

ALTERNATIVE DESIGN CREATION

Marián Ihring – Simona Hanes

ABSTRACT

The paper is focused on using design processes in furniture creation as a mediator to support women's physical and mental health through religious symbols, specifically the Virgin Mary. In the context of the ongoing development of alternative design and its societal impact, this research aims to significantly contribute to understanding social issues through new design approaches. The results will provide designers with visually comprehensible, graphically refined drawing studies, physical models with material tests, and fully functional creations as reference models for practical solutions. Additionally, the article reviews the issues that the authors rely on in their creative and artistic research and presents an artistic-scientific hypothesis. Through specific examples, the authors aim to clarify and interpret the results of their study, grounded in authentic creation.

Keywords: artdesign; subculture; antropomorphy; social probe; women.

INTRODUCTION

In its contemporary iteration, design transcends its origins as a functional discipline and emerges as a dynamic force at the intersection of art, science, and culture. As a hybrid practice, design operates not only as an aesthetic pursuit but as a conduit for socio-political commentary, cultural expression, and technological innovation. This transformation aligns design with a broader epistemological framework that integrates creativity, research, and critical analysis, challenging the traditional boundaries that once confined it to either form or function. As such, design is increasingly recognized as a powerful tool for reflecting on and engaging with the complexities of modern society.

The evolution of design reflects an ongoing shift towards interdisciplinarity, with practitioners drawing upon diverse fields to inform their creative processes. This shift aligns with broader theoretical frameworks such as posthumanism and transdisciplinarity, which emphasize the dissolution of rigid disciplinary boundaries in favor of a more integrated, relational approach to knowledge production. In this context, design is not merely a reflection of cultural norms but a space for active experimentation and reimagining social realities. Posthumanist theories, for instance, critique the traditional human-centric paradigm by integrating effect, materiality, and non-human elements into the discourse, thereby expanding the design's scope to include ecological and technological concerns (Burnard, 2021).



Fig. 1 a, b: Pietà by Michelangelo Buonarroti - a statue that remains the most famous interpretation of the subject, 1 b - detail of posture of Virgin Mary's legs.

Source: https://en.wikipedia.org/wiki/Piet%C3%A0_%28Michelangelo%29

Historically, religious motifs, particularly within Western art and architecture, have served as potent symbols of cultural values and collective identities. The Pietà, a depiction of the Virgin Mary mourning over the dead body of Christ, is a particularly salient example of how such motifs have been used to convey themes of suffering, piety, and maternal grief. Originating in the late Middle Ages and popularized in Gothic art, the Pietà underwent significant transformation, most notably in Michelangelo's rendition, which infused the motif with a heightened emotional resonance and formal innovation. Michelangelo's version, drawing on both Gothic and Renaissance styles, is renowned for its delicate balance of agony and serenity, symbolizing a moment of profound emotional and spiritual reflection. The Pietà's endurance as a cultural symbol attests to its ability to resonate across historical and cultural contexts (Burnard, 2021)

In contemporary design, such motifs offer fertile ground for re-interpretation, especially when examined through the lens of modern socio-political discourse. The motif of the Virgin Mary, often associated with humility, purity, and suffering, has been reexamined through feminist theological critiques that challenge traditional interpretations of her role in Christian iconography. These critiques emphasize the Virgin's dual representation as both an icon of purity and a symbol of patriarchal oppression, sparking debates about gender, power, and religious orthodoxy in contemporary culture (Zhang, 2024). This interrogation of historical narratives aligns with a broader trend in design that seeks to disrupt and reconfigure traditional power structures, thereby positioning design as a medium for cultural critique.

This study situates design within this evolving discourse, exploring its capacity to recontextualize traditional religious and cultural symbols in ways that speak to contemporary social issues, such as gender inequality, social justice, and environmental sustainability. By examining design's role as both a reflection of and a challenge to dominant cultural narratives, this research underscores the potential of design as a transformative practice, capable of influencing not only aesthetics but also the cultural and political landscapes in which it operates.

The convergence of historical motifs and contemporary social critique in design highlights its ongoing relevance as a means of exploring and negotiating complex cultural identities and societal challenges. This interdisciplinary approach offers valuable insights into how design can shape and be shaped by the forces of social, political, and technological change, making it a crucial area of study for both practitioners and scholars alike. The

replacement of Jesus's body with that of a woman in the design metaphorically represents nurturing and vulnerability, themes that resonate with users' perceptions of maternal roles. This symbolic layer enhances the furniture's role beyond functionality, aligning with Burnard et al. (2021)'s exploration of posthumanist theories in design.

MATERIAL AND METHODS

In the context of continuous alternative design development and its societal impact, this work aims to significantly contribute to understanding social issues through innovative approaches in (art)design. The organic form of the element draws inspiration from the Virgin Mary's figure, specifically her portrayal in the Pietà sculpture, symbolizing devotion and compassion. In this design, the body of Jesus is replaced by that of a woman, who becomes the user of the product. The womb is stylized as a central motif, symbolizing refuge, nurturing, and vulnerability.

The design process incorporates advanced 3D printing technology, highlighting its role as an innovative medium in art and design. The initial trial version of the product was crafted using clear filament in a 3D printer, producing an ethereal, transparent object. The use of clear filament conveys symbolism, as the womb appears both present and invisible, echoing the themes of spirituality and the intangible. This transparency allows the inner light integrated into the structure to shine through, transforming the object into both functional furniture and ambient interior lighting.

Fig. 1 b

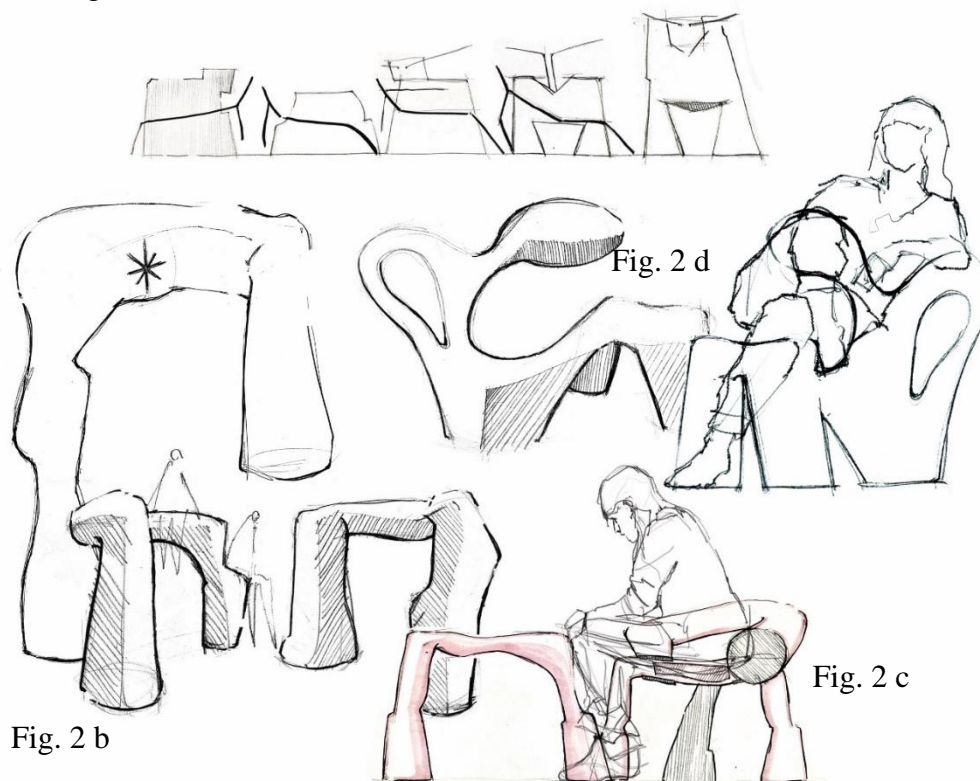


Fig. 2 a, b, c, d: 2 a - Initial ideas with the same positioning of the user as in Pietà, 2 b - a stylized and shaped female womb for the typology of the chair, 2 c - additional segments of backrests and armrests, 2 d - anthropomorphic shaping of the Virgin Mary for the seating design.

3D printing as a material process is central to this work, allowing for the creation of complex organic forms that would be difficult to achieve with traditional manufacturing methods. In this case, the use of filament material allows for precision and customization, making it possible to experiment with different forms, textures, and symbolic elements. The clear filament represents the spirit or soul, suggesting that while the object exists physically in the space, it also carries a deeper, invisible presence. (Fig. 3 b) In art and design, 3D printing has revolutionized how designers can integrate symbolic meanings into objects, as the layer-by-layer additive process provides endless possibilities for customization, allowing for intricate textures, shapes, and visual effects that align with the designer's conceptual vision.



Fig. 3 a, b: Shape-material experimental test scale models.

The second experimental model utilized white filament, which unintentionally developed surface cracks during the printing process (Fig. 3 a). These cracks, which resemble disrupted skin tissue or stretch marks (striae), introduce an additional layer of meaning, linking the object to the physical experiences of women, such as pregnancy, puberty, and body transformation. The imperfections caused by the 3D printing process symbolize the realities of the human body, emphasizing the physicality and vulnerability of the womb. Following these experiments, a scale model was developed using steel wire and insulation foam to simulate the production method. Upholstery filling material and fabric were selected for their aesthetic and structural properties. However, this version faced challenges with balance and stability, leading to the addition of legs for reinforcement.

3D printing played a crucial role in bringing the concept to life, offering both technical flexibility and a deep well of symbolic meaning. By layering material in an additive process, the design gains a tactile, almost organic quality that resonates with the idea of the womb and the maternal. This innovative technology allows designers to push the boundaries of form and function, using digital precision to create objects that resonate with human experience, emotion, and societal issues. The clear and white filaments, with their symbolic transparency and imperfections, enable the furniture to act as a vessel of both physical utility and conceptual depth.

In the accompanying exhibition, the product is not merely presented as furniture but as a work of art that engages with the audience on multiple sensory levels. A careful selection of venue, light projection, and evocative audio tracks enhance the immersive experience, creating a dialogue around themes of mental and physical health, vulnerability, and the role

of women in society. The exhibition space, chosen for its symbolic resonance, amplifies the visual impact of the furniture, with light projections and abstract audio creating an environment that is both contemplative and thought-provoking. The integration of 3D-printed elements into the exhibition reflects the potential of this technology not only as a tool for creating objects but as a medium that embodies complex ideas, emotions, and social critiques.

MATERIALS AND METHODS

The methodologies drawn from existing literature reveal that alternative design research often utilizes approaches like *Participatory Design* (Schuler and Namioka, 1993) and *User-Centered Design* (Norman, 2013), which emphasize active user involvement throughout the design process. *Feminist Design* approaches (Marcus and Gould, 2000), prioritizing gender-sensitive perspectives, also align with this study's objectives. However, while *Feminist Design* informs only one part of our perspective, it does not constitute the primary aim of our research, as our focus is on the mediating role of furniture. Rather than prioritizing a particular viewpoint, such as feminist or Catholic perspectives on women's social status and the perception of the female body in art, our work seeks a balanced, exploratory approach.

Building upon these established methodologies, our research incorporates Symbolic Interactionism to examine the nuanced interactions between users and the designed furniture. Unlike traditional design methods that focus solely on functionality, our approach emphasizes the symbolic significance of religious motifs—particularly the Virgin Mary as a mother figure—to foster emotional and psychological well-being.

Additionally, insights from *Haptics and Vision in Architecture* and the *Haptic Labs* principles underscore the importance of sensory engagement in design. These frameworks have guided our approach, especially in creating tactile and visual elements that foster a multi-sensory experience. Furthermore, *Designing through Making: Exploring the Simple Haptic Design Space* emphasizes the role of hands-on, iterative design as a pathway to understanding user interactions through haptic feedback. Inspired by this approach, our research adopts a tactile, exploratory process in which user feedback and iterative prototyping play a crucial role in refining the furniture's design. This aligns with our objective of creating furniture that engages users both physically and psychologically, connecting them more deeply to the piece.

Employing a mixed-methods approach—integrating both qualitative and quantitative techniques—this study aims to explore how the design process in furniture creation can mediate and support women's physical and mental health. By drawing on tactile principles, symbolic themes, and sensory-centered design, this research seeks to position the furniture as a conduit for fostering inclusivity, challenging societal norms, and addressing issues related to gender and identity through thoughtful design.

The research methodology is structured into two integral parts, each designed to provide a comprehensive understanding of the researched element and its potential impact. The first part involves a virtual gallery, offering various formats for presenting the product. This digital platform serves as a dynamic space where the (future) user can engage with the furniture, explore different versions, delve into the philosophy behind the work, and grasp the overall mission of the design. Through this virtual gallery, users are afforded a multifaceted introduction to the product, transcending traditional exhibition formats. Complementing the virtual gallery is the physical exhibition, an immersive audio-visual

experience carefully crafted to offer users a tangible encounter with the artwork. Within this space, users not only observe the product but actively participate in its exploration. The interactive nature of the exhibition allows (future) users to test the furniture, gaining firsthand experience of how the element functions beyond the confines of a private interior. This approach aims to bridge the gap between the digital representation and the tangible reality of the product, providing a more holistic understanding.

To further enrich the research, additional efforts are focused on capturing user responses to the seating experience. This involves a nuanced exploration of how the furniture affects users from both a haptic and ergonomic standpoint. Understanding the sensory and physical interactions users have with the seating is crucial for refining and optimizing the design. Moreover, the research delves into the emotional aspects, probing whether sitting on the furniture elicits a sense of security and comfort. These user responses contribute valuable insights, shaping the ongoing development of the project and informing decisions related to material selection, form, and functionality. By combining the virtual and physical dimensions of the exhibition, as well as actively soliciting user feedback, the research methodology seeks to create a robust foundation for understanding the product's reception and its potential implications for users. This multifaceted approach aligns with the project's overarching goal of not only showcasing the design but also fostering a meaningful and interactive dialogue between the creation and its audience.

RESULTS AND DISCUSSION

To better understand the importance of social norms, body language semantics and gender dynamics in design, these principles can be effectively integrated into the creative process. A recent case study was chosen as a key inspiration for previous research demonstrating how design can challenge societal conventions, empower users and reflect deeper socio-cultural issues through innovation of form, space and material.



Fig. 4 a, b: An anthropomorphic collection of furniture with implemented signs of semiotics and semantics of the human body.

source: <https://thedesignedit.com/deep-dive/reclaiming-the-female-body/>

Anna Aagaard Jensen's work exemplifies how socio-cultural issues can be interrogated through unconventional design installations that merge art and activism. Her series of art-design chairs, "*Basic Instinct*," (Fig. 4 a) challenges societal norms by encouraging women to reclaim physical space. Developed within the context of research into female identity and kinesics (body language), these chairs highlight distinct postural differences between men and women in public spaces, with emphasis on how mainstream

culture perceives their body language. The design is intended to encourage women to adopt expansive postures, thereby rejecting the societal restrictions that often dictate their physical comportment. (Franck, K.A., Paxson, L., 1989)

The chairs feature anthropomorphic and biomorphic forms inspired by the female anatomy, particularly emphasizing feminine curves and softness. Jensen reinforces these symbolisms by employing a color palette derived from the natural blush tones of women's cheeks and implementing uneven surface textures. These textures intentionally mimic the irregularities of human skin, such as stretch marks, celebrating imperfections and subtly challenging homogenized beauty ideals.

Jensen's work posits that through intricate details and makeup-inspired elements, these pieces manifest as "complex beings that are feminine, intelligent, and sexual at the same time." This multi-layered conceptual approach reflects the complexity of womanhood, surpassing conventional stereotypes. As such, these chairs serve not only as functional seating but also as artistic provocations that prompt discourse on body language, spatial dynamics, and the gendered expectations imposed by society.

Her creative process was deeply informed by her observations of gendered behaviors, particularly in televised media, where women's body language is typically moderated based on external perceptions. Men, on the other hand, often exhibit instinctive, expansive postures, which Jensen seeks to address in her designs. "*Basic Instinct*" thus becomes a critical analysis of how social expectations influence women's physical autonomy in public settings.

Further reinforcing her activist stance, Jensen expanded the collection with the "*Dear Mother*" (Fig. 4 b) bed, which symbolically portrays the act of childbirth and motherhood. This piece mimics the embrace of a mother and the female reproductive system, using caricature-like visual forms to evoke discussion about maternal themes. While the bed's visual exaggerations may seem playful, they serve as an entry point for deeper reflections on the historically obscured aspects of femininity, reproduction, and the taboo nature of these topics in contemporary art, society, and media. Both the bed and chairs, while designed as functional furniture, transcend their practical roles, embodying conceptual strength that challenges typical notions of domestic objects.

Jensen's design methodology integrates traditional materials like resin and acrylic with modern production technologies. However, her use of advanced fabrication techniques, such as digital modeling and CNC machining, pushes the boundaries of what functional furniture can convey. By employing these modern technologies, she underscores the timeliness and socio-political relevance of her work. The 3D printing of prototypes and models enhances precision, allowing Jensen to experiment with complex forms and surface textures that would otherwise be difficult to achieve through conventional methods. In particular, 3D printing offers the ability to produce organic forms layer by layer, which enhances the symbolic quality of the furniture pieces.

Her approach highlights how emerging manufacturing technologies, paired with conceptual rigor, can create design artifacts that are both visually and socially disruptive. The sculptural chairs and bed not only serve as practical objects but as symbols that invite critical reflections on gender dynamics, body politics, and societal constructs, thus positioning Jensen's work at the intersection of design, activism, and artistic expression.

Unlike Anna Aagaard Jensen's work, which primarily focuses on reclaiming physical space through expansive postures, our designs integrate symbolic elements that foster emotional connections. This dual focus on physical ergonomics and symbolic representation offers a more holistic approach to design for mental and physical health.

A comprehensive study was conducted to gather user feedback on the designed furniture, focusing on haptic and ergonomic features. Responses were collected from a sample of 100 participants, representing a diverse female demographic, through surveys and in-depth interviews. Key areas of feedback included comfort, aesthetic appeal, and emotional resonance with the design.

Quantitative analysis showed that 87% of respondents rated the ergonomic features as highly comfortable, emphasizing the effectiveness of the design in meeting physical comfort requirements. Additionally, 75% of participants reported an emotional connection to the aesthetic elements, highlighting the design’s ability to resonate on a symbolic and sensory level.

In an effort to create a fresh aesthetic and tactile experience, unconventional materials were chosen for upholstery, each selected for its unique, skin-like qualities. These materials, typically not used for upholstery, were specifically chosen to introduce a new look and feel that it challenges traditional perceptions of furniture design. By incorporating surfaces that evoke sensations of smoothness, warmth, or even rubbery textures, the design aims to engage users through touch and redefine their sensory connection to the furniture.

Tab. 1 Material research analysis.

Skin-like material	Percentage
Silk	43%
Latex	37%
Neoprene	15%
PVC Rubber	5%

As shown in Table 1, silk was the most preferred material, with 43% of respondents favoring its smooth and luxurious feel. Latex followed with 37%, providing a slightly rubbery texture that adds a unique tactile dimension. Neoprene was chosen by 15% of participants, offering a balance of flexibility and firmness, while PVC rubber was selected by 5%, appreciated by a smaller segment for its distinctive, cooler sensation.

For further study and research direction, the designed furniture piece—a chair—will be placed in its intended context, specifically within Catholic churches. This placement aims to capture additional responses and feedback from potential users in an authentic setting, allowing for a deeper understanding of how the design functions within its intended space and purpose.

CONCLUSION

Innovations inspired by human perception in the field of society and art are unique in many aspects. Their visuals are closest to us; we recognize them not only through the physical senses but also find beauty in their (im)perfection. Gender equality, as a method applied in design and art research, will be the most important task in design in the coming decades. Our research and creation focus on women as "living matter" and material. The female body symbolizes various concepts and ideas in the world of art and design, be it fertility, vulnerability, purity, or sensuality. We perceive the individual's position in society and the functioning of a person in their complexity as a source of inspiration on several levels. The research began with a first phase involving a methodology based on the creation of a database of anthropomorphic seat shapes and upholstery materials not commonly used in upholstery to ensure sufficient haptic comfort. The most interesting perspective of

inspiration is the fact that the structure of the material can be considered as materially programmed information about the human skin. The long-term goal of the project is the development of models and prototypes of furniture and materials that achieve the required functional, ergonomic, and visual-aesthetic properties of the "new sensibility" in shaping and execution based on the transfer of the feminine aspect. The objects thus become not only furniture but also artistic expressions and tools for discussing the language of women's bodies and social norms. The proposed project aims to question traditional gender stereotypes and confront the audience with social problems related to gender equality. Our vision is to simulate the human visually, artificially simulate his new unique parameters (including flaws), and transform them into an artistic form that enables the development of a new generation of products inspired by current social issues. Innovations inspired by the shapely female body are one of several paradigms that seek solutions to an ongoing social crisis. We assume that each such proposal will have its unique utility value, material composition, size, and artistic, and aesthetic character.

Design and art need alternative sources of inspiration primarily because they push the boundaries of creativity and bring new ways to reflect on the world around us. Influences such as cultural and social movements, philosophical ideas, spiritual currents, or abstract ideas allow creators to perceive the world differently. These alternative approaches allow designers and artists to disrupt established norms and explore new relationships between form, function, and meaning.

So what constitutes alternative inspiration? It can be drawing from marginalized subcultures, philosophical currents that challenge materialism, or conventional understanding of space and time. Inspiration can come from social phenomena, such as global movements for justice, inclusion, and equality, which designers transform into abstract forms or experimental projects.

The result is a creation that goes beyond purely visual and functional values and that appeals to deeper emotional and intellectual levels. Such design is able to create space for reflection and polemic, thus opening new discussions about how we perceive the world and how we react to it. Thus, alternative inspiration is not only a departure from the usual but a means for questioning our experiences and beliefs in a space-time that is constantly in motion and transformation. This approach gives design and art the ability to reach and transform our thinking outside the usual frames of reality as creators, but also as viewers and users thinking outside the usual frames of reality as creators, but also as viewers and users.

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AUTHORS' ADDRESSES

Doc. Mgr. art. Marián Ihring, ArtD.
Technical University in Zvolen
Faculty of Wood Sciences and Technology
Department of Furniture and Interior Design
T. G. Masaryka 24, 960 01 Zvolen, Slovakia
marian.ihring@tuzvo.sk

Mgr. art. Simona Hanes
Technical University in Zvolen
Faculty of Wood Sciences and Technology
Department of Furniture and Interior Design
T. G. Masaryka 24, 960 01 Zvolen, Slovakia
simoonahanes@gmail.com

