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Designing Inclusion: Semiotic and Cultural Frameworks for Gendered Spaces in Contemporary Interior Design

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Abstract
This study investigates the intersection of semiotics, gender theory, and inclusive design to explore how interior environments operate as visual and spatial discourses that construct, reinforce, or subvert social narratives of power, identity, and belonging. Drawing upon critical theory and feminist design scholarship, it interprets interior design as a semiotic system in which material arrangements, spatial hierarchies, and aesthetic choices communicate cultural meanings (Barthes, 1972; Bourdieu, 1984; Hall, 1997). The paper adopts a critical–theoretical approach that integrates semiotic analysis with inclusive design principles to illuminate how gendered codes are embedded in, and can be reconfigured through, spatial design practices.

Three original conceptual frameworks are proposed: the Gender–Power–Design Interaction Model, which maps the relational dynamics between gender identity, spatial representation, and domestic power structures; the Semiotic Layers of Interior Space, which identifies how meaning is generated across denotative, connotative, and ideological levels; and the Inclusive Design Continuum, which outlines a progression from traditional to equitable design paradigms. Collectively, these frameworks offer an interpretive methodology for understanding interior space as both a cultural text and a site of negotiation where inclusion, accessibility, and social equity are contested and redefined.

By situating design as a form of cultural authorship, the study advances a humanistic and ethical understanding of spatial practice, one that foregrounds diversity, representation, and the semiotic construction of social identity. The findings highlight the urgency of embedding critical reflection within design pedagogy and professional practice, positioning inclusive design not merely as a technical criterion but as a transformative cultural process (Imrie & Hall, 2001; Papanek, 1985; Preiser & Ostroff, 2001).
Keywords: Inclusive Design, Semiotics, Gendered Space, Visual Communication, Cultural Theory, Design Research

1. Introduction
Design has long functioned as a visual and spatial language through which societies express their collective values, identities, and hierarchies. Every design decision, whether manifested in form, material, proportion, or spatial organization, carries embedded cultural codes that both mirror and construct social realities (Hall, 1997; Lefebvre, 1991). Interior environments, in particular, offer a unique medium for examining how social structures and ideologies become materialised through space. As such, design operates not merely as an aesthetic practice but as a form of cultural authorship, a means by which symbolic meanings and social relations are inscribed into the material world (Attfield, 2000; Forty, 1986).

In the twenty-first century, inclusive design and diversity have evolved from peripheral concerns into core ethical and aesthetic imperatives across design disciplines. This shift reflects a growing awareness that design shapes lived experience and can either perpetuate or dismantle exclusionary systems (Imrie & Hall, 2001; Julier, 2017). Contemporary online,

physical, and hybrid environments are increasingly defined not only by their materiality but also by their semiotic and cultural dimensions, by the narratives they sustain about who belongs, who is visible, and who is rendered invisible. The semiotic lens thus allows design to be understood as a process of meaning-making, in which visual and spatial languages encode social hierarchies, ideologies, and identities (Barthes, 1972; Williamson, 1978).

Within this context, inclusive design must be reconceptualised as more than a technical framework focused on accessibility or compliance. Rather, it should be understood as an interpretive and ethical practice that challenges the symbolic order of design, its power to define norms, represent difference, and mediate social relations (Heylighen & Bianchin, 2013). Inclusion becomes not a static outcome but an evolving dialogue between designer, space, and user; it is both a material and semiotic act that reconstructs spatial hierarchies and cultural representations.

This paper argues that interior design plays a critical role in reconfiguring these semiotic structures. By engaging with feminist and semiotic theories, it situates the designed environment as a site of both representation and resistance, where the politics of visibility, gender, and identity are negotiated. In doing so, the study repositions design as a transformative cultural act, one capable of challenging hegemonic aesthetics and articulating new forms of spatial equity and social meaning (Bourdieu, 1984; Haraway, 1988).

2. Theoretical Background

Semiotics, the study of signs, symbols, and the processes by which meaning is produced and interpreted, provides a compelling analytical foundation for understanding design as a communicative and cultural system (Barthes, 1972; Eco, 1976). Within this framework, design is not simply an act of problem-solving or decoration, but a form of visual language through which societies articulate values, beliefs, and ideologies. Every element of a spatial composition, its form, texture, colour, lighting, and materiality, acts as a signifier that communicates meaning, shaping how users perceive and experience the environment. Consequently, space becomes a form of text: it can be *read*, *decoded*, and *interpreted* much like language (Gottdiener, 1995).

In the context of interior and architectural design, semiotic analysis reveals how space constructs and conveys messages beyond its functional purpose. The arrangement of rooms, the hierarchy of spatial access, or even the placement of furniture carries ideological weight, communicating who is welcome, who has authority, and who is marginalised (Jencks, 1984). Design, therefore, becomes an act of cultural authorship, a process through which social structures are both expressed and maintained. As Lefebvre (1991) argues, space is never neutral; it is produced through social relations and, in turn, reproduces them.

Building upon this premise, feminist design theorists have expanded semiotic inquiry by examining how gendered power relations are inscribed into spatial and material forms. Scholars such as de Lauretis (1987) and Grosz (2001) contend that the organisation of space frequently mirrors patriarchal hierarchies, embedding cultural assumptions about gender roles, visibility, and authority. For instance, public–private divides, domestic interiors, and urban layouts often reproduce traditional binaries between masculine and feminine domains, reinforcing who occupies which spaces and under what terms. In this sense, the “gendering” of space extends beyond function or utility, it becomes a process of *cultural signification*, shaping how individuals embody and perform identity within the built environment (Weisman, 1992; Rendell, 2000).

At a deeper level, semiotics helps uncover how meaning operates across multiple layers, denotative, connotative, and ideological. As Barthes (1972) suggests, while denotation refers to the literal or functional meaning of a design element, connotation encompasses its symbolic and cultural associations. A domestic threshold, for instance, might denote a boundary between interior and exterior space, yet connotes ideas of protection, belonging, or exclusion. These overlapping semiotic layers are central to understanding how design both reflects and constructs systems of social difference, particularly those relating to gender, identity, and inclusion.

This theoretical foundation underpins the three conceptual frameworks developed in this study. The Gender–Power–Design Interaction Model examines how spatial and material design mediates relationships between gender identity and social power. The Semiotic Layers of Interior Space articulates how meanings are produced and circulated across different semiotic levels within the built environment. Finally, the Inclusive Design Continuum reconceptualises inclusivity as a dynamic cultural process, one that extends beyond physical accessibility to embrace representational equity, cultural sensitivity, and social justice. Together, these frameworks establish a critical foundation for understanding design as a semiotic practice that both mirrors and reshapes the cultural order.

3. Visual Semiotics and Gendered Space

Figure 1 introduces the Gender–Power–Design Interaction Model, a conceptual framework that situates interior and architectural design as an active mediator of gendered power relations. Drawing from visual semiotics, the model proposes that spatial compositions operate as sign systems through which cultural narratives of identity, hierarchy, and embodiment are communicated (Barthes, 1977; Kress & van Leeuwen, 2006). In this sense, design does not merely organise physical environments; it encodes values and social norms into material form.

Within gender studies, the built environment is widely recognised as a cultural text that reflects and reinforces gendered expectations. Scholars such as Weisman (1992) and Massey (1994) argue that spatial arrangements often privilege masculine-coded behaviours, autonomy, visibility, territoriality, while relegating feminine-coded behaviours to peripheral or private domains. These patterns are not accidental but emerge from long-standing socio-cultural semiotic systems that assign symbolic meaning to spatial attributes such as openness, enclosure, height, symmetry, and prominence.

The Gender–Power–Design Interaction Model positions these elements as signifiers within a broader semiotic field. Composition, proportion, spatial flow, and material choices act as communicative devices that either stabilise or contest binary representations of gender. For example, vertical emphasis, rigid geometries, and visually dominant axes may connote authority or control, echoing what Bourdieu (1977) describes as the "habitus of power" embedded in spatial structures. Conversely, fluid circulation patterns, permeable boundaries, and multimodal zones of interaction can function as counter-signifiers that resist hegemonic spatial narratives (Rendell, 2000).

Importantly, inclusive design interventions can operate as semiotic disruptions, intentional breaks in conventional design language that challenge normative gender codes. Through strategies such as spatial symmetry, equitable visibility, multisensory navigation, and diverse representations of embodiment, designers can re-signify the environment and create conditions for more plural and inclusive experiences (Imrie & Hall, 2001; Heylighen, 2014). These interventions reconfigure the semiotic landscape of interior space, shifting it from one that naturalises power differentials to one that foregrounds relationality, participation, and equity.

Thus, gendered space is not a fixed condition but an ongoing semiotic negotiation. The framework presented here emphasises that designers act as cultural authors whose decisions shape how users interpret, inhabit, and belong within a space. By recognising design as a semiotic practice, the Gender–Power–Design Interaction Model underscores the transformative potential of inclusive design to disrupt entrenched power structures and foster more just and ethical spatial futures.

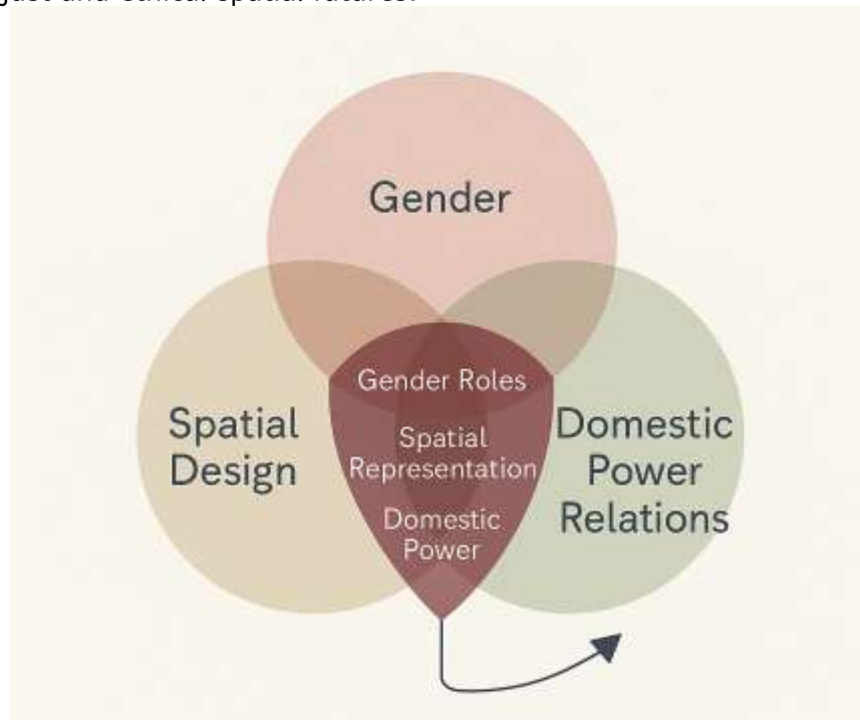

Figure 1. Gender–Power–Design Interaction Model

4. Cultural Codes and Meaning Construction in Design

The Semiotic Layers of Interior Space (Figure 2) articulate how cultural codes operate at multiple levels, denotative, connotative, and ideological, within interior environments. Drawing from Barthes' (1977) triadic schema, the model proposes that users do not simply "see" a space; they interpret it through culturally learned frameworks of meaning. At the denotative level, an interior communicates basic functional information: this is a waiting area, that is a reception desk, these are circulation corridors. At this stage, the user primarily decodes the practical affordances of the setting, where to sit, where to move, where to seek assistance (Gibson, 1979; Lawson, 2001).

At the connotative level, however, design elements begin to signify social and emotional values. Colour schemes, material contrasts, lighting atmospheres, and spatial compositions communicate messages about formality, intimacy, prestige, or exclusion (Hall, 1997; Pallasmaa, 2005). For instance, an interior that combines dark polished stone, sharp geometries, and controlled lighting may connote authority and exclusivity, while one that employs soft textures, warm tones, and open sightlines may connote hospitality and relational openness. These connotations are not universal; they are filtered through cultural, gendered, and socio-economic lenses that shape how users read the "mood" and social expectations of a space (Bourdieu, 1984; hooks, 1992).

The third level, the ideological layer, concerns the deep structures of meaning that naturalise particular social orders. Here, interior space participates in reproducing or challenging broader narratives about whose bodies are normative, whose practices are legitimate, and whose identities are considered central or marginal (Lefebvre, 1991;

Ahmed, 2012). For example, an office layout that assumes all workers are able-bodied, permanently present, and unencumbered by care responsibilities reflects a neoliberal, masculinised ideal of productivity. Conversely, interiors that accommodate diverse bodily needs, caregiving roles, and modes of presence (on-site, hybrid, remote) visualise a more inclusive ideology of work and belonging (Imrie & Hall, 2001; Titchkosky, 2011).

By explicitly mapping these semiotic layers, the model encourages designers to anticipate not only how spaces function, but how they will be interpreted and inhabited by different users. This is particularly significant in relation to gender, where apparently "neutral" design decisions may carry implicit messages about who is expected to occupy a space and in what manner (Massey, 1994; Rendell, 2000). A waiting room decorated exclusively with stereotypically masculine imagery, for instance, may subtly communicate that male clients are the primary or preferred users, even if the service is nominally open to all. The Semiotic Layers of Interior Space framework thus positions inclusive design as an interpretive practice: one that consciously interrogates how denotative, connotative, and ideological meanings intersect to shape user experience.

For practitioners and educators, attending to these layers opens up a more reflexive and critical design process. It invites iterative questioning: What does this space literally show? What does it suggest or imply? Which norms and power relations does it quietly affirm? And crucially, how might its semiotic structure be reconfigured to support more inclusive and equitable forms of spatial experience? Viewed through this lens, interior design becomes a site where cultural codes are not only reflected, but actively rewritten.

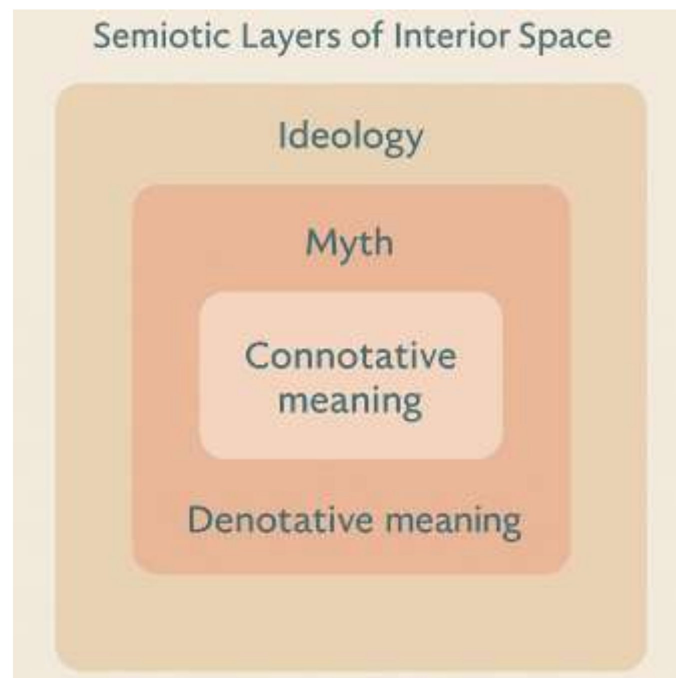

Figure 2. Semiotic Layers of Interior Space

5. From Representation to Practice: Inclusive Design Paradigms

The *Inclusive Design Continuum* (Figure 3) synthesises semiotic, ethical, and participatory dimensions of design to illustrate how spatial and visual practices evolve in their treatment of identity, power, and representation. Building upon earlier theorisation in inclusive and universal design (Clarkson et al., 2013; Imrie & Luck, 2014), the continuum highlights a conceptual shift from surface-level diversity gestures to deeper, transformative forms of inclusion.

At its initial stage, *representational tokenism*, design relies on symbolic visibility, often through aesthetic cues or superficial demographic references, to signal diversity. Scholars argue that such gestures, while visually inclusive, risk reinforcing existing power structures by reducing identity to signs rather than lived experience (Ahmed, 2012; Puwar, 2004). These surface-level interventions operate primarily at the denotative level of meaning, contributing little to structural or ethical change.

The second stage, *functional inclusion*, reflects a more established approach in accessibility discourses. Here, design complies with established standards, guidelines, or ergonomic requirements (Horton, 2006; Persson et al., 2015). While this phase meaningfully broadens access, it remains primarily reactive and technical, addressing bodies through accommodation rather than co-authorship. As critics of universal design note, functional inclusion often privileges normative assumptions about users, offering equal access but not equal representation (Hamraie, 2017).

The final stage on the continuum, *transformative inclusion*, situates design as a socially engaged practice in which marginalised identities function as co-producers of meaning and space. This paradigm echoes participatory and co-design traditions (Sanders & Stappers, 2008; DiSalvo, 2012), emphasising reciprocity, shared authorship, and iterative dialogue. Transformative inclusion acknowledges that spatial meaning is negotiated, plural, and deeply contextual; it therefore seeks to redistribute semiotic and material power within the design process. Rather than designing *for* marginalised groups, it advocates designing *with* them, foregrounding lived experience as an epistemic resource.

By situating these three paradigms along a continuum, Figure 3 demonstrates that inclusive design is not a fixed standard but an evolving ethical stance. It invites designers, educators, and policymakers to interrogate the cultural codes underlying their practice, recognising that genuine inclusivity requires an ongoing commitment to reflexivity, collaboration, and critical cultural awareness.

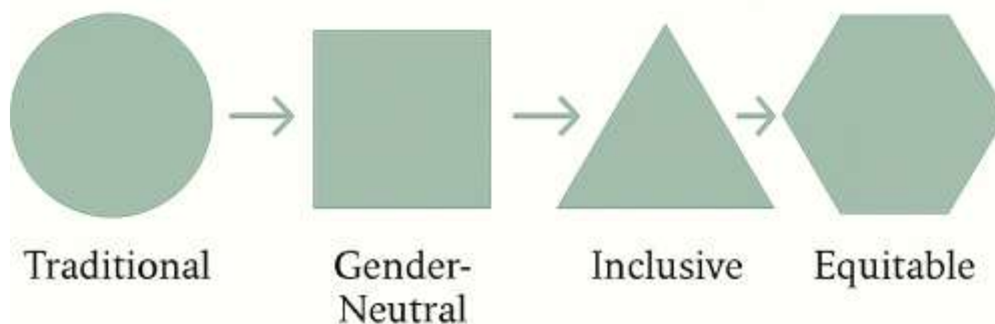

Figure 3. Inclusive Design Continuum in Domestic Interiors

6. Discussion

By integrating semiotic and cultural analysis, this study demonstrates that inclusive design is not only a technical or ergonomic challenge but also a philosophical and ethical one. Gendered spaces operate as texts through which inclusion or exclusion is visually articulated and normalised. When spatial narratives repeatedly centre particular bodies, often white, cisgender, able-bodied and male, while relegating others to the periphery, they reproduce what Lefebvre (1991) terms the "production of space" as a reproduction of existing social relations.

Conversely, when design embraces diversity as a form of cultural authorship, it challenges hegemonic codes and redefines the boundaries of visibility, participation and belonging.

Intersectional approaches to space foreground how multiple forms of oppression intersect in everyday environments, and how design can either reinforce or disrupt these intersections (Crenshaw, 1989; hooks, 1990). For example, a waiting room that anticipates a wide range of bodies, languages, sensory preferences and care relationships embodies a different ethical stance than one optimised solely for efficient throughput.

This perspective aligns with feminist epistemologies that view knowledge as situated, embodied and relational (Haraway, 1988). Designers do not stand outside culture as neutral problem-solvers; they are implicated in and shaped by the very power structures they seek to address. Recognising this, inclusive design pedagogy must cultivate critical reflexivity, encouraging students and practitioners to interrogate their own positionalities, assumptions and aesthetic preferences (Smith, 2012).

For practice, the combined frameworks proposed in this paper, the Gender–Power–Design Interaction Model, the Semiotic Layers of Interior Space and the Inclusive Design Continuum, offer complementary tools for analysing and reimagining interior spaces as sites of social negotiation. They invite designers to move beyond a purely functional or stylistic understanding of interiors towards one that acknowledges space as a medium through which identities are affirmed, contested and re-authored. Future research could empirically apply these frameworks in live projects, exploring how users from diverse gendered and intersectional backgrounds experience redesigned spaces over time.

7. Conclusion

This article concludes that achieving genuinely inclusive design demands a sustained and critical engagement with the semiotic dimensions of space. Designed environments operate as cultural texts through which social norms, hierarchies, and identities are communicated, negotiated, and contested (Barthes, 1972; van Leeuwen, 2005). Within this symbolic landscape, designers function as cultural narrators, authors of the signs, codes, and visual metaphors that give form to the lived experience of inclusion and exclusion.

The conceptual frameworks introduced in this study, the Gender–Power–Design Interaction Model, the Semiotic Layers of Interior Space, and the Inclusive Design Continuum, offer analytical tools for unpacking how meaning circulates within spatial and visual design. Together, they support a deeper understanding of how design acts not only as a material practice but also as an ideological intervention. By foregrounding the intersections of gender, power, and visual communication, the article highlights the transformative role design can play in challenging hegemonic structures and expanding the boundaries of representation.

Crucially, the findings underscore that inclusive design extends beyond compliance-based notions of accessibility or representational tokenism. Instead, it requires designers to adopt a reflexive, ethically grounded stance that recognises users, particularly marginalised communities, as co-authors of meaning (Sanders & Stappers, 2008). Such an approach aligns with feminist and intersectional epistemologies that view knowledge as embodied, situated, and relational (Haraway, 1988; Crenshaw, 1991). It also reaffirms the idea that design practice is inseparable from its socio-political consequences.

Ultimately, this article argues that design must be understood not merely as aesthetic production but as a moral, cultural, and political act. By treating space as a semiotic and ethical field, designers are positioned to craft environments that promote equity, amplify diverse identities, and contribute to more just and inclusive societies.

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