deterioration of the Nubian Language:

A language is the carrier of its people's culture. Anything that affects the language significantly will accordingly alter the culture in one way or another, its people and their future. The Nubian language, one of Africa's oldest, is rapidly deteriorating due to a combination of

political, social and global factors. I believe that this will lead to the slow death of the whole Nubian culture, hence losing an important part of Egypt's cultural heritage if we do not take a strong move towards preserving it on a national level.

According to the UNESCO Atlas of the World's Languages in Danger, degrees of endangerment are set to assess the level of any language's endangerment according to 5 main points (Moseley, Christopher (ed.). 2010) which are:

1. **Vulnerable:** Most children speak the language, but it may be restricted to certain domains (e.g., home).

2. **Definitely endangered:** Children no longer learn the language as their mother tongue in their homes.

3. **Severely endangered:** Language is spoken by grandparents and older generations. While the parent's generation may understand it, they do not speak it to their children or among themselves.

4. **Critically endangered:** The youngest speakers are grandparents and older, and they speak the language partially and infrequently.

5. **Extinct:** There are no speakers left.

According to Nubian and foreign researchers and scholars I spoke to who have been investigating this problem for a long time, as well as my field research that was conducted during this study, it turned out to be very clear (results are discussed elaborately in "Findings & reflections" section) that the Nubian language is between the 2nd and

the 3rd degree of endangerment. Adding to this, the fact that the language is currently only spoken with no script accelerates its endangerment process.

Moreover, there is a constant pressure coming from the West of certain social and cultural images that happen to confuse the third world countries to understand and recreate their national identities after foreign domination and hegemony. (Mahgoub, 1990) Aside from the globalization wave that affected a lot of communities and generations all over the world, there are other important events that are considered to be the main reasons behind the struggle of the Nubian language. This includes the conversion of Nubians to Islam which pushed the people to stop writing their mother tongue and use the Arabic language instead. The first step in solving any problem is to be aware of its existence, investigate it and study its origins to be able to understand and tackle it properly.

Conversion to Islam and script exctinction:

The Old Nubian language was once the main spoken language across the Christian Nubian kingdoms of Nobadia, Makuria, and Alodia, following the fall of the Meroitic kingdom. It used the Coptic alphabet supplemented by three Meroitic letters to represent sounds not found in Coptic. Although Nubia converted to Christianity within 50 years, the shift to Islam took nearly 1,000 years, indicating Nubia's strong cultural resilience, especially compared to Egypt. This period included the Baqt treaty, where Nubia exchanged slaves for Egyptian grain, maintaining a degree of autonomy.

However, Arabic gradually became dominant due to trade and political changes, particularly after the Ottoman conquest in the north and the Sennar Sultanate's control in the south during the 16th century. This marked the decline of the Old Nubian script, and the language survived only as a spoken form within close-knit communities.

As the script disappeared, the language suffered in both quality and continuity, incorporating many Arabic loanwords. Because most Nubians today are only familiar with the Arabic alphabet, many attempt to write Nubian using Arabic script, though it lacks the necessary phonetics, making it impractical and confusing. Some turn to Latin script or avoid writing entirely, relying on audio recordings or voice messages to preserve the language. The lack of a proper script also means the language faces digital extinction.

Without Nubian fonts or typefaces, it becomes difficult to digitize texts, create educational materials, or communicate online in Nubian. This pushes speakers to use other dominant languages that are better supported in digital platforms.

However, individual initiatives by scholars and linguists—such as Mohamed Khalil Kabbara—are working to revive the Old Nubian script and promote its preservation, though these efforts remain limited in scale.

The construction of dams in Aswan:

The displacement of Nubians began with the construction of the first Aswan Dam in 1902, just two decades after the British occupation of Egypt. The dam, later heightened in 1912 and 1933, flooded parts of

northern Nubia, forcing communities to relocate to higher ground (Mahgoub, 1990).

Nubians responded with quiet resilience, adapting without protest and maintaining their traditional way of life unaware that much greater upheaval lay ahead. Following the 1952 military revolution in Egypt, Nubia was divided between Egypt and Sudan, with Egypt controlling the areas between the First and Second Cataracts (Mahgoub, 1990). Under President Gamal Abdel Nasser, the High Dam project was proposed, promising national development through expanded agriculture and hydroelectric power (Mahgoub, 1990). However, its construction in 1964 submerged Nubia under the newly formed Lake Nasser, displacing around 50,000 Nubians from their ancestral homes. The displaced population was relocated to government-planned settlements called *El Tahjeer* in Kom Ombo—an area far from the Nile and culturally unfamiliar. While the state invested heavily in saving ancient monuments, it neglected to document the intangible cultural heritage of the Nubian people, whose way of life was drastically altered (Fernea, 1978). Many Nubians moved to Egyptian cities like Cairo, Alexandria, and Suez, or emigrated abroad to Sudan, North America, and beyond. This geographic scattering disrupted traditional community structures, pushing Nubians to adapt linguistically and socially to their new surroundings, often at the cost of their native language and customs. Gradually, Arabic became dominant in their daily interactions, especially among younger generations, leading to a decline in the number of Nubian language speakers. Along with their self-sufficiency, Nubians lost control over their food supply and agricultural choices, becoming increasingly dependent on government support (Mahgoub, 1990). The Fadidja dialect was most

affected, as its speakers made up the majority of those displaced. Most language preservation initiatives were thus led by and focused on Fadidja speakers. Ironically, this left the Kenzi dialect—spoken by the largest existing Nubian community between the Aswan Dam and the High Dam—largely undocumented. In response to this imbalance, this study focuses on the Kenzi dialect, aiming to support the living community and contribute to the body of work that protects and revitalizes this underrepresented linguistic heritage.

Unrecognized by the country:

Another major factor contributing to the decline of the Nubian language is its lack of official recognition within Egypt.

Despite the presence of Nubian-majority schools, the language is not taught, as school principals—many of whom are Nubian themselves—must adhere strictly to the national curriculum outlined by the Ministry of Education.

Likewise, university students are unable to study Nubian in linguistics departments, where other less common languages such as Hebrew or Vietnamese are offered. Therefore, the spaces where the Nubian language can be learned and used are restricted almost entirely to the private sphere within homes or local communities.

This lack of institutional support parallels other global cases where minority languages have faced endangerment due to state policies. A notable example is the Welsh language in the UK, which was significantly marginalized after English became the official language following the Act of Union in 1535.

The decline was reversed through organized youth movements, political activism, and cultural advocacy. In the 1960s, the founder of the Welsh Nationalist Party used a popular radio lecture to demand official recognition for Welsh.

This sparked the formation of the Welsh Language Society, which pushed for bilingual signage, Welsh-language education, and public media. Their efforts culminated in Welsh being granted legal standing in courts and public institutions, laying the groundwork for a national revitalization strategy (Rebecca C.M. Rempt, 2017).

A similar trajectory occurred with the Amazigh people—indigenous to North Africa—whose language, Tamazight, was long suppressed under Arab nationalist regimes. In Algeria, Tamazight only gained official status in the constitution in 2016 after decades of resistance to Arabization policies (Chtatou, 2019). In Morocco, state support began in 1994, with King Hassan II acknowledging the significance of the Amazigh identity, followed by the establishment of the Institut Royal de la Culture Amazighe (IRCAM) in 2001 under King Mohammed VI. IRCAM led the standardization of the vernacular language and its integration into education and media.

In 2003, Morocco adopted Tifinagh as the official script, and its subsequent inclusion in Unicode marked a significant milestone in the digital recognition of Tamazight (Ataa Allah and Bouhjar, 2019; Andries, 2008).

In Libya, Amazigh communities experienced a language revival following the fall of Muammar el-Qaddafi, who had banned Tamazight. Despite a shortage of teachers due to generations of suppression, the language is now being taught in Amazigh-populated areas and at a Libyan university, with support from educators from Algeria and

Morocco (Spreading the Word: Libya's Berber Language Revival, 2016).

These global examples underscore how official recognition alongside grassroots activism can profoundly transform the vitality of a language. They highlight what is currently missing in the Nubian context. While individual efforts by scholars and activists continue, the absence of governmental support limits their effectiveness. For Nubian to survive and thrive, a national stance acknowledging and supporting the language is essential. Without structural backing, revitalization efforts remain isolated and insufficient to reverse the decline.

Language fading from Nubian homes:

As explained earlier it is clear how the education system in Egypt is based on Arabic and is not inclusive for linguistic diversity which makes the Nubian language only taught by mothers at home. Therefore, children learn the Nubian language from their mothers, keeping alive most of the words for objects and activities inside the house. As for the rest of the language, it is rapidly being forgotten and replaced by Egyptian-Arabic. (Mahgoub, 1990)
Mahgoub also highlights that women have become bilingual and the language they teach their children is greatly affected by the introduction of new words and terminologies. The youth, who seem to be speaking the language, are no longer speaking the language correctly according to the criticisms of the elderly. Because children learn the language from their mothers at home before they are exposed to the world outside, most of the vocabulary used inside the house is Nubian while the vocabulary used in the outside world is

Arabic. This is because the exposure of women to the public, especially the market, where Arabic is dominating, forces them to speak Arabic in the Souqand other public places.

Mahgoub also concluded during his field research that according to the older people, the younger generations do not speak the language at all. As the youth are still not practicing the Nubian language up to this day, this shows that the problem has been occurring since the date of his paper, thirty years ago.

What is happening also during the current decade is that mothers are starting to make a conscious decision of not teaching their children their native language at all, favoring Arabic instead, since it is the main, dominating official language of Egypt.

There is a misconception among Nubian mothers, which is difficult to trace its origin, that teaching the children Nubian in their early years will distract them from learning Arabic properly, hence causing problems for their children in coping with the outside world. They choose to avoid this risk and teach them Arabic instead of their vernacular, hoping that their kids will pick up Nubian when they grow up by interacting with their grandparents as well as other relatives who are fluent in Nubian, and in some cases, is their only spoken language. This resulted in young generations that are unable to speak Nubian. Although they might understand it, they always choose to reply back in Arabic, while some of the children don't understand Nubian at all. During my field research, I learned a few words and phrases in Nubian.

Whenever I met a child, I tried to start the conversation in Nubian, but I rarely got a reply in the same language; they would either understand and reply in Arabic or they wouldn't understand at all and say "I don't speak Nubian". This is one of the critical points that will lead to the highest degrees of endangerment according to UNESCO's criteria of assessing a language's endangerment status as discussed earlier in this chapter. While mothers can't be blamed as they are left with no options in a country that does not support marginalized communities, they, unfortunately, don't see any value or a clear function for their native language.

Nubian is only used for communicating between one another within their small community, but even Arabic can replace this function easily.

Field Research:

Due to the limited resources available in terms of books and documentation, the most convenient methodology used to address the problem and gather as much information as possible was no other than gathering insights firsthand by living with the Nubians.Not only is there a lack of resources, but also the majority of the available material is relatively old. The most recent research paper that explains the Nubian's culture and lifestyle in all its forms including their language was produced three decades ago. Understanding the current context is crucial to effectively compare it with the previous experience of fellow researchers and to develop a solution that is relevant to the present situation. This means that the field research is not only a plus, but a necessity for this study.

I adopted an anthropological approach during the fieldwork, studying the Nubians in real-life situations to explore how modern-day individuals interact with their language. This included investigating how the language is used in daily life, its frequency of use, and gaining a comprehensive understanding of their social and cultural aspects.

The field research was split into two phases: The first phase was about conducting an exploratory trip for a one-month period.

The aim of this phase is to explore the Nubians and their culture as explained earlier, using qualitative research by using participant observation, unstructured and semi-structured narrative interviews as methods. Having no time-limits will enable the interviewees to feel comfortable and be willing to share as much information as possible. The more data I gathered from these interviews, the better during this primary stage.

While the second phase focused on narrowing down the fields of focus, the duration of the second trip will also be for a one-month period, aiming to assess the leverage points that were gathered from the first phase, further analyze them and choose one to proceed with. Unlike the first stage, this part of the research will adopt quantitative research through structured interviews.

First field review:

The first phase of fieldwork began with a deep immersion into the daily lives of the Nubian community through participant observation. This method was chosen to overcome the outsider perspective I had previously held as a tourist, and to adopt an anthropological lens—one that seeks to understand the world from the viewpoint of others. Observation was crucial for grasping not only the status of the Nubian

language but also the cultural context in which it exists, including gestures, routines, and social habits that are often overlooked yet deeply telling of a community's identity.

Unstructured and semi-structured interviews served as the second primary method. These conversations were intentionally casual and open-ended, allowing participants to express themselves freely and build trust. The Nubians' warmth and extroversion made it relatively easy to engage with people across different age groups. I adjusted my questions based on each individual and didn't shy away from questioning or probing deeper into cultural norms and social beliefs—especially where hidden struggles might reveal aspects of collective identity.

To ensure the documentation of this journey, I used photographs, videos, field notes, and post-interview self-reflections. However, photographing women proved difficult due to cultural sensitivities, leading me to rely primarily on note-taking for these encounters.

Decisions made during this phase significantly shaped the research experience. Choosing *Heissa Island* as a base was strategic—its geographical isolation between the Aswan Dam and the High Dam meant its residents were less exposed to tourism and thus retained stronger ties to their language and traditions. Unlike more touristic areas like *Gharb Seheil*, Heissa remains less accessible and less commercial, making it more suitable for an authentic, immersive experience.

Though my original plan was to live with a Nubian family, logistical and cultural barriers made this unfeasible. Instead, I stayed at a small three-room lodge named *Kenzi*, coincidentally sharing its name with

the Nubian dialect under study. The lodge staff; Bibi, Mando, Kommai, and Nasser became the first contacts and participants in the study, providing rich insight into food traditions and local life. These early interactions laid the groundwork for a deeper connection with the community.

Eventually, I moved into a rental owned by *Aam Sally*, a retired man living by the Nile, surrounded by relatives. Out of respect for the Nubian custom of not accepting money from guests, I decided not to burden any family and opted for this rental while remaining in close contact with surrounding households.

Finally, selecting local guides—or *fixers*—was another key step. I chose two individuals from different generations: one elder fluent in the original Nubian language to provide historical context and connect me with older residents, and a younger guide to facilitate engagement with the youth and modern aspects of Nubian life. This dual approach ensured a balanced and multi-generational perspective on the current status and transformation of Nubian identity and language.

Choosing Aam Sally as my elder guide turned out to be one of the most impactful decisions of the research. His deep knowledge of the community and fluent command of the Nubian language made him an invaluable connection to the older generation. For a younger counterpart, I selected Hamada Zizo, a 30-year-old boatman and occasional guide whom I met during a *Mawlid* celebration. Hamada's vibrant energy, sociability, and eagerness to help made him a perfect match for the dynamic demands of my fieldwork.

Building rapport with the community required intentional ice-breaking strategies, especially to overcome the barrier of being

perceived as an outsider or researcher. One particularly effective and unplanned strategy emerged when Hamada gave me a Nubian name: "Sandaliya", meaning *Sandalwood essence*—a cherished fragrance used in bridal henna rituals. He also taught me how to introduce myself in Nubian: "**Aygi Sandaliya Era**."

This simple phrase became a powerful tool for connection. Whenever I introduced myself as Sandaliya, people would light up with surprise and amusement, often leading to enthusiastic conversations. The gesture of adopting a Nubian name deeply resonated with the community and sparked curiosity and pride, especially among women who were otherwise reluctant to teach the language to their own children. Many began teaching me new words and phrases on the spot, touched by my interest in their language.

Over time, I became known island-wide not by my real name but simply as *Sandaliya*. No one asked for my actual name, and more importantly, I was no longer treated as a visitor, but as a local. The name served not just as an ice-breaker, but as a symbol of mutual respect and cultural connection that shaped the rest of my time in Heissa.

The People:

During my research in Heissa and other northern Nubian villages, I quickly discovered the warmth, generosity, and deep-rooted traditions of the Nubian community. What began as a short walk turned into an immersion of endless tea invitations, spontaneous friendships, and a new identity—"Sandaliya," my given Nubian name, which became an instant icebreaker and symbol of acceptance.

Guided by locals like Hamada Zizo and Aam Sally, I visited nearly all Nubian villages in Aswan, witnessing the decline of the Nubian language and the shift toward Arabic names and customs. Despite their cultural isolation, Nubians are remarkably open, often leaving their homes unlocked and resolving conflicts through *El Majles*, a traditional council of elders.

The men often work in tourism and surprisingly indulge in hash and alcohol, even around family, while women—though strong and central in households—still face restrictions, particularly around education and relationships. Yet, beneath conservative surfaces, many girls expressed ambition, curiosity, and a longing for more autonomy.

What struck me most was the unwavering sense of safety, trust, and communal solidarity. Nubia is not only a place—it's a way of life where simplicity, pride, and kinship endure, even as modern pressures quietly reshape its future.

Community Centers:

Nubian villages center much of their social life around the *community center*, or *Gam'eya*. These spaces—most notably Heissa's—are hubs for daily gatherings, celebrations, and communal meals. Their role varies by village, shaped by elected local leaders. In Heissa, the center hosts nightly games, social storytelling, and even nursery classes. Elsewhere, centers have broadcast World Cup matches or offered workshops and medical convoys. More than just a gathering space, the community center reflects the Nubians' deep kinship, adaptability, and commitment to collective well-being.

Nubian's relationship with the Nile:

The Nile, called *Essi* in Nubian, is central to Nubian identity, shaping daily life, traditions, and beliefs. Living close to the river, Nubians rely on it for drinking water, bathing, swimming, fishing, and even storytelling. Many believe that drinking directly from the Nile in Aswan creates a lasting longing to return—prompting locals to encourage visitors to try it. Homes traditionally store Nile water in clay containers called *Zeer* to keep it cool.

Children learn to swim in the Nile from as early as age 3, using makeshift floatation devices made from plastic barrels. Daily bathing in the Nile is a cherished ritual, especially among elders like Aam Sally, who believes it ensures a good day.

Cultural beliefs around the Nile are rich and spiritual. In her 1970s book *A View of the Nile*, Elizabeth Fernea recounts a folktale in which a noble prince, fleeing from evil enemies, drags his sword across the land as he escapes. Wherever the sword touches, the ground opens and water flows, forming the winding path of the Nile. The river protects him until he disappears into the Mediterranean—leaving behind the Nile as a symbol of life and protection. While locals hadn't heard this story and questioned its authenticity due to non-Nubian words like "prince," its symbolism still resonates with how Nubians view the river.

They also believe in spiritual beings living in the Nile—benevolent ones called *Malayket El Bahr* (Angels of the Nile) and harmful ones known as *Dogir*. Before entering the river, it is customary—especially among older generations—for Nubians to say a prayer in their language: "Walargi izermenu wlaar ekki bizemenu," which means "You don't harm us, we don't harm you." This simple phrase expresses

a wish for peaceful coexistence between humans and the unseen beings of the Nile.

Though such beliefs are fading among younger generations, storytelling continues to serve as a bridge for cultural memory. One widely shared tale tells of a grandmother whose hand mysteriously swelled after her water bucket broke in the river an ailment that defied medical explanation but was later understood by a village sheikh as punishment from a disturbed Nile spirit. Such stories, passed down through conversation and memory, help preserve the mythological dimension of the Nile. Overall, the river remains both a physical and spiritual lifeline in Nubian culture.

Nubian Homes:

Nubian houses are a defining feature of the culture, admired for their hand-painted facades and thoughtful, environmentally-conscious design. Built from mud and gravel, with clay bricks forming domes and triangular openings, they provide natural insulation against Aswan's intense heat. Their architecture reflects the Nubians' deep connection to nature and adaptability to their environment.

Every Nubian house typically has two entrances—one at the front and another at the back—to allow women to exit discreetly when guests are present, preserving privacy. A bench known as a 'Mastaba' is placed outside for neighbors and relatives to gather, reinforcing community bonds. Inside, a spacious courtyard or *Housh* serves as a central hub for social life, hosting pre-wedding celebrations, family meals, and ceremonies. Homes often include at least two bedrooms, following an old tradition where newlyweds stayed with the bride's family for 45 days.

Decorative elements also carry cultural meaning. Outer walls are adorned with hand-drawn images of birds, palms, and suns using natural pigments. Hanging plates once common at doorways are believed by some to ward off the evil eye, while others see them as mere decoration. A lesser-known theory claims the plates signified a male resident's presence, and would be broken by his wife upon his death—though this explanation is not widely accepted by locals today.

Art and Crafts:

Art and craftsmanship are deeply embedded into Nubian culture. Known for their architectural ingenuity, Nubians—especially women—are also skilled artisans. Nubian women traditionally weave dried palm leaves into decorative plates, coasters, and tray covers, and have recently adapted the craft to create colorful bags. However, this tradition has mostly disappeared in villages like Heissa, surviving only among displaced communities in Tahjeer, whose products are sold in local bazaars.

Pottery and beadwork were once common but have largely vanished. Nubians used to craft belts, shawls, and jewelry with copper, shells, and colored beads. Efforts to revive copper jewelry-making are underway through occasional NGO-led workshops. Two sisters, Doaa and Asmaa, were among the passionate attendees and also practiced henna art.

Henna is a major cultural tradition and profession for Nubian girls, renowned across Egypt for its quality and beauty. While some artists now incorporate modern, minimalist designs by request, traditional floral patterns remain central especially for brides, who choose elaborate designs for their wedding night. Grooms also wear henna,

sometimes with personal or unexpected motifs, like the Apple logo one groom unknowingly chose to stand out. A beloved custom during the "Henna night" involves writing heartfelt wishes on the walls of the groom's home.

Music:

Nubian music plays a crucial role in preserving the Nubian language, making it one of the few domains where the language remains actively used. Loved by all generations, even children who don't speak Nubian fluently can often sing popular songs by heart—though many don't fully understand the lyrics without asking their parents. Music is embedded in daily life and gatherings, where instruments like the *doff* (tambourine) are played spontaneously, turning casual evenings into communal celebrations.

Nubian songs often draw from real-life stories—like women fetching water from the Nile or the dreams of young girls—and are not limited to themes of love. The trauma of displacement has also heavily influenced their music, with icons like Hamza El-Din reflecting this loss in their work. Arabic music has left its mark too, with popular songs being adapted to Nubian lyrics, sometimes blending both languages.

Live music at Nubian weddings offers an unforgettable experience, showcasing not only powerful performances but also distinctive, intergenerational dance traditions. Prominent figures like Mohamed Mounir, a Nubian singer raised in Cairo, helped spotlight Nubian identity by incorporating Fadidja dialect lyrics into his music. However, opinions are mixed—some feel he could have done more to uplift his community.

Recently, a new wave of Electro/Shaabi Nubian music has emerged, sparking both excitement and concern, especially among elders and some youth. Still, as long as the Nubian language continues to find a voice through music, many see this evolution as a natural and necessary part of cultural growth.

The language:

During a visit to a *Mawlid* celebration in Tenqar's village, I noticed that children were speaking only Arabic while playing. This sparked a conversation with a group of local mothers about whether they pass down the Nubian language to their children. Most of them, particularly Fatma's mother, explained that they chose not to teach their kids Nubian because they believe Arabic is far more important for their future. They shared concerns about their children being bullied or ridiculed for speaking with an accent, struggling in school, or facing limited job opportunities.

Fatma's mother was especially firm in her stance, even recounting how she once punished her daughter for speaking Nubian, believing it to be in her best interest. While a few other mothers seemed conflicted, most supported this decision. I also learned that although their husbands mostly disagreed, the women were the ones making language-related decisions at home.

As I continued my visits to other villages, I observed a clear pattern: the closer a village was to Aswan, the more Arabic had overtaken Nubian, particularly among children and younger adults. Although some individuals, like Hussein Shalali and Zizi from the Nubian Museum, are working to preserve the written form of the language,

its use in public spaces—such as signage or boat names—is rare and mostly in Arabic or Latin script.

Currently, the Nubian language survives mainly in music and within the home, used by elders and in some family interactions. However, these domains are not enough to stop the language from gradually fading away.

Ceremonies and Occasions:

Nubians have unique ways of celebrating life events like weddings, religious holidays, and the birth of children. Weddings are major communal events that often stretch over several days. One key tradition is the *Okjar*, where the entire village is invited to breakfast at the groom's house, followed by the groom and his friends personally delivering wedding invitations—an essential gesture, as digital or phone invites are seen as disrespectful.

I was invited to join one of these *Okjar* outings, where the groom and his friends, all dressed in white *galabiyas*, visited each household, offering tea or sweets and leaving printed invites if no one was home. The groom is marked by a traditional red bracelet with shells, worn throughout the wedding events.

Pre-wedding celebrations include *henna night*, where guests apply henna, socialize, and enjoy dinner. In the days leading up to the wedding, families host gatherings with music and sometimes live Sufi performances, known as *Leila*. These events vary based on a family's financial means and village customs.

On the wedding night, the bride is welcomed outside the hairdresser's with a *Zaffa*—a traditional Nubian street procession of music and dancing. The bride wears a white dress and shows her hair, while the groom changes from a tuxedo into a *galabiya*, keeping his red bracelet. Weddings are vibrant, with beer, dancing, neon lights, and live Nubian music often lasting until sunrise.

They also have distinctive ways of marking religious events like *Ashura*, visiting the Nile to offer dates, rice, and henna, and collecting water for blessings. At night, men and boys play with fire using *Dom* branches.

When a baby is born, they celebrate *Sebou'* on the seventh day. The mother and her female relatives take the baby across the Nile seven times before bathing the child in the river for blessings.

Second field review:

After completing the first phase, which involved immersing myself in Nubian social and cultural life, I returned to Cairo to process the experiences and data I had gathered. This break allowed me to reflect and prepare for the second phase, which required narrowing down the findings, identifying key leverage points, and defining the most effective area of intervention.

The second phase involved a return to the field for a more targeted research trip. This time, I conducted quantitative research to validate the insights from the first phase and to help finalize both the leverage point and the target group. While it was already clear that the Nubian language was rapidly disappearing, it remained uncertain how or where to intervene effectively. This led me to organize structured

interviews specifically focused on the language issue, targeting families with children aged 3 to 8 and meeting with school principals. The aim was to explore the use of the language in the two key domains where children spend most of their time: at home and in school.

Data Collection:

To ensure the collection of relevant data during the second field trip, I prepared a detailed research plan outlining the target villages, number of family visits, and a clear set of survey questions. It was essential to include families from various Nubian villages to capture a diverse range of backgrounds and perspectives, helping to ensure the accuracy of the findings.

Three tailored surveys were designed—one for each family member: the mother, father, and child. A fourth survey was created specifically for school principals to be used during school visits. With the support of Aam Sally and Hamada Zizo, I conducted interviews with an average of three families per village over the first four days of the trip.

I conducted interviews in six villages: Heissa, Tenqar, Khazan, Seheil, Gharb Seheil, and Gharb Aswan. Unlike the first phase, this round of interviews was much smoother, as I was already familiar to most families—some even expressed admiration for my work. This rapport helped eliminate awkwardness and allowed the short-format questionnaires to be conducted more efficiently compared to the more in-depth methods used earlier.

The second step involved visiting schools to speak with principals and to interview children in a different environment from their homes. I visited three schools and two nurseries across Heissa, Seheil, and

Gharb Aswan, aiming to better understand the school's role in the preservation or loss of the Nubian language.

Following the initial data collection, I paused field visits for a week to digitize and analyze the gathered material. Based on this analysis and the identification of a leverage point, I decided to explore another critical layer: the work lives of Nubian mothers. I focused specifically on those working as henna artists and artisans—two of the most common professions among Nubian women.

This additional step aimed to understand the work environments and needs of these women, recognizing that their daily lives and routines are key to shaping the language habits of their children. I created two separate surveys tailored for these professions: one for henna artists and another for artisans.

Findings and reflections:

After conducting structured interviews with 20 Nubian families and local schools, I found that 64% of children (133 out of 207) don't speak Nubian. While some understand basic words, they rarely respond in Nubian. 12 of the 20 mothers interviewed said they wouldn't pass the language on to their children—largely because they saw no practical value in it compared to Arabic. This sentiment, along with the disappearance of the Nubian script, has contributed to the language's decline.

Fathers acknowledged this but felt powerless to intervene, as mothers are the primary caretakers while they work. Bullying over Nubian-accented Arabic also discouraged many parents from encouraging their children to use the language.

Importantly, 19 out of 20 families were aware that their language is endangered. However, schools play no supportive role, instead reinforcing Arabic as the only accepted language. Principals stated they could not incorporate Nubian into learning due to Ministry of Education regulations and feared government repercussions if they tried—even in extracurricular settings.

Only in Heissa did I find widespread use and preservation of the language. All 45 children at Heissa's school spoke Nubian fluently, and nearly all families there retained its use.

Interestingly, children who didn't speak Nubian weren't more fluent in Arabic than those who did, debunking the myth that one language must be sacrificed for the other. Still, most mothers remained unconvinced and felt judged, viewing me—an Arabic-speaking outsider—as disconnected from their lived struggles.

Many mothers actually felt helpless, not disinterested. They were saddened by their decision not to teach Nubian but believed they had no choice. This led me to a key insight: reviving Nubian among mothers requires restoring its value emotionally and financially.

I recalled how moved Nubians were when they heard a stranger like me speak their language. Given Nubia's tourism industry and the number of women working as henna artists, artisans, and chefs, I saw an opportunity. I began interviewing henna artists and artisans to explore how the Nubian language could be incorporated into their work.

Findings revealed thathenna art could serve as a promising mediumfor language integration.

Development of the design concept:

Following the two phases of field research, the ideation phase focused on proposing a design solution to support Nubian language preservation. The solution needed to include Nubians, rather than preach to them—recognizing that, as an outsider, I would still be perceived as a stranger despite my time spent with the community.

Raising awareness or creating educational materials for children wasn't suitable, as these approaches don't tackle the core issue: mothers choosing Arabic over Nubian at home. Additionally, as a student project, the initiative might not be taken seriously unless backed by an educational institution.

I decided to propose a practical tool. A clear criteria was established to guide the solution—focusing on inclusivity, relevance (based on the lifestyle insights from fieldwork), and sustainability to ensure long-term impact.

While the proposed idea is not positioned as a cure-all for language extinction, it aims to be a modest, actionable step that brings attention to the issue and lays groundwork for future initiatives.

Throughout the paper, the cumulative events and problems that affected the Nubian language and made it subject to extinction were discussed elaborately. The most alarming problem is how mothers are taking a conscious decision to break the cycle that has been carried out for years by refraining from passing down their vernacular to their children. This action further endangers the language's survival, which is already in a precarious state due to the loss of its script. Digging deeper into those problems during the field research revealed that the

core problem lies in the language having lacked a clear functional purpose for an extended period. Hence, the script got extinct, Arabic took over, and mothers started to favor it over their own mother tongue. This leads to the question: "How can Nubian mothers reclaim the value of their language to prevent it from fading away?"

To address the research question, it was essential to ask: *What kind of tools can make the Nubian language rewarding for mothers?* The answer lay in offering both financial and emotional incentives. Financial reward is crucial for this less privileged community, while emotional reward—such as the pride felt when strangers use their language—helps rekindle a sense of belonging.

Given Nubia's status as a tourist destination, many Nubian women work as henna artists or artisans. Henna artists, in particular, frequently interact with visitors, making them ideal agents to bridge cultural exchange. Therefore, incorporating Nubian language into henna designs emerged as a fitting idea—one that honors culture, involves mothers directly, and provides both emotional and financial value.

Though the Nubian language is part of the region's atmosphere, it has not been visibly manifested, especially due to the disuse of its script. However interviews with eight henna artists revealed that tourists occasionally request Nubian script designs, but are turned away due to the misconception that the language cannot be written. This insight reinforced the untapped potentialfor revitalizing the language through culturally rooted creative expression.

To incorporate the Nubian language into henna art, I first had to decide on its written script. Despite debates, I chose Kabbara's

modified version of the original Nubian script over Arabic or Latin, due to its phonetic accuracy, cultural preservation, and use by NSDC (Nubian Studies and Documentation Center) —though I supported Kabbara's inclusion of the "z" sound for practical reasons. After consultations with linguists like Markus Jaeger and Dr. Kirsty Rowan, experts on the Nubian language, we agreed on using Kabbara's 26-letter system.

The first phase was developing a display typeface specifically for henna. Inspired by Peter Bil'ak's indigenous type work and Juliet Shen's Lushootseed font, I took a culturally rooted approach. I studied Nubian henna patterns, especially their swirls and curves (Fig. 7), comparing them to historical manuscripts (Fig. 8). This led to a script that merged ornamental aesthetics with legibility. The typeface features open-ended strokes and uncial forms (Fig. 9), making it suitable for stenciling. Experts including Gerry Leonidas and Dr. Nolan gave feedback on a beta version. I also connected with Hatim-Arbaab Eujayl, a Sudanese Nubian type enthusiast who designed the "Sawarda" Nubian typeface, and he appreciated the henna-art-inspired concept.

(Fig.7) Henna swirls.
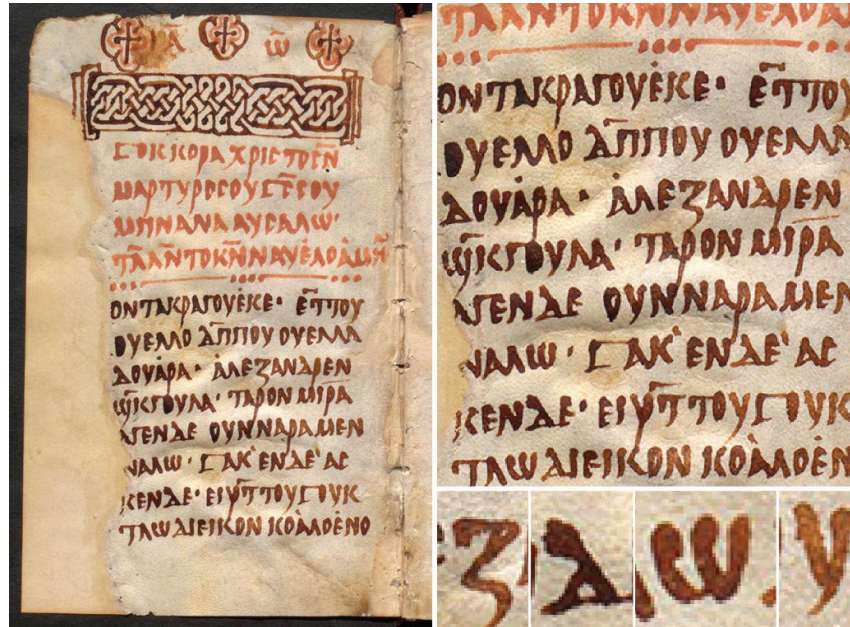
(Fig.8) Similarities between traditional henna swirls and Nubian script in Miracle of St.Mina manuscript.
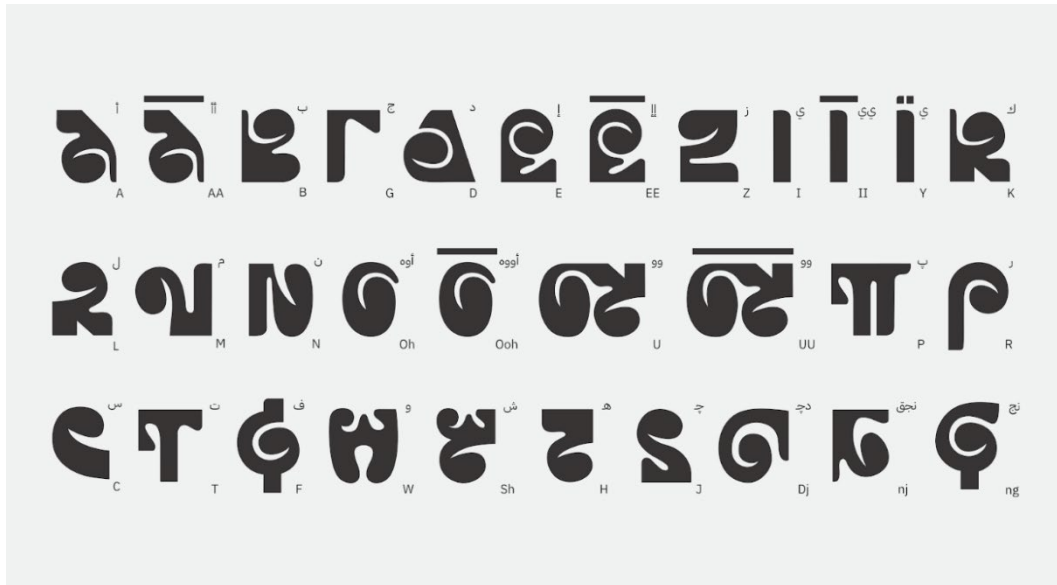
(Fig.9) "Koffre" Typeface that I designed to be used by Henna artists.

Next, I created a Henna Kit (Fig.10) to introduce the typeface to artists unfamiliar with Nubian writing. The kit includes:

- An acrylic stencil (Fig.11)
- A sketchbook with hand templates (Fig.12)
- A henna catalog (Fig.13)
- Letter stickers (Fig.14)

The final phase involved designing the typographical henna catalog, aimed at tourists and Egyptians. It's divided into:

1. Write your name in Nubian (Fig.15) – Alphabet chart with Arabic/Latin equivalents + name examples.
2. Words & Quotes (Fig.16) – Designs combining Nubian terms with henna motifs and cultural facts.
3. Traditional Designs (Fig.17) – Regular henna patterns with optional text integration.

The catalog's flexible binding lets artists add new designs. Material and color choices reflect Nubian aesthetics. With this, the first full prototype of the kit was completed and ready for testing.

(Fig.10) The Henna kit.

(Fig.11) Alphabet acrylic stencil.

(Fig.12) A4 notebook with hand template in which henna artists can sketch their henna designs using the Nubian alphabet stencil

(Fig.13) The Henna catalog.

(Fig.14) Nubian letters' stickers.

(Fig.15) Examples of names written in Nubian script.
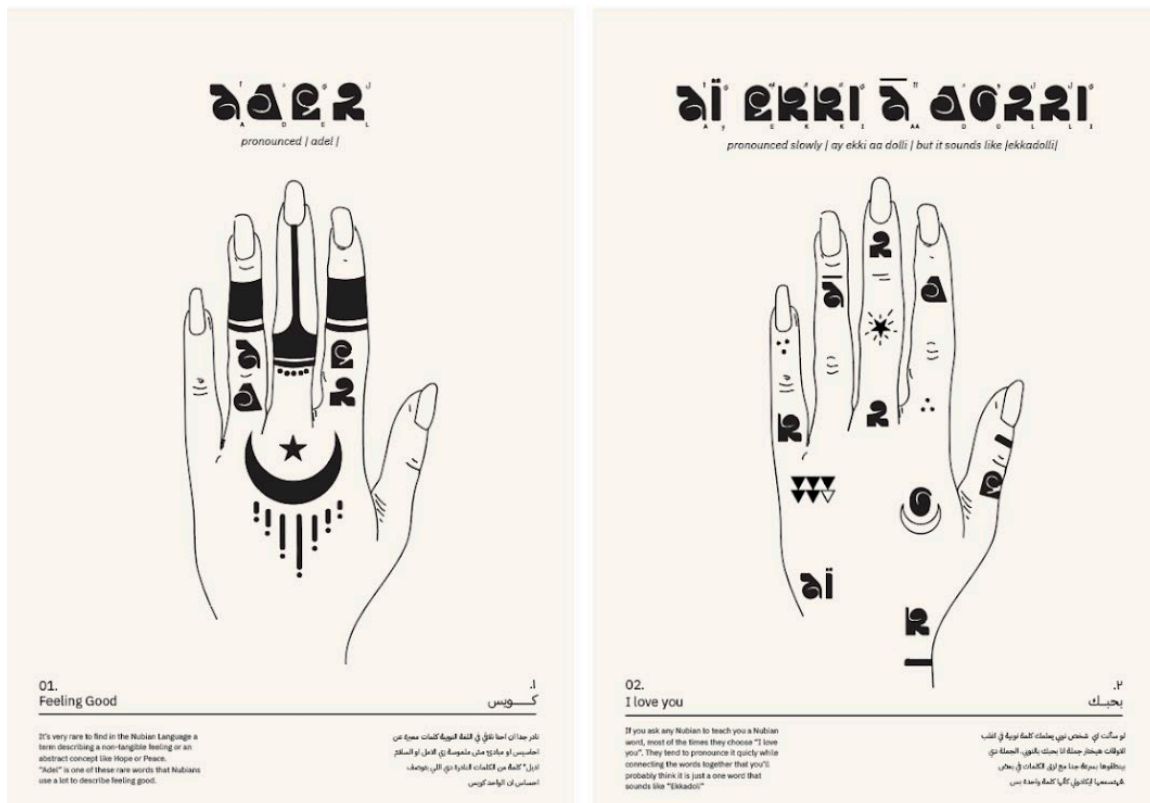
(Fig.16) Nubian Sayings and expressions in Henna designs.

(Fig.17) Regular Nubian Henna designs.

Prototype Test:

To evaluate the proposed henna kit, I returned to Heissa for a week-long field test with 11 henna artists across Gharb Seheil, Heissa, and El Khazan. The response was largely positive—7 artists were enthusiastic, while 4 showed disinterest, possibly due to resistance to change. Some Nubian locaks like Annoury and Aam Sally noted that such reluctance is common and often temporary, predicting that peer adoption would eventually sway others.

One impactful moment occurred with Donia, a henna artist in Heissa. A tourist noticed the kit and requested a Nubian typographic design.

This led to a full day of enthusiastic client engagement, with nearly all choosing Nubian-language designs. Donia's income increased that day, and clients shared their designs online, showing appreciation for both the aesthetic and cultural value of the work. Donia later sent her own sketches and asked for more materials to continue practicing.

Other artists also offered valuable feedback. Doaa, a henna and jewelry designer, was excited by the kit's potential beyond henna and proposed adding examples of Nubian phrases to help artists form full expressions. Asmaa recommended including Arabic and Latin transliterations alongside the Nubian characters in the stencil, while also expressing her appreciation for the stickers, which Donia didn't find useful. Bob's sister shared Doaa's concerns and suggested new Nubian phrases for future designs. Samiha highlighted the need for a laminated catalog to withstand frequent client handling. These insights provided a strong foundation for refining and finalizing the kit.

Future Development:

The project holds strong potential for expansion in multiple directions. The typeface itself could be further developed into a complete font family with various weights and adapted for broader applications beyond henna such as graffiti, signage, book covers, and more. One example of this versatility was a wooden sign created as a gift for Aam Sally, showcasing how the typeface can be applied in different contexts (Fig. 18).

Beyond the typeface, alternative versions of the kit could be designed to support other Nubian artisans, such as those working with beads, threads, or brass. A jewelry kit, for instance, could enable women to

integrate Nubian typographic designs into handmade jewelry, extending the project's cultural and economic impact.

(Fig.18) The wooden signage that I gave Aam Sally as a present. It transliterates: "Sally Ka" which means Sally's house.

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Elisa Schneider is a design student at ecosign / Academy for Sustainable Design in Cologne (Germany), where she focuses on social sustainability and interdisciplinary design approaches. Her academic work is shaped by her engagement in international cooperation and community-based development. In 2021, she received a scholarship from a German organization for the promotion of gifted students. Her experience includes an internship at the German Corporation for International Cooperation (GIZ), volunteering for the United Nations and long-term involvement with a NGO, that supports rural healthcare in Tanzania. In 2023, she participated in a project visit to Tanzania, where she gained direct insight into local healthcare challenges and community needs. Alongside her studies, she works in digital communication and web design for UNICEF Germany.

Tando: An Interdisciplinary and Intercultural Approach to Inclusive Design for Local Empowerment

Elisa Schneider

Abstract

Tando is a conceptual open-source platform aiming to enable communities in resource-limited settings to design and produce essential medical and everyday goods with locally available resources. The project was initiated through a cross-cultural and cross-disciplinary collaboration between a Tanzanian medical student and a German design student, and it integrates principles of inclusive, participatory and systemic design approaches. This paper explores the conceptual development of Tando, examining how interdisciplinary expertise and intercultural dialogue have shaped an adaptable, community-centered design framework. Through the integration of traditional knowledge, open-source technology and digital literacy, Tando proposes a model of design-as-infrastructure and empowers communities not only to access but to define and produce contextually relevant solutions.

Keywords: *Inclusive design; Participatory design; Interdisciplinary design; Intercultural collaboration; Local empowerment; Community-driven solutions*

1. Introduction

Designing "with", rather than "for", communities has become a central paradigm in the development of inclusive, sustainable and culturally grounded solutions (Costanza-Chock, 2020, p. 70-72). Participatory and inclusive design approaches challenge the traditional notion of the designer as sole problem-solver, expanding the design's role to include facilitation, mediation and co-creation across diverse social and material contexts (Björgvinsson et al., 2010, p. 10). Inclusive approaches are particularly relevant in global or underserved settings, where life experience, local knowledge and cultural specificity play crucial roles in the success of any intervention.

This paper examines Tando, a conceptual design project initiated through an interdisciplinary and intercultural exchange between a Tanzanian medical student and a German design student. The idea of the project was conceived as a response to the systemic challenges facing medical infrastructure in rural Tanzania, including long distances to health facilities, high costs of imported equipment and the lack of local repairability.

Tando proposes a platform that not only addresses these material challenges but rethinks the design process itself: from object-based problem-solving to infrastructural, co-produced systems. The platform aims to enable individuals and communities to produce essential products, such as mobility aids, wheelchairs, crutches and recreational equipment, using materials and tools available in their own contexts.

This paper examines the project's beginnings, its development over time and the thinking behind its design. In doing so, it contributes to ongoing research that supports inclusive, participatory and context-sensitive design approaches. The project critically reflects on the limitations of conventional, top-down design interventions and illustrates how interdisciplinary and intercultural collaboration can be leveraged to create more equitable, resilient and user-driven design ecosystems.

2. Context, Collaborative Foundations and Problem Definition

The initial contact between the two students was established during a field visit organized by a non-governmental organization (NGO) supporting healthcare in rural Tanzania. The German design student accompanied the travel for documentation purposes and visited various institutions including a rural hospital and a medical university. In the course of this visit, she met with doctors, trainees and local students and gained valuable insights into the infrastructural and medical challenges of the region. During these encounters, she connected with a Tanzanian medical student, with whom she remained in contact after returning to Germany. Their ongoing dialogue was centered around the persistent shortages in medical equipment and the lack of affordable, repairable solutions.

East African countries face significant challenges in healthcare infrastructure and medical equipment is overwhelmingly imported as minimal local manufacturing capacity is available (Mwaura & Zander, 2021, p. 9, p. 16-17). This dependence on centralized procurement and foreign supply chains consolidates hegemonial structures and

inequality in healthcare access. The World Health Organization (WHO) (2008, p. 24-28) notes, that the majority of people with disabilities in low-income countries are unable to afford wheelchairs by themselves and that universal models are often unsuitable for local conditions. During the fieldwork in Tanzania and through exchanges among the students and with other Tanzanian medical personnel, it became evident that imported equipment frequently becomes unusable once damaged. Local users often lack the necessary tools, spare parts and technical support infrastructure to carry out repairs.
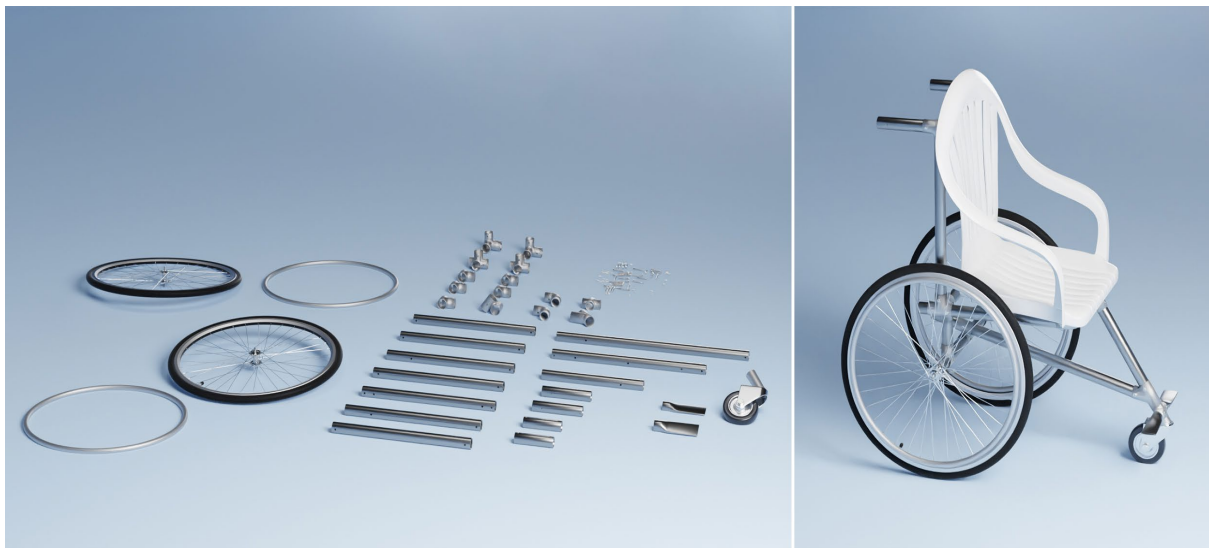
Figure 1: Modular construction kit with few pipes, connectors and wheels turning into a first wheelchair draft with a Monobloc plastic chair inspired by Don Schoendorfer's Gen-1 wheelchair (Wendler, 2022, p. 119)

These insights led the design student to explore potential responses within the framework of a university course. Initially, the focus was on developing a modular, low-cost wheelchair, accompanied by a visual construction manual. The Tanzanian student provided information of disabled people from his community, and told about their needs.

The initial idea of developing a low-cost wheelchair that could be assembled locally with a visual construction manual using few imported tools, soon expanded to include additional modular products. By using the same system of standardized metal pipes, connectors and wheels, a rollable hospital bed and a bicycle- or motorbike-drawn stretcher was designed. The idea developed into modular product kits mostly consisting of the same parts, so that spare parts are identical and therefore easier to get. The design student created visualizations, CAD models of the constructions and drafts of construction manuals

While the modular approach aligned with repairability and cost-efficiency goals, the Tanzanian exchange partners highlighted critical flaws in the concept: the reliance on standardized imported parts reintroduced dependency and the underserved regions would still be unlikely to have access to those modular product kits. They also mentioned the missing infrastructure in some rural areas and the lack of adaption to different terrain conditions of the wheelchair that was designed by the German student.

3. From Object to Infrastructure: Reframing the Design Approach

The early design phase classified the limitations of applying top-down design thinking from a distant context. The two students concluded that a more sustainable approach is to develop a solution that integrates into existing systems and can be defined and implemented by the local communities themselves. Eventually Tando developed

into an open-source platform promoting knowledge transfer and cooperation.

The revised version of Tando emphasizes the necessity of an interdisciplinary, intercultural and dialogic process, where lived experiences and local knowledge directly form the design framework. The realizations prompted a turning point: the project needed to move beyond delivering discrete objects and instead support systems for local problem-solving that can integrate into existing structures and material flows.

Based on the work of Björgvinsson et al. (2010, p. 3-4), the project reoriented toward designing for infrastructuring, an approach that shifts design practice from creating objects to fostering adaptive systems for ongoing co-creation and relationships. Further exchanges with the Tanzanian medical student uncovered region-specific materials and tools as the most viable inputs for local design. These conversations highlighted cultural practices of improvisation, mutual aid and traditional craftsmanship that could be included in the solution.

The Tanzanian student supported the idea of an online platform accessed via mobile app or the browser since most of Tanzanian population has access to a smartphone (Cowling, 2024a) and mobile phone network and internet in Tanzania are relatively well developed (Cowling, 2024b). Tando thus evolved into the concept of an open-source platform: a digital infrastructure that allows users to co-create, adapt and repair essential goods using tools and materials available in their specific contexts.

The dashboard features a clear and intuitive navigation system, using icons and colors to provide visual guidance. Users looking for goods can either browse the catalog for specific items or use the search function to filter by categories such as mobility, health or sports and search for manuals, materials or services. Each project includes a step-by-step guide, illustrated with images, pictograms or videos. Users can upload their own instructions or edit existing ones. Comments and ratings encourage active discussion about quality and improvements.

Via a stakeholder map and community chats, actors can connect and exchange on specific topics. Users can also help to further develop the app and refine the software. Open-source knowledge systems offer several advantages: they enable collective contributions to a shared knowledge database, promote continuous peer review that enhances quality, reliability and adaptability and reduce costs. (Pearce, 2012, p. 428) Accessible via app or browser, the platform hosts visual

construction guides, supports multilingual and non-literate communication formats and encourages user feedback and peer learning.
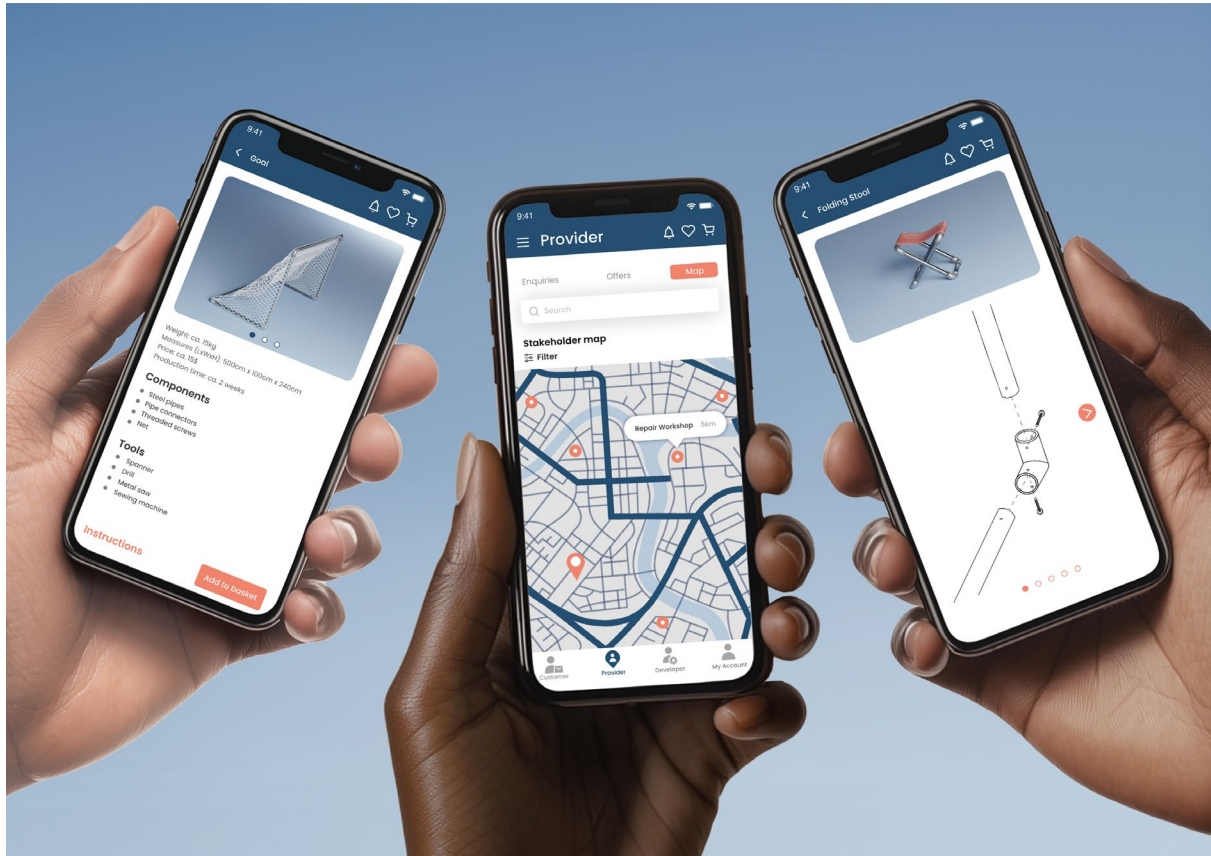
Figure 2: Possible app interfaces showing an item summary, a stakeholder map and a construction manual

4. Interdisciplinary and Intercultural Design Practice

Designing across disciplinary and cultural boundaries has become essential in addressing "wicked problems" that are complex, poorly defined issues with unclear information and span technical, social and infrastructural domains. (Buchanan, 1992, p. 15) Tando's foundation in interdisciplinary collaboration is not merely pragmatic, but central to its inclusive design ethos.

Cross-disciplinary collaboration enables the integration of domain-specific expertise, such as medicine, engineering and social sciences, with design methodologies that prioritize creativity, knowledge integration and adaptability (Badke-Schaub, & Voute, 2018, p. 25-28). In the case of Tando, the medical student's experiential knowledge of healthcare needs, logistics and patient experiences in underserved areas is complemented with the design student's expertise in visual communication, prototyping and systems thinking.

Intercultural collaboration offers a means of challenging assumptions and biases embedded in Eurocentric design traditions as Emans and Murdoch-Kitt (2021, p. 424) note and such collaborations invite reflection on relational ethics, cultural humility and the multiplicity of "correct" solutions. In Tando, intercultural dialogue shaped every phase of the design: From problem framing to material selection, ensuring the project remained rooted in context.

The platform also reflects what Akama and Yee (2016, p. 2) describe as an intimacy-based orientation to design: an approach that emphasizes relationships, emotions and place or community-based knowledge and draws sustenance from indigenous, spiritual and ecological dimensions. By valuing vernacular innovation and traditional craftsmanship, Tando aims not only to preserve indigenous knowledge, but to make it transferable and combinable with digital and technical systems across regions.

5. Participatory Principles and Inclusive Infrastructure

In essence, Tando seeks to operationalize inclusive design principles through participatory infrastructure. Rather than treating users as passive recipients, the platform invites them as contributors, co-developers and experts in their own right. Therefore, Tando aligns with Ehn's and Bannon's (2012, p. 42-45) perception of participatory design as a democratic practice and a space of ongoing negotiation.

In Tando, people can provide visual construction manuals to make them accessible for illiterates as well. The platform's design incorporates multilingual interfaces, modular customization and open feedback loops. Users can adapt designs to fit local conditions, share new instructions, access production and repair resources. In doing so, the platform facilitates not only the production of goods, but the transmission of technical knowledge, supporting long-term capacity building, social entrepreneurship and local economic growth.

The platform's structure reflects an expanded view of inclusivity, not only in terms of accessibility, but also in epistemology. It integrates technical schematics with traditional knowledge, digital skills with craft expertise and global resources with local agency. This reflects a shift from "designing for" to "designing with" and ultimately "designing by" communities. This approach transforms the designer's role into that of a facilitator, someone who enables dialogue, supports local innovation and helps build the conditions for communities to shape their own solutions (Björgvinsson et al. 2010, p. 10).

6. Cosmopolitan Localism and Knowledge Circulation

Tando exemplifies what Manzini (2009) terms in his work as cosmopolitan localism: a model in which global knowledge resources

are adapted and recontextualized by local actors. Through open-source frameworks, designs for essential goods developed in one region can be adapted, remixed and implemented in another, provided they align with local materials and practices. Since users define the solution according to their context, Tando is also applicable in other countries than Tanzania. Such an open-source model has already found traction in projects like the OpenFlexure microscope (Bowman et al., 2020), where researchers in the UK and Tanzania co-developed a 3D-printed lab instrument.

Tando's platform supports a wide range of applications: from health-

Figure 3: Selection of the wide range of possible items

related devices to agricultural, educational and recreational items.

Its integrated crowdfunding function allows communities to finance collective projects or to donate items, while its modular architecture encourages continuous adaptation. Importantly, the platform also serves as a learning environment, fostering digital literacy and reducing disparities in technical education.

7. Implementation Challenges and Future Directions

The project's interdisciplinary and intercultural character presents both: opportunities and challenges. Differences in communication styles, educational background and infrastructure required flexibility and ongoing negotiation. Yet these challenges deepened the project's reflexivity, leading to a more thoughtful and grounded design.

While Tando presents a promising framework, it remains a conceptual project and has not yet been tested in real-world settings, which limits the ability to evaluate its practical effectiveness. Its success depends on access to digital infrastructure, local facilitation and a certain level of technical engagement, which may vary significantly across regions. As such, the approach may not be universally applicable and will need to be carefully adapted or reconsidered in contexts where these conditions cannot be met.

Going forward, pilot testing and co-design workshops with communities in Tanzania are required to assess usability, relevance and adoption. Partnerships with local NGOs, maker spaces and vocational schools will be essential for facilitating access and building trust. Sustaining the platform will require attention to governance, moderation and community engagement. Mechanisms for quality control, design verification and knowledge curation must be

developed. Eventually, strategies to measure social impact, such as increased access to essential goods, local skill development and reduced dependency on imports, will inform future iterations.

8. Conclusion

Tando presents a compelling case for how interdisciplinary and intercultural design collaboration can generate inclusive, responsive and sustainable innovation. By integrating professional and lived forms of knowledge, it redefines design as a dialogic, participatory and context-sensitive process.

Rather than proposing universal solutions, Tando provides an adaptable infrastructure through which communities can co-create the tools they need. Its open-source, distributed model leverages global knowledge while centering local agency, reflecting an emerging paradigm in inclusive design that privileges equity, autonomy and mutual learning.

As the project advances toward implementation, Tando offers both a practical tool and a conceptual framework for inclusive design research. Its evolution underscores the value of interdisciplinary and intercultural cooperation, not as a supplement, but as the foundation for transformative design practice.

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Letter from the Chairman's Desk
By Sunil Bhatia PhD

One day I was in restaurant where a Chinese family was dining next to my table and two children were enjoying and relishing the dish made with live crab who was making some movement under gravy. While eating this crab some white paste was coming out of that crab and was sliding from child;s corner of the mouth . That child was licking as some gold mine was found. A smaller child shouted and informed the parents and everyone started laughing for such event.

It was unusual for person like me who was strict vegetarian .I questioned myself what child is enjoying of eating live crab is basically outcome of his cultural background and what parents have offered that taste bud have activated and when it comes in such food that gives signal to our mind of escalation

Immediately a question pop up in my mind What I eat the pulp of the fruits may be defections of its body that we keep enjoying by eating in varieties of way. We eat gum of the plant and to get it we make artificial cut to release the juice for repairing damage and we collect it for our benefits. It is similar to natural human clot for healing small cut of oozing blood. We enjoy honey that food is prepared by bees with their saliva.

Human is the only animal that enjoy as food of plants, animals and even human flesh(it iss social retrictin that restrict his behavior of not to do so. I have read in story that when vouging ship lost their

route and lost in sea and under no food available but live fellow human . They killed and eat its body parts to prolonged rest of sailors lives) . It is only social structure that develops over the centuries do's and don't dos use human body as food and do not kill but permitted for other living beings . Sea food is considered largest reservoirs of food for consumption of food. We call it sustainability.

When I see the insects attracted for eating cow dung or animal waste we ignore by saying it is food cycle . But in reality what is useless for one is useful for others and as designers looking for some means of developing some usefulness by using the waste of manmade products. Some are naturally biodegradable and some are not and we are looking for some means for reuse and as we failed (when lack of knowledge for recycling for making useful for main stream system of growth or commercially not viable) we tried to destroy(in fact changing its form) by bio means as we do in spillage of crude oil in sea or leave unattended to natural process . Some time it is very longer process and human intervention work as catalyst to do in short time .

Life element surfaces with some natural ingredients but elements of some darkness is required for it . Seed is, in earth, male sperm and mating with egg in women ovary, even grafting of plants develops root under some cover that provide darkness. My second observations it needs some random surroundings for developing new life out of seed or sperm.The structure of Vagina or sowing of seed in earth or covering with mud at the time of grafting , all makes surrounding uneven and random surface that is some force that allow life to hold uneven surface for growth and sustainability for life. I suggest if make a seed surrounded by vey fine smooth surroundings (in reality it is not possible because physically every surface has

some elements of rough surface that provides randomness) and observe the outcome. We observe randomness surface has better survival than smooth(caesarian child has not that immunity what a normal child birth through vagina) . It might be every seed has micro fiber surface that gives keep informing the hibernated seed life to come into action for new life. Male sperm runs for woman egg for new life . Mystery who is guiding to move in that direction and be first among all for new life for pregnancy. How child knows the time to come out of womb through way of vagina?

A plant seed protects the life in it till it gets a conducive environment. The moment it gets it sends signal and a new life process starts. Once life processes start it never stops but fails as do not get that environment needed for growth it dies naturally. This point of signaling of life in seed is most crucial for judgment . Wrong decision means termination of life forever and the best decision for proper growth. The real foundation of sustainability is this juncture of crucial decision.

The same process is in animals and humans . They are governed by hormones and make it go for mating and the female delivers the child risking her life. It is the real foundation of sustainability. We have limited potential lfe and nature is in hurry to live with sustainability by directing our hormones to go for new life inspite of all known and unknown challenges even at the cost person life.

I am extremely happy with the Guest Editor *Brigitte Wolf Professor Emerita of Design Theory at the University of Wuppertal and was also Professor of Design Management at the Köln International School of Design (KISD), TH Cologne for raising our international publication to new height.*

Enjoy Reading

With Regards

Dr. Sunil Bhatia

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Forthcoming Issues

Year 2025 declared as Women's Designer August 2025 Vol-20 No-8

Shannon Iacino is a Professor of Industrial Design and Design for Sustainability at Savannah College of Art and Design. Her work specializes in leveraging technology to advance the principles of the circular economy and design for social good. With a background in sustainable design and emerging technologies, Shannon integrates innovation and ecological responsibility into her teaching and research. Her work emphasizes creating systems and products that minimize waste, promote resource efficiency, and address societal challenges. Through interdisciplinary design projects, Shannon collaborates with students and communities to develop impactful

solutions that balance technological advancement with sustainable practices.

October 2025 Vol-20 No-10

Dr Dolly Daou is an internationally recognised design researcher, educator, and leader. She founded the DRS Food Design Research Studio and the Cumulus Food Think Tank. With 25+ years of global experience, numerous high ranking academic publications, she has received multiple awards and serves on the Advisory Board of Cindrebay University, Dubai.

New Books

Sunil Bhatia

Design for All. Volume-II

Drivers of Design

LAP **LAMBERT** Academic Publishing

https://www.morebooks.shop/shop-ui/shop/book-launch-offer/74414a1df61c3d2ea8bf46ae7e3c0cf31769f261

HOW WE LIVE: Through the Products that We Use

Authored by :   Sugandh Malhotra,

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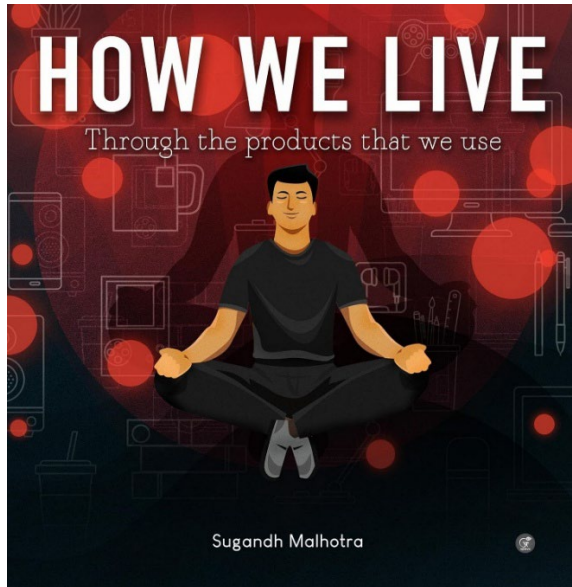
Products tell stories about their users, their likes, tastes and journeys. 'How We Live' book aims to outlay, document and study the used products and create a persona of the users through a brief narrative. This visual documentation book is an excellent resource to observe and acknowledge the subtle differences in choices that are driven by nuances other than personal preferences.
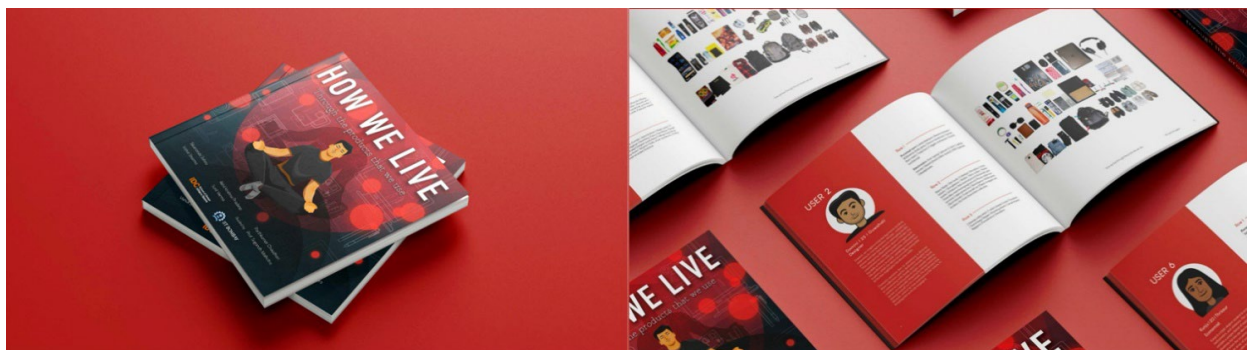
Available at: Amazon.in, Amazon.com, Astitva Prakashan

MOVE MUMBAI: Kaali Peeli and Beyond

Authored by : Vivek Kant, Sugandh Malhotra, Angshuman Das, Tekhenutso Theriah

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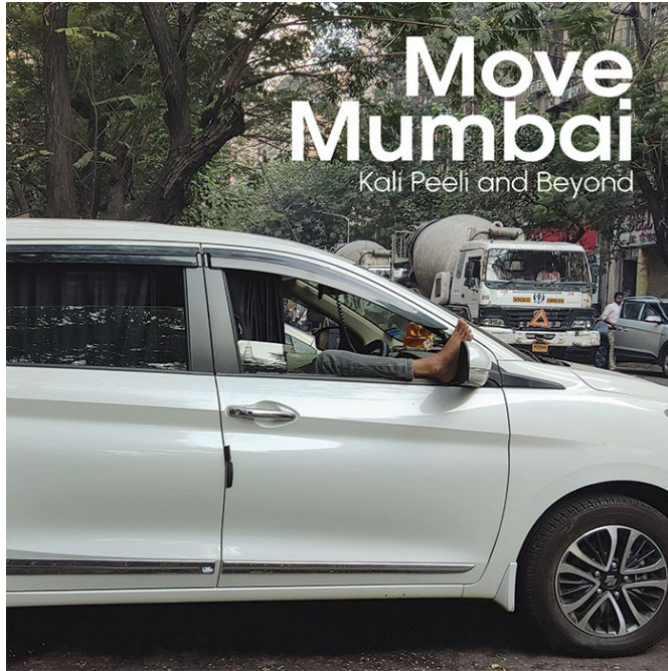
Move Mumbai" is an incredulous yet everyday traffic story from the streets of Mumbai captured through a series of photographs. We closely observe how Mumbaikars use their vehicles, and live with and around them. From cab drivers to bus passengers, from goods carriers to bikers, to children, and pedestrians, Mumbaikars encounter hundreds of vehicles daily while commuting between any two places whether they may or may not be in one themselves. While a two-wheeler motorbike is designed to carry two people. Mumbaikars still manage to fit multiple, especially younger children, in ways that a designer would typically not envision. This reflects in certain ways the economic constraints faced by many Indian families, the cultural value placed on integrated family living, and their resourcefulness. This is one of the many ways in which the city dwellers have appropriated vehicles. We hope that the readers relook at these everyday images with a new pair of eyes to understand the seemingly mundane yet incredulous images of the mobility of Mumbaikars.

Available at: Amazon.in, Amazon.com, Astitva Prakashan

Universal Design in Architecture

On enabling and empowering a diverse population

Camilla Ryhl

The Danish Architectural Press

MEANINGFUL, SUSTAINABLE, HUMANITY CENTERED

DESIGN FOR A BETTER WORLD

DON NORMAN

Author of *The Design of Everyday Things*
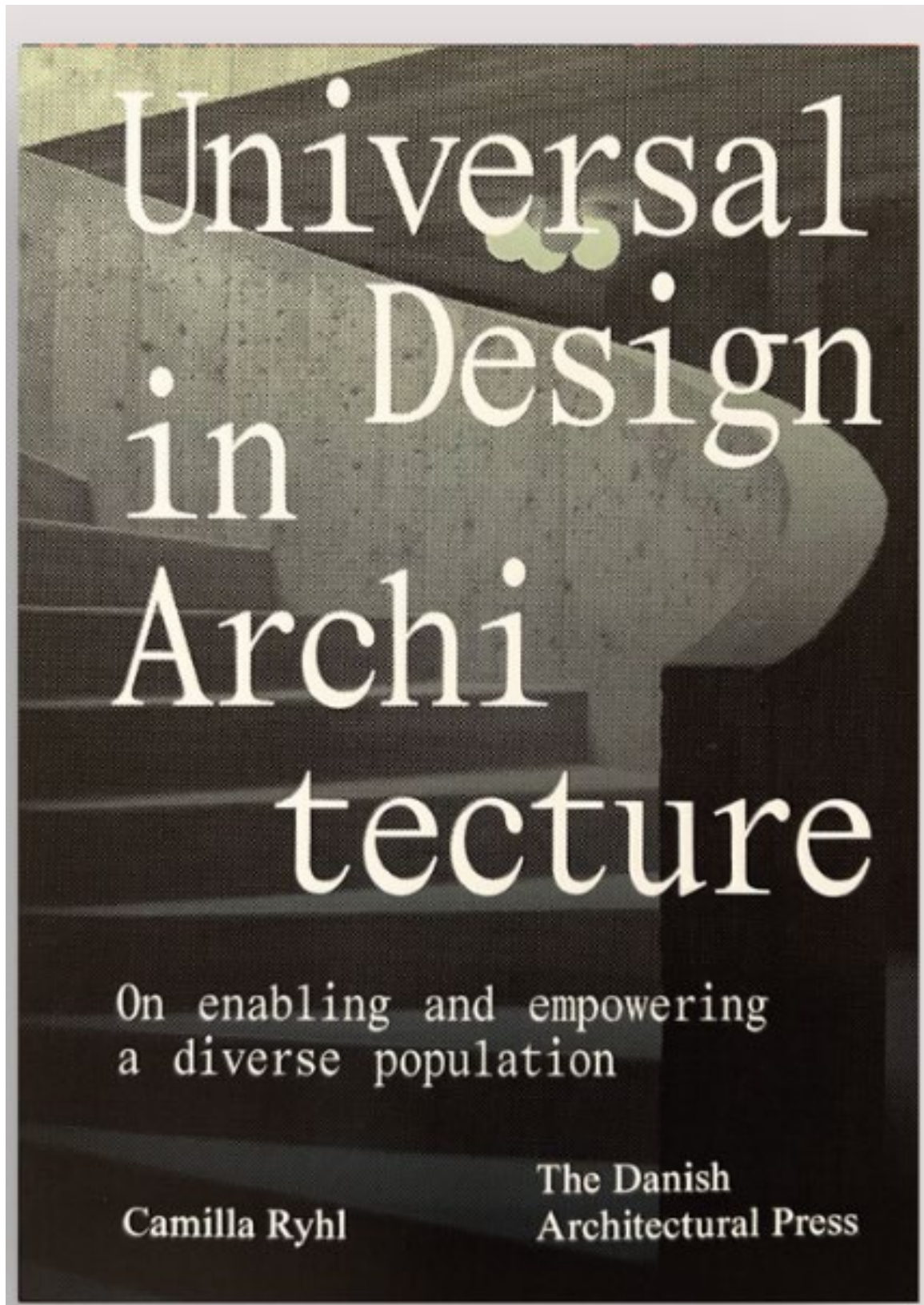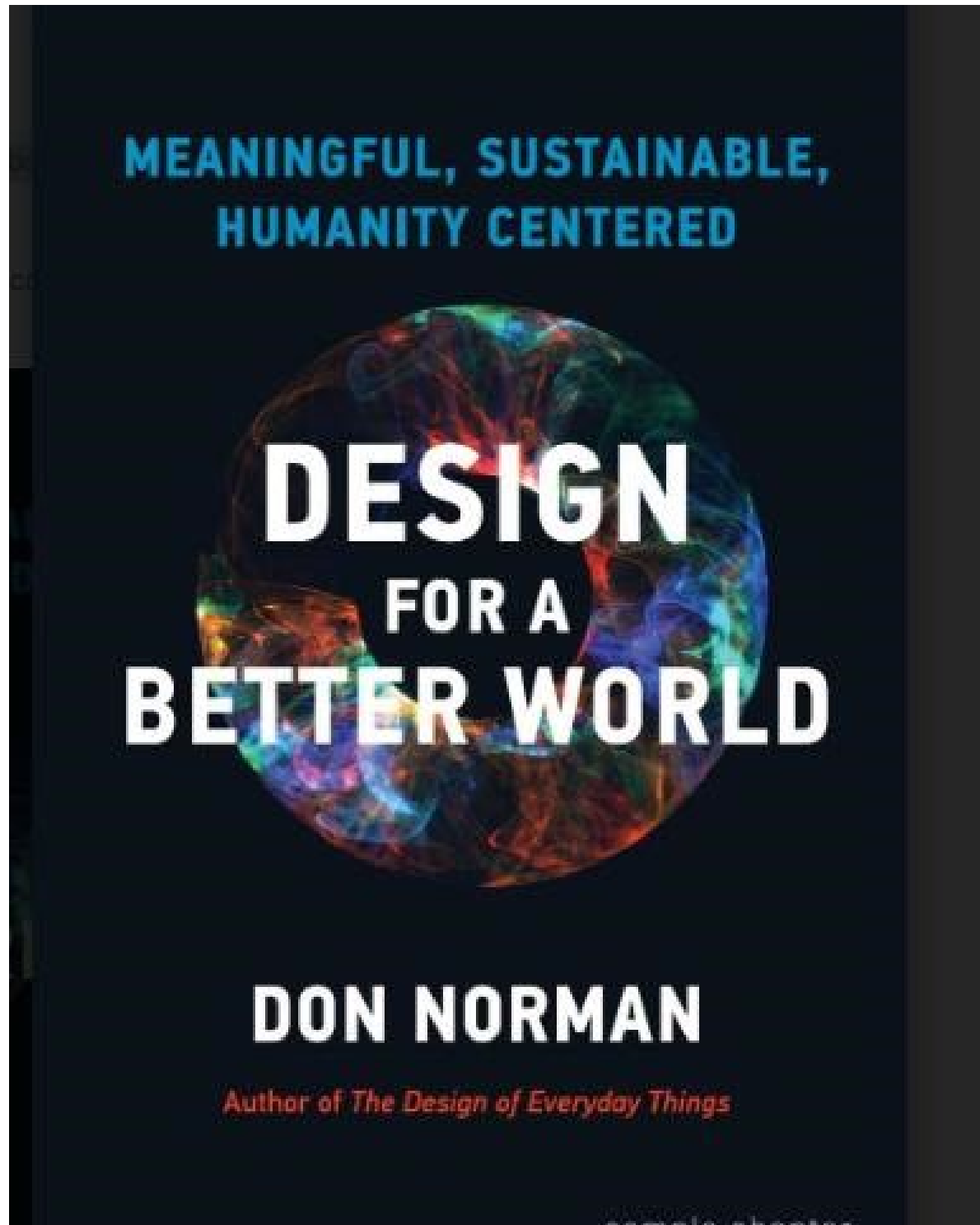
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News

1. German design house unveils 'bus for everyone' concept

Neomind's concept for a universal bus. Reproduced by routeone with permission from Altro.

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German design house Neomind has unveiled a concept for a "Universal Bus" that places inclusivity at the heart of public transport design (pictured).

The concept was revealed at The Transport Design Forum 2025, held in London last week, hosted by coach and bus flooring

manufacturer Altro, in partnership with Camira, AutoGlym, and Autistica.

The event brought together operators, designers and neurodivergent advocates to address overlooked accessibility barriers faced by passengers with sensory and cognitive challenges.

Th unveiling of the Universal Bus was a key moment for the forum, with Neomind presenting a concept for London built around flexible, passenger-focused spaces.

Based on a Mercedes Citaro, the design includes designated quiet, family and priority zones (sectioned into red, green and blue) improved real-time passenger information, and carefully selected materials that manage acoustics and sensory comfort.

Altro says it hopes the vehicle will serve as inspiration to operators such as Transport for London in designing more inclusive buses.

"This forum marked a pivotal moment in acknowledging the vast neurodivergent community and the critical need to design public transport that genuinely serves 'for all,' as the word 'bus' (from omnibus) truly implies," says Chris Edwards-Thorne, Marketing Manager – Global Transport at Altro. "The insights shared, particularly the direct feedback from the neurodivergent community, will guide our collective efforts to build more welcoming, less stressful, and truly accessible transport systems."

(Courtsey: Route One)

2.Altro's 'universal bus' concept wins award

The concept was unveiled at the Transport Design Forum. ALTRO

Altro and Neomind's neuroinclusive 'universal bus' concept, as shown in issue 1684, has been awarded a London Design Award for conceptual design following the company's recent Transport Design Forum event where the design was first unveiled to industry leaders and accessibility advocates.

The Universal Bus concept interior represents what Altro says is a significant advancement in inclusive transport design, addressing the needs of the UK's estimated 9.7 million neurodivergent individuals with features such as a distinct quiet spaces for passengers requiring calm environments, dedicated family areas and priority seating zones, supported by enhanced passenger information screens and carefully selected materials that improve acoustics and reduce sensory overload.

"Neuroinclusivity isn't a design feature to add later, it's a design foundation to build upon from the start," said Global Marketing

Manager at Altro Chris Edwards-Thorne. "This award validates our commitment to creating transport solutions that are genuinely accessible and considerate of the diverse needs of all individuals. The Universal Bus concept demonstrates how thoughtful design can transform the travel experience for neurodivergent passengers while benefiting all users."

Director of Customer Experience at Neomind Kasia Foljanty added: "Working with Altro allowed us to create a design that goes beyond traditional accessibility models. We've addressed the 'invisible' sensory and cognitive challenges that represent the vast majority of accessibility needs in public transport. This concept proves that universal design benefits everyone – what we've created for neurodivergent passengers enhances comfort and usability for all travellers."

(Source: CBW)
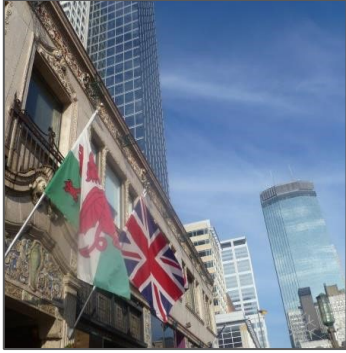
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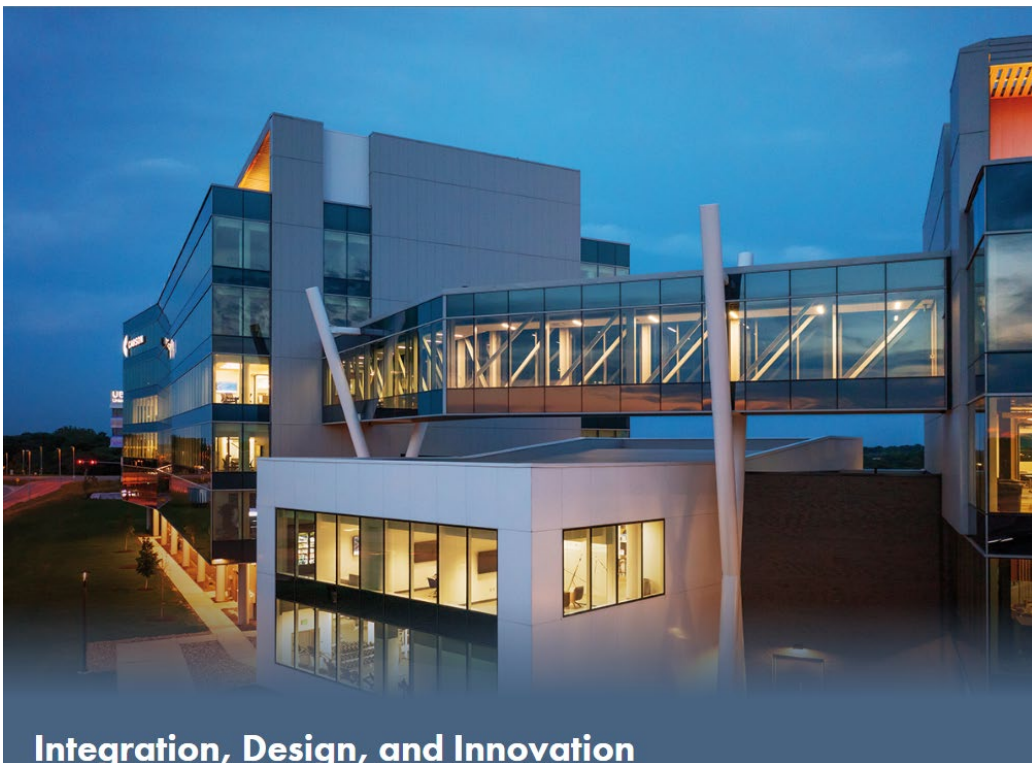
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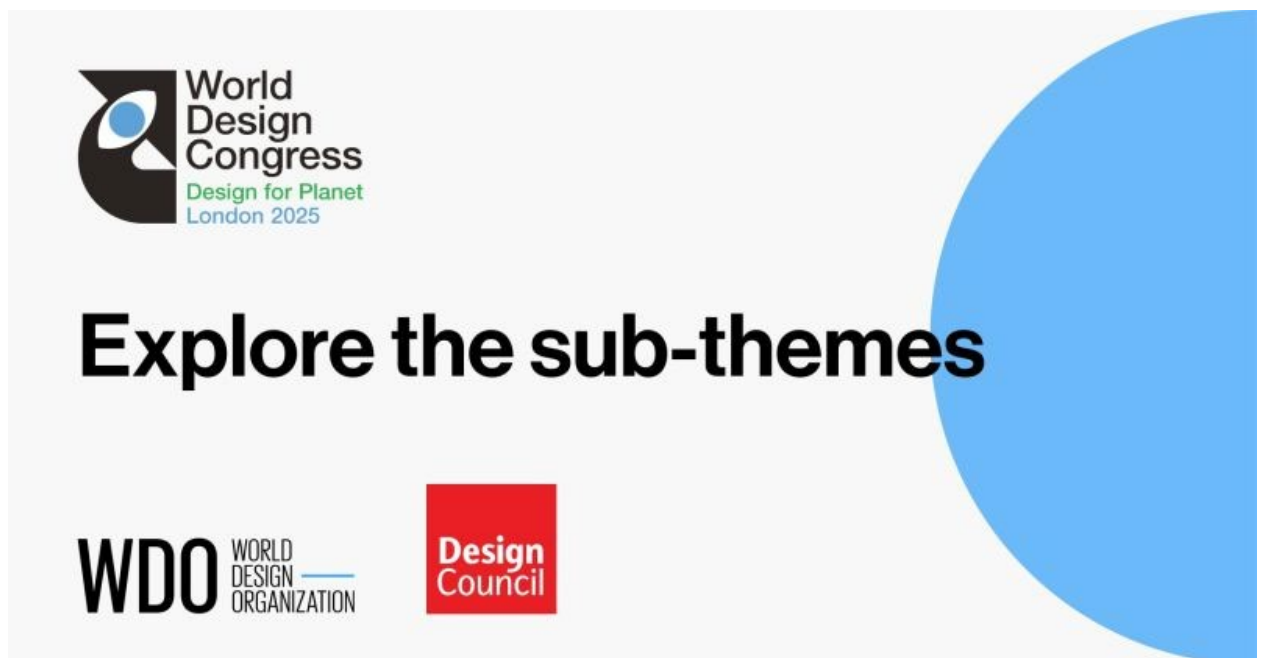
World Design Congress
Design for Planet
London 2025

9-11 September 2025

Are you curious about submitting a paper or poster to the World Design Congress in London this September? In line with the

hashtag#DesignforPlanet theme, swipe to learn more about the first submission sub-theme of Shifting Paradigms — From Extractive to Regenerative Design, which aims to highlight work that showcases the transformative potential of design in addressing planetary health.

Don't miss out! Submissions are open globally until 31 May 2025.

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