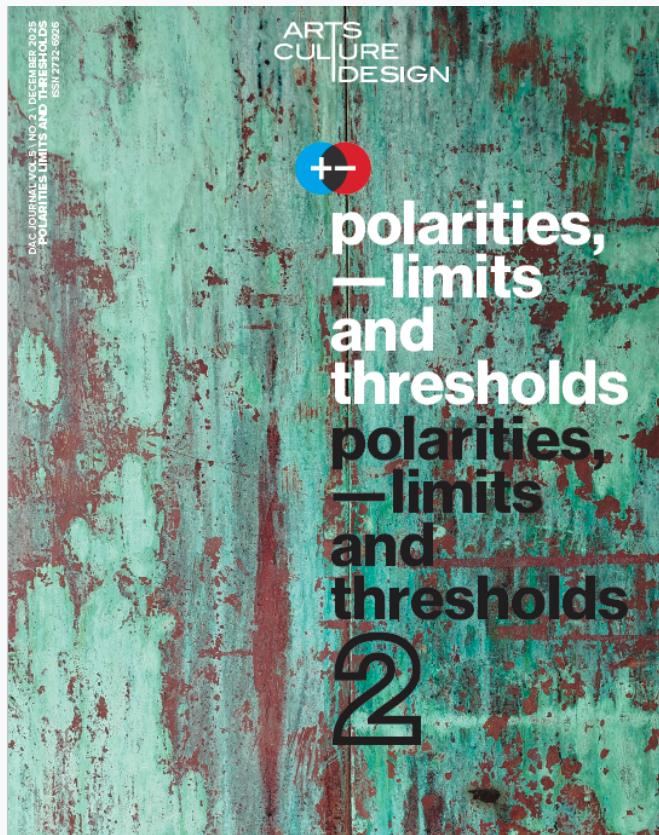


Design/Arts/Culture

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POLARITIES, LIMITS AND THRESHOLDS



Thinking With The Hands: Design As A Practice Of Interdisciplinary Translation

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is not merely communicative but epistemological, as it entails reconstructing meaning and generating new modes of knowledge.

Several authors provide relevant perspectives in this regard: for Tony Fry (2011), design is a political and cultural force that shapes possible futures; for Ezio Manzini (2015), it constitutes an act of social mobilisation fostering sustainable ways of living. Likewise, Cameron Tonkinwise (2018) identifies this critical field of thought-in-action in which designing becomes a reflection on the ethical and cultural conditions of making.

This framework positions design as an act of translation — not only between disciplines but also between dimensions of human experience. The entire design process thus becomes a form of symbolic mediation between the individual and the world, between gesture and thought.

The research underlying this article is situated within this perspective, adopting a research through design approach (Frayling, 1993), in which the act of designing constitutes both process and method of knowledge production. Drawing and making, material experimentation, are here understood as epistemological tools — ways of thinking through the hands — that prioritise exploration, questioning, and transformation of social realities through design practice.

Childhood, as a social and cultural construct, is a complex theme that demands sustained reflection. The economic, technological, and symbolic transformations that have occurred, particularly over the past two decades, have significantly reconfigured how childhood is understood and experienced. Today, children's everyday lives are profoundly shaped by the ubiquity of digital devices, the intensification of educational and extracurricular routines, and by consumption practices that tend to anticipate and mimic adult behaviours.

The phenomenon of adultisation, widely discussed by authors such as Postman (2012), Sarmento (2004), and Silva (2014), highlights the loss of children's symbolic autonomy and the progressive blurring of boundaries between childhood and maturity. If, for centuries, the child was viewed as a "miniature adult" (Ariès, 1978), contemporary society paradoxically reinstates that condition, mediated by a proliferation of products, images, and advertising discourses that position the child within a socially standardised and economically profitable role. These considerations suggest that play — a fundamental domain for cognitive and emotional development (Piaget, 1952; Vygotsky, 1978) — is often replaced by guided activities or consumer objects that constrain imagination.

Within this context, design acquires a significant role. More than creating products, design can intervene critically in the material culture of childhood, promoting new forms of interaction, exploration, and learning. It is within this framework that the project The Friendm@ker emerges, proposing an object of children's clothing that integrates pedagogical, ludic, and symbolic dimensions, constituting a mediating space between playing, learning, and imagining.

Through the fusion of illustration, textile structure design, and product design, this work explores the potential of design as a translational language between distinct disciplinary domains. The result materialises an interdisciplinary practice that brings together artistic making and educational thinking, manual gesture and reflective thought, the object and the subject who experiences it.

THINKING WITH THE HANDS: DESIGN AS A PRACTICE OF INTERDISCIPLINARY TRANSLATION - CASE STUDY: THE FRIENDM@KER

ABSTRACT

This article stems from research conducted within a Master's program in Product Design, focusing on the creation of a playful and pedagogical children's clothing object conceived as a device for learning and critical reflection on contemporary childhood culture. The study starts from the observation that childhood is increasingly adultised, reduced to a logic of consumption, and distanced from the playful experiences that allow the child to develop imagination, creativity, and symbolic thought.

The project The Friendm@ker aims to counter this trend by designing a hybrid object—simultaneously clothing, a toy, and a picture book—that reintroduces play as a language essential to child development. Based on an exploratory methodology, the design process combined theoretical research, material experimentation, and visual creation, integrating principles of sustainability, inclusion, and playfulness.

The article presents design as a practice of interdisciplinary translation, mediating between fields such as pedagogy, psychology, illustration, and textile design, and generating cultural and affective meanings that go beyond the utilitarian function of the object.

INTRODUCTION

In contemporary contexts, design transcends its traditional function of producing artefacts to assume an active role in cultural mediation and social transformation. Beyond addressing utilitarian needs, design now operates as an interpretative agent, capable of translating collective values, practices, and imaginaries into material and relational forms.

The term interdisciplinary translation is introduced here to designate the process through which design acts as a medium for transmitting ideas, methods, and languages across distinct fields, reinterpreting them within new frameworks. This process

2. DESIGN AS MEDIATION AND TRANSLATION

Thinking through the hands implies understanding design as a practice of mediation and translation. The designer operates in an intermediate space between thought and matter, transforming ideas, values, and experiences into tangible forms. In this transition from one domain to another — from concept to object — design functions as a cultural translator, reinterpreting distinct languages and bodies of knowledge within a new system of meaning.

Bruno Latour (1993) defines translation as a process that connects heterogeneous elements without fusing them, enabling the coexistence of differences within a shared space of action. From this perspective, design is by definition a translational practice: it mobilises knowledge from fields such as technology, art, sociology, psychology, and pedagogy, converting them into organised matter — ultimately, into sensory experience.

Michel Serres (1982) similarly observes that the translator, like the mediator, “weaves bridges” between domains that do not mutually comprehend one another, creating fertile zones of intersection. It is precisely within these intersections that design finds its operative territory.

For Tim Ingold (2013), designing is an act of correspondence between the human and the material world — a continuous process of attention and response. The designer does not impose form upon matter but rather establishes a dialogue with it, allowing the object that emerges to materialise that encounter. This view aligns closely with the notion of thinking through the hands, in which gesture becomes thought and making becomes language.

Likewise, Richard Sennett (2008) identifies in the craftsman the paradigm of embodied knowledge: an individual who understands the world through making, whose intelligence is both manual and reflective.

However, this mediating role of design extends beyond the material dimension. Ezio Manzini (2015) describes contemporary design as a practice of social mobilisation, capable of articulating values, people, and contexts around shared visions of the future. Tony Fry (2011) reinforces this by characterising design as an ontological force that “designs the very way we live,” with profound ethical and political implications. Cameron Tonkinwise (2018) adds that design should be understood primarily as a form of critical thought-in-action — an activity that questions the consequences of making and the responsibility inherent in designing sustainable futures.

Design, therefore, calls upon both language and mediation: it is a practice of translation between disciplines, between temporalities, and between worlds. The designer is thus an interpreter — one who renders complexity legible, converting the intangible (values, affects, intentions) into the tangible (matter, form, colour, structure, gesture).

Within the cultural and pedagogical context of childhood, this interpretative function gains particular relevance. Designing for children entails translating symbolic worlds into meaningful sensory experiences, acknowledging that play itself constitutes a form of knowledge.

To understand design as mediator and translator is, therefore, to recognise its nature as a field of meaning production — a space where gesture and reflection intertwine.

Each project becomes an anchored translation, an act that traverses disciplinary and cultural boundaries to generate new ways of thinking and, above all, of inhabiting the world.

Peter Zumthor (1998) reminds us that the essence of design lies in the sensory relationship between body and matter — in the capacity to create atmospheres that evoke meaning prior to rational interpretation. Similarly, Merleau-Ponty (1945) emphasises that knowledge is embodied: the body does not merely observe the world; it participates in it.

From this phenomenological standpoint, the designer’s act is interpretative — an active dialogue between perception, environment, and gesture. The research through design approach (Frayling, 1993) finds its validation here: knowledge emerges from the very process of designing, from the interaction between thought and materiality. Design thus becomes a materialised epistemology — a practice born from both intellectual reflection and sensory experience through action.

Barthes (1980) reminds us that every expressive act contains an affective and tactile dimension — a punctum whose nerve lies in the distance between subject and object. In design, that moment of contact is the locus of decoding: the point at which matter becomes language. While Sennett (2008) portrays the craftsman as one who thinks with the hands, Barthes conceives the gesture as the trace of meaning. Both authors converge on the notion of a sensitive intelligence, where making itself becomes a form of critical thought.

3. METHODOLOGY AND RESEARCH PROCESS

The methodological process of the project was not conceived as a linear sequence of stages, but rather as a field of discovery. In design, thinking and making are rarely separate — reflection emerges through action itself. Within this research, through design logic (Frayling, 1993), gesture is already thought in motion. The methodology adopted here is therefore both practical and translational: through drawing, illustrating, sewing, and testing, the designer converts ideas into matter and returns to culture a tangible form of knowledge.

The methodology underlying the development of The Friendm@ker project followed a qualitative and exploratory approach centred on design practice as a research instrument. The methodological path was structured around a set of interconnected stages involving theoretical research, contextual analysis, material experimentation, and project-based creation. The aim was to understand how design can respond critically to the phenomenon of childhood adultisation and to propose alternatives that restore to the child the symbolic space of play.

The research began with a phase of bibliographic collection and analysis, drawing on authors from developmental psychology, childhood sociology, education, and design. Piaget (1952), Vygotsky (1978), and Bronfenbrenner (2000) provided the conceptual foundations for understanding children’s cognitive and social development. In parallel, the studies of Ariès (1978), Postman (2012), and Sarmento (2004) helped to situate the historical evolution of childhood and its contemporary transformations. Additional contributions were considered from authors addressing children’s consumption and material culture (Cardoso, 2006; Machado and Souza, 2011; Weber and Maffezzoli, 2016).

In a second phase, the project evolved into empirical observation and contextual analysis, which involved studying behaviours and objects present in children's everyday environments, both domestic and educational. The objective was to understand play practices, aesthetic preferences, and how children interact with the objects surrounding them. This observation revealed the predominance of stereotyped toys and short-lived products, often linked to media franchises and with limited creative potential.

Based on these findings, the need was identified to develop a ludic and pedagogical clothing object conceived as a mediator between body, imagination, and learning. The design process followed an inductive method in which drawing and material experimentation played a central role. Drawing was understood as a form of thinking (Sennett, 2008) — an exercise in thinking through the hands that translates ideas and values into concrete solutions.

The process included successive phases of textile experimentation and prototype construction using different materials and techniques. Textures, colour compositions, three-dimensional elements, and illustrative applications were explored to integrate both the functional character and the expressive potential of the object. Collaboration with specialised technicians and an industrial partner enabled the production of prototypes employing sustainable materials and low-impact digital printing techniques.

The methodological trajectory thus followed a spiral model — alternating research, design, experimentation, and evaluation. Each iteration contributed to refining formal and symbolic decisions, guiding the project towards a balanced synthesis between design, pedagogy, and sustainability.

4. CASE STUDY: THE FRIENDM@KER

4.1. PROJECT INTENTIONS AND OBJECTIVES

The Friendm@ker emerged as a response to a market saturated with clothing, books, and toys that often fail to address children's real needs, frequently reinforcing logics of consumption and adultisation. The project proposes an interactive, gender-neutral, and ludic-pedagogical object aimed at children aged 5 to 10, designed to foster learning processes that integrate knowledge and play, encourage responsible consumption, and promote an enduring emotional bond between the child and the object. It intends to "restore time and space to the realm of play," to reintroduce children to books, and to support processes of socialisation, communication, and visual and verbal literacy, with an emphasis on emotional sustainability and on "fewer things for longer."

4.2. NARRATIVE AND ETHICAL MATRIX: PETER AND THE WOLF

The symbolic structure of the project is anchored in the musical tale Peter and the Wolf (Sergei Prokofiev, 1936), chosen for its ludic-pedagogical nature and its capacity to communicate values such as courage, responsibility, friendship, teamwork, respect for animals, preservation of habitat, and emotional regulation (fear, joy, sadness). Each character in the story is associated with a specific instrumental timbre, reinforcing sensory legibility and the mediation between sound, image, and action. Within the framework of the project, the tale functions as a cultural mediator, providing both a narrative lexicon and an ethical field that are translated into illustrations, textures, sequences, and manipulations.

4.3. CONCEPT OF THE HYBRID OBJECT (CLOTHING-BOOK-TOY)

The Friendm@ker integrates three functions within a single artefact: vest (a wearable garment with pockets), book (a narrative with illustrations and captions), and play mat (formed when the piece is disassembled and unfolded). These elements are connected through a system of flaps (detachable captions and icons). This hybridisation of languages — seeing, reading, interacting; verbal, visual, and auditory — extends the object's life cycle, reduces material consumption, and transforms the spectator into an active participant: the child wears, reads, and plays, engaging with the narrative through interaction.

4.4. ILLUSTRATION DEVELOPMENT: "DRAWING WITH SCISSORS"

The graphic process shifts from manual drawing to material drawing, employing interlinings (white and black), calico, and tulle. The act of "drawing with scissors" induces formal synthesis — silhouettes of characters, trees, houses, and animals — while the superimposed tulle adds colour, transparency, texture, and veiling, completing the image and enriching the palette. Some tulle layers were digitally printed (three elements), introducing subtle nuances into the environments. The illustrations were then digitised and integrated into the vest pattern, adjusting composition and visual rhythm.

4.4.1. VERBAL-VISUAL RELATIONSHIP

A non-conventional model was adopted: the visual narrative possesses semantic autonomy, and the text does not occupy a pre-defined space. Reading emerges from interaction and from the coupling of elements (flaps and scenarios), preserving the child's creative autonomy and enabling both individual and adult-mediated reading experiences.

4.5. THE "FLAPS" AS TRANSLATIONAL DEVICES

The flaps are circular fabric pieces with distinct functions, identified by chromatic embroidery:

- Flaps I (blue/red): story captions (Peter version and Maria version), numbered and sequenced to facilitate reading;
- Flaps II (green): illustrated fragments (cropped scenes and details) for use within the play scenarios;
- Flaps III (orange): blank circles designed for drawing or writing with an erasable pen, allowing for restarts and reinterpretations;
- Flap IV (cyan blue): a single message associated with sharing and sustainability ("When I no longer want to play with my Friendm@ker, I will offer it to another child.").

The flaps operate as a mobile lexicon that the child reconfigures, translating the narrative into new sequences and games. The inclusion of letters and numbers was introduced after observing sequencing difficulties during early user interactions.

4.6. PLAY MAT: SCENARIOS AND INTERACTION

When the vest is opened and unfolded, the child discovers that play continues: the piece transforms into a play mat featuring three large illustrated settings — Forest, City, and Garden. In these scenarios, baby-snap fasteners allow flaps II and III to be attached,



enabling free associations between image and scene, inventing stories, drawing characters, or writing messages. The mat thus becomes a platform for imagination and a testing ground for memory, creativity, and symbolic reasoning.

4.6.1. APPROPRIATION AND RECOMBINATION

Flaps II consist of cut-out illustrations from the story, decontextualised to serve new purposes of narrative reassembly. Flaps III enable original creation. The erasable pen grants reversibility to the gesture — to draw, erase, and rewrite — reinforcing the iterative nature of play and the ongoing recomposition of meaning.

4.7. MORPHOLOGY AND PLAYFUL INTERFACE

The object integrates a vest with pockets (for support and transport), a book (images and captions), a play mat (an expanded ludic space), and flaps (text and image open to manipulation). Its hybrid materiality and multifunctionality imply synaesthetic engagement and interaction: to access the story and activities, the child must wear, open, attach, exchange, and fold — translating narrative into action and text into play.

4.8. TARGET AUDIENCE, GENDER NEUTRALITY, AND SAFETY

The research led to a clear decision: the creation of a gender-neutral product that counters patterns of adultisation associated with gender stereotypes. Development focused on comfort, safety, age-appropriateness, and usability — always to support motor, cognitive, and social development and foster positive experiences.

4.9. NAMING AND SOCIAL FUNCTION: THE FRIENDM@KER

The name encapsulates the project's intention: a play companion, a social facilitator that helps the child to make friends. The use of "@" asserts inclusivity and rejects binary stereotypes. The designation operates as both an ethical–pedagogical sign and an identity marker of the object.

4.10. MATERIAL AND EMOTIONAL SUSTAINABILITY

Sustainability is conceived here as a design strategy: multifunctionality and long-term usability reduce the need for new products, while affective engagement prolongs the sense of belonging ("when the vest no longer fits, it still fits the imagination"). The transition from wearing to playing and remembering reinterprets durability as continuity of meaning — beyond mere physical endurance.

4.11. VALIDATION AND ITERATION

The introduction of numbering and lettering on the flaps responded to sequencing difficulties identified during early trials; the transition from manual drawing to textile-based illustration consolidated both visual identity and tactile experience; the play mat and fastening devices enhanced autonomy, narrative recombination, and the child's active participation in constructing the play experience.

5. RESULTS AND DISCUSSION

The results obtained from the development of The Friendm@ker project demonstrate the



distinctive position of design as a mediator between disciplinary fields and as a translational practice between thinking and making. The process of tactile engagement and the dialogue between illustration, form, and materiality reinforce the importance of the body and gesture as active dimensions of children's learning. Although the experimental observation phase was conducted with a small group of participants, the outcomes revealed significant tendencies toward engagement and spontaneous appropriation of the object. The children showed curiosity and autonomy, reinterpreting the illustrations and attributing their own meanings to the depicted characters. The vest thus proved to be a mediator of narratives and social interactions, fostering collaboration, emotional expression, and symbolic play.

From the perspective of sustainability, the project demonstrated that it is possible to integrate materiality, symbolic depth, and durability. In contrast to most contemporary children's clothing — marked by rapid obsolescence and dependence on media-driven trends — The Friendm@ker proposes an ethic of prolonged use and affective identification. The object's value lies in its capacity to generate memory, to become meaningful through lived experience.

The analysis of this process also enabled reflection on the role of design as a field of expanded knowledge. The Friendm@ker asserts itself within design as a practice of translation and mediation, in which knowledge emerges from material exploration and sensory interaction. The object functions as a catalyst for narratives and learning, revealing design's potential to generate embodied knowledge through experience.

This translational process is both manual and cognitive: the act of drawing, structuring, and composing textiles transforms thought into matter and form. As Sennett (2008) notes, "the hand thinks as much as the mind," and it is precisely within this dialogue between gesture and reflection that design affirms itself as a critical and cultural practice.

6. FINAL CONSIDERATIONS

The study developed within this research evidences the potential of design as an instrument of cultural and educational mediation. Through the object The Friendm@ker, it is demonstrated that it is possible to conceive children's products that transcend market logics and restore to the child the right to symbolic construction, imagination, and play. More than an object that can be worn, it constitutes an ethical and epistemological proposition: design as a platform of knowledge that interconnects body and thought, making and understanding.

The vest created through this project functions simultaneously as a physical support and as a narrative device, materialising a vision of design committed to sustainability, inclusion, and the affective dimension of objects. The reflection emerging from this research suggests that design in contemporary contexts can act as an agent of interconnection between information, culture, and sensibility, grounded in matter that can be shared. In this sense, The Friendm@ker demonstrates that design can operate as a universal language, crossing boundaries between art, pedagogy, and technology, serving as the essential translator of human values into tangible experiences.

The notion of thinking through the hands, which gives this article its title, synthesises this mediating capacity. To think through the hands is to understand that

knowledge can arise from gesture, and that the design object is, above all, a form of materialised thought.

This perspective reaffirms design as an interdisciplinary practice of translation. Contemporary design may assume an exploratory and pedagogical basis, whose epistemological stance aligns with approaches that position design within learning, critical design, or relational design. Thus, it is recognised that design produces its own form of knowledge — distinct from that of other fields — grounded in a process where thinking and making are inseparable, and where knowledge emerges from project-based practice, material experimentation, and interaction with the human and social context. This view acknowledges design as a form of research with its own distinctive position, capable of translating complex questions into visual, tactile, and relational propositions.

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