RETHINKING THEORIES IN INTERIOR DESIGN: A CRITICAL EXPLORATION

Eliz Erdenizci[*]

Department of Interior Architecture, Eastern Mediterranean University, Famagusta,
North Cyprus

Abstract. This study explores the absence of discipline-specific theory in interior design and evaluates the application of existing theories from the field's body of knowledge. Interior design is a relatively young profession and has long been subject to criticism for lacking a unique theory while frequently relying on borrowed theories from other disciplines. Even though this adds richness to its multi-disciplinary nature, this gap viewed as a problem in establishing the discipline's legitimacy and growth. To address this, the study implements content analysis to systematically review theory-based articles of the selected journals using the keywords such as "theory", "concept", "theoretical model" and "paradigm" as assumed codes for the identification of theories. Findings present 28 distinct theoretical frameworks that support the inherently multi-disciplinary nature of interior design and investigate the potential of the interiority concept that is trending in recent studies for the development of discipline-specific theory.

1.   Introduction

This research focuses on the critique of the lack of discipline-specific theory in the field of interior design and assesses the use and application of theories in the discipline's body of knowledge. Within the field of scholarly research, interior design is relatively new field that expands our knowledge on the interaction between people and interior spaces. Although it is a young discipline, the roots of interior design stretches back to Antique civilizations, i.e. Ancient Egyptians crafting their mud homes with spiritual scenes, utilitarian furnishing and fabrics (Pile & Gura, 2013). The interiors were used to display richness and distinctiveness with decorative realms until the popularization of interior design in the 19th century. Following the cutting-edge contemporary movement and styles, the discipline began to evolve from histories of objects and furnishing into profession, conceiving interior designers as form-makers while meeting the functional and aesthetic needs of the users (Hollis, 2018).

Through the development of the discipline, interiors have seen as the integral part of the building that contain them and this inevitably linked the discipline to the architecture as well as other related fields of arts. Accepting the discipline as a branch of other fields allowed the profession to become multi-disciplinary with recognition of broad

characteristics. However, its multi-disciplinary nature has also been criticized as a burden on generating discipline-specific theories that directly belong and originated from the interior design (Hewlett, 1985; Hasell, 1993; Loustou, 1988; Clemons & Eckman, 2016; Bae *et al.*, 2019; Erdenizci, 2013). The effectiveness of borrowed theories is also questioned because, in some cases, they are forced to fit the problem and fall short of describing the underlying variables of interior design (Hillier & Leaman, 1978; Tate & Smith, 1986; Guerin, 1991).

The concern of not having discipline-specific theories on the existing body of literature reviewed as a gap that needs to be filled to establish the discipline as more legitimate profession (Cys, 2009). Lawson (1979) and Karassowitsch (2019) also highlighted the importance of sustaining autonomy and prestige in the professionalization of disciplines, validating their distinctive structure. As theory-buiding is crucial for the development of the discipline's body of knowledge (Strauss & Corbin, 1990), this study reviews the use and application of each theory to the discipline and questions the existence of a theory specific to interior design.

2.   Absence of specialized theories in interior design

Abend (2008) posits that theory is an essential framework that establishes the correlation between variables and enables researchers to elucidate specific factors, conditions and phenomena. According to Hunt (1991), theory offers researchers the philosophical direction they need to carry out their research as well as critical support for them as they develop new concepts. In order to provide accurate predictions and explanations for the interconnected relationships between these variables, theory plays a crucial role in research (Wacker, 1998). Imenda (2014) identifies the components of a theory as (a) a systematized presentation of interconnected descriptions and intentions; (b) a specification of conceptual relationships and (c) an explanation of events based on the relationships that have been specified. Combining these components yields a very specific and distinct definition of any variable and relationships that are verified through repeated experimentation (Wacker, 1998). Theory development is therefore crucial to expanding the fields' body of knowledge.

The importance of theory for interior design was also highlighted by Thomson (1978), who also brought attention to the dearth of theory development in the industry. According to Hewlett (1985), there is also a "lack of sensibility" and a "limited awareness" of the "human depth of which interior design is capable..." (p.10). Tate and Smith (1986) also stated that a theoretical field of study is required to test novel concepts because there are very few systematic methodologies or profound theories of interior design to direct experts or professional judgments. Hasell and Benhamou (1988) noted that while interior designers employ concepts in their work, they hardly ever present them as theories that elucidate the underlying relationships between behavior, design and environment or specific phenomena that speaks to the lack of theories in the field. It has been argued that not many design educators have developed theories that properly recognize the design phenomenon. Additionally, Hasell (1993) stated that developing original theories of explanation should be a challenge in addition to improving interior environments.

Loustou (1988) asserts that no theory pertaining specifically to the field of interior design has been established. Nearly ten years prior to this assertion, Hillier and Leaman (1978) claimed that theories for interior design are not original or sufficient; rather, they

are taken from related fields and made to fit the situation (Guerin, 1991; Marshall-Baker, 2000). Additionally, Hasell (1993) and Kaukas (2001) asserted that borrowed theories are primarily social science theories that aim to comprehend how people behave in relation to their surroundings. Likewise, research by Bae et al. (2019) and Clemons and Eckman (2016) talked about how interior design researchers borrow theories and the problematic practice of developing theories specifically for interior design.

3. Methods and Materials

This study's development was predicated on the content analysis technique and encompasses a methodical examination of theory-based articles. By using content analysis technique, meanings can be retrieved and legitimate conclusions can be drawn from data sources by identifying words, texts and other types of data (Krippendorf, 2004). This was defined by Berelson (1952) as "a research technique for the objective, systematic and quantitative description of the manifest content of communication". By the implementation of content analysis technique, the use of certain theories is identified in interior design literature. In line with the study's objective, it was important to examine the application of these theories to define the existing theoretical frameworks in interior design.

In decisions of the content analysis, particular keywords are determined to identify applied theories (Table 1). The listed keywords "theory", "concept", "theoretical model" and "paradigm" were selected and used as the filtering mechanism for identifying theory-based studies and the existing theories in the field. The scientific journals that are peer-reviewed and solely focus on the interior design discipline's research, practice and education are reviewed to assess the theories in the latest body of knowledge for the profession. In total, four journals with a dedication to contributing to the knowledge of interior design are investigated: (1) *"The Journal of Interior Design"* - the oldest scientific journal in the field-and (2) another early established journal, *"IDEA",* together with (3) the relatively new journal of *"Interiors: Design, Architecture, Culture"* and (4) the youngest journal in the field, *"The Journal of Interior Design and Academy"*, are reviewed as credible sources of interior design discipline. The issues of the selected journals that are published between 2021-2024 are assessed in the research. In total, there are 187 articles published between the stated years of the four journals (JID- 63, IDEA-39, Interiors-51, INda-34).

Table 1. Definitions of the Selected Keywords for the Content Analysis

Selected keywords for content analysis	Definitions
Theory	A system that sets relationships between the variables; explanation of particular phenomenon, factors and conditions (Abend, 2008); a set of interrelated propositions, systematic point of view (Imanda, 2014).
Concept	A way of thinking; components of thought contents that are intentional and representational (Burge, 1993); components of theory (Chinn & Kramer, 1999).
Theoretical model	Set of assumptions about particular system; inner structure or composition of a system (Achinstein, 1965); a synthesis (Liehr & Smith, 1999).
Paradigm	Embodied beliefs; a worldview which reflects assumptions about reality, ethics and epistemology (Mertens, 2012); a paradigm is adopted by a researcher in observing a specific issue (Liehr & Smith, 1999).

Based on the listed keywords, studies that are oriented by theories are included, while articles that vaguely identify a theory and/or have no theoretical orientation are excluded during the analysis (Table 2). Determining the listed keywords as the assumed codes allowed the author to familiarize with the existing data in the literature as well as having pre-set codes allowed for the replicability of the study for several times. Thence, research design yielded reliability by establishing guided protocol/codebook for the consistency in coding.

Out of 187 articles, 29 articles are investigated as theory-based studies. In the analysis of the 29 articles, thematic coding is implemented and sub-themes are generated accordingly. Data analysis involved definition of each theory and its application to interior design.

Table 2. The process of the analysis demonstrating the flow of taken steps

Steps	Protocol on taken decisions
(1) Selection of academic journals	• Peer-reviewed • Scientific • Focused on interior design discipline * *4 journals are selected based on the above limitations (JID, IDEA, Interiors, INda)*
(2) Decision on the level of analysis	• Determination of the keywords for content analysis * *Theory, concept, model and paradigm are the selected keywords for the content analysis of the articles.*
(3) Review of articles	• Filtration mechanism for inclusion and exclusion of articles based on the selected keywords. o Inclusion of theory-based articles o Exclusion of articles that lack the definition and application of theory • Further analysis on the (included) theory-based articles o Development of sub-themes o Definitions on the application of theory to the discipline of interior design

4. Results

4.1. Applied theoretical frameworks and sub-themes

After analyzing 187 articles from recent issues of the chosen journals published in 2021–2024, only 29 of them were found to be theory-based studies. Table 3 shows these 29 articles underpinned by their sub-category and theoretical frameworks and briefly explain their application to the interior design discipline.

The following list explains the sub-themes derived from the theory-based articles by the author:

• Environment and behavior - The creation of positive experiences and spatial ability are identified through the discussion of experience models, perception, movement mapping and stimuli types;

• Learning - The following resources are offered to practitioners and students of interior architecture: learning methods, models, pedagogies and ability tests;

• Design - Various theories are employed in the field of design to comprehend spatial organizations, offer guidance for designers and generate fresh perspectives on interior spaces;

• Creativity - innovative approaches, exploratory models and research strategies to

investigate interior spaces and the spatial experience they provide;

• Technology - digital environments, virtual interiority, machine learning techniques and eye tracking devices as predictive models to ascertain internal behaviors;

• Material Culture- the meaning of interior creation is derived through the analysis and conceptualization of materiality, non-human agency and the role of objects.

Table 3. Categorization of theories by the author

Sub-Category	Theory/Model/Concept/Paradigm	Application to interior design
Creativity	Theory of archive	The archive is used as a creative methodology to explore the language of interiority and the juxtaposition of domestic and institutional interior (Cintio, 2021).
	Theory of assemblage	The assembly collecting is implemented as a creative method within the practice (i.e., exhibition and museums) (Martin, 2021).
	LEBEN model	*"LEBEN model (Lived Experience of the Built Environment* helps to build an understanding of the disability experience and acknowledges this special experience as creative input in the design process (Liebergesell *et al.*, 2021).
	Fantastic space	Non-human agencies in design education expand the capacities of creative thinking with an emphasis on fantastic spaces (Dinçer *et al.*, 2022).
Material Culture	System of Objects	Objects, personal possessions and their arrangement are used to reveal a scenography of interiority that carries the meaning of home within the domestic interior (Ioannidou, 2021).
	Theory of trans-culturation	Drawing on the "theory of transculturation" by Ortiz, interior atmosphere and its socio-spatial features were analyzed in terms of their materiality (Çetin *et al.*, 2022).
	Critical race theory	Exploration of the relations between race-making and place-making (Iyamah, 2024).
	The modern interior	The modern interior is used as a lens to conceptualize "the material culture of home" with a focus on the girls' creation of their room (Yan, 2021).
Technology	Concept of digital intimacy	The "concept of digital intimacy" deals with the new behaviors by "which intimacy is performed digitally" (Loder, 2021). It is investigated in the "contemporary experience of home", together with the datafication of interior.
	Fixation pattern theory	It generates an understanding of people's "visual attention to spatial elements" in environmental scenes and its possible connection with spatial and cognitive ability (Khoudi, 2022; Mirkia *et al.*, 2022).
Design	The oblique function theory	Oblique function theory is applied to understand the sensation and perception of inclined planes in interior settings (Özdamar, 2022).

	Plastic number theory	Plastic number theory is implemented to investigate architectural proportions by methods of sensory psychophysics (Proietti & Gepshtein, 2021).
	Ontological security framework	Spatial organizations together with the theoretical hallmarks of ontological security are investigated and supported by design decisions (Bollo, 2022).
	Screenterior paradigm	The study generates a "new way of thinking" about interior space *"where screens are the new glass curtain wall (Abudayyeh, 2021)"*.
	Concept of illusion	A theoretical framework is created to guide the designers on the role of lighting illusions in interior design (Aydıntan *et al*., 2022).
	Pop-up concept	The study explains the concept of pop-up space, its classifications and its potential usage in altering contexts, i.e., pandemic space (Yıldırım, 2022).
	Correctional design	The study generates cues and directions for correctional design, emphasizing the connection between environmental stimuli and behavioral reaction (Galford, 2021).
Learning	Game-based learning	Games with their fictional spaces are used as teaching materials for architecture and interior architecture students (Çörekçi & Kavut, 2022).
	Sense of community model	Model provides suggestions to increase "students' sense of community in the online learning environment" of design studios (Nubani, 2022).
	Affective domain of learning framework	"The affective domain of the learning framework" is investigated to reunderstand critique practices in interior design studios (Turner, 2021).
	Spatial Ability Test (AISAT)	It expands knowledge on the spatial ability of design thinking and performance (Cho & Suh, 2021).
Behaviour	Spatial user experience model	SUE is used to assess the "affect of waiting room features on patient experience". It provides insights to generate "positive experiences for patients and visitors" (Nehme, 2021).
	Theory of attentional bias	The theory of attentional bias is enlarged to an environmental scale to understand the probable relationship with "spatial ability and creative performance in spatial design" (Suh & Cho, 2021).
	Productivity factor (PF) model	The productivity factor generated an understanding on the affect of seat orientations; zones, etc. to assess productivity through micro-movements of the uses (Khoudi, 2022).

Among those 29 theory-based articles, a total of 28 distinct theoretical frameworks were identified, while total fixation theory is referenced in two distinct studies (Khoudi, 2022; Mirkia *et al*., 2022). The author divides the six sub-themes of the studied theoretical

frameworks into the following categories: environment and behavior, learning, design, creativity, technology and material culture. Theoretical frameworks in the categories of "design (n=7)" and "technology (n=6)" were the most frequently cited categories followed by the "environment and behavior (n=5)", while the category of "material culture (n=4)", "creativity (n=4)" and "learning (n=4)" were the least frequently cited categories.

The vast majority of the theories listed in Table 3 are derivatives of theories from other fields, including sociology, philosophy, anthropology, psychology and education. Furthermore, three theories are related to different fields: the oblique function theory belonging to the field of architecture; plastic number theory belonging to the mathematics and art and the productivity factor theory belonging to the field of economics.

4.2. Cited list of concepts attributing a sandwich approach

While 29 of the 187 articles made explicit use of theory, 52 of the articles made reference to specific concepts without using theoretical frameworks as the foundation for their investigation. The stated concepts of these studies are listed in Table 4, including the notions of interiority, home, sustainable design and so forth. Table 3 did not include these articles as the stated concepts were only mentioned in the literature and did not orient the research in overall.

Table 4. Concept citations in the reviewed articles

Concepts	Cited in journal:	No. of citation
The concept of home	Interiors	2
Pandemic home	Interiors JID	2
Housing typology	Interiors	2
Notion of room	Interiors	5
Dungeon	Interiors	1
The concept/sense of space	INda	4
Adaptive re-use	INda	2
Post-pandemic design	INda	2
Sustainable design	INda	2
Collective memory	INda	1
Perception	INda JID	3
Orientalism, Occidentalism	INda	1
Interiority	IDEA Interiors JID	8
Fantasy-oriented space/ fictional space	IDEA INda	4
Identity	JID	1
Oriental interiors	JID	1
Body ecology	JID	3
Virtual interiority/virtual reality	JID	6
Third space	JID	1
Design concept	JID	1

As a result, a sandwich approach was applied when the concepts were cited in isolation within the articles. According to Clemons and Eckman this sandwich approach occurs when theory is "cited at the beginning of an article and referenced at the end, but

not necessarily used to guide the design of the identified study or to contribute to theory building for interior design" (2011).

5.   Discussions

5.1. Multi-disciplinary domain of knowledge in interior design

This research explored the use of theoretical frameworks in interior design by analyzing 187 articles from specified journals published between the years 2021-2024. Out of 187 articles only 29 articles were discovered as theory-based studies. These studies were then categorized into 6 sub-themes by the author. Listed sub-themes defined as "creativity" represented by four articles that explored interior space through creative methodologies; "material culture" including four articles that delve into meaning of interior formation through materiality and the six articles captured under the "technology" sub-theme involved the technology related theories in design practices to optimize the user experience. "Design" sub-theme found out to be the most frequently applied theme with seven articles, illustrating prominence of design-related theories in guiding the design processes, while "learning" sub-theme emerged in four articles emphasized the integration of theoretical knowledge in design education to develop critical thinking and problem solving skills among students. Lastly, "environment and behavior" sub-theme represented in five articles highlighted the importance of sensorial and perceptual models in shaping the spatial experience.

Sub-themes and their identified theories were found out as being majorly adapted from the social sciences, i.e. theory of fixation pattern, theory of assemblage demonstrated the contribution of various academic domains to the interior design discipline. Marshall-Baker (2000) explained the body of knowledge in interior design as being interdisciplinary in nature as social science theories concern the human and environmental factors impacting the development, health and quality of life. Similarly Hewlett (1985), Hassell (1993), Loustou (1988), Clemons and Eckman (2011), Bae et al. (2019) and Erdenizci (2013) also concerned the incorporation of theories to the discipline from other fields.

Supportably, the research findings show that significant numbers of theoretical frameworks in interior design are based on theories from other disciplines such as sociology, philosophy, psychology, anthropology and education. The multi-disciplinary approach is well documented in the existing literature, emphasizing the importance of borrowing and adapting theories from other fields to enrich interior design research.

Furthermore, the identification of theories from architecture, mathematics and economics highlights the diverse and interdisciplinary nature of theoretical applications in interior design, implying that the field will continue to evolve by incorporating diverse properties.

5.2. The promise of the notion of interiority

According to the findings of this study, only 29 articles are found out to be theory-based studies. However, 52 articles published in the reviewed journals referred to specific concept without using theories as the basis for their research. This situation defined by Clemons and Eckman (2011) as sandwich approach; when theory is cited at the beginning and end of the article but not used to contribute to theory building. In this study, several concepts were frequently cited, such as interiority.

This illustrated that the "interiority", which exhibits positive trends in recent studies related to the field, has the potential to bridge a particular theoretical gap in interior design (Table 4). Despite being a relatively new field, research has advanced in comparison to previous theories and the recent study is expanding the understanding of the interaction between people and their surroundings. The ongoing interest in interiority contributes to the development of new scholarly work and offers an exploration of the interior as potentially transient, urban and interdisciplinary, rather than always being contained within a physical boundary. Beginning with Sennett's (2016) lecture on Interiors and Interiority, the range of publications includes "Harvard Design Magazine Inside Scoop" (2023), volumes of the "Interior Architecture Theory Reader" (Marinic, 2018) and "Interiority: A Critical Theory of Domestic Architecture (Hvejsel, 2011)", in addition to articles such as "Interiority as the Conditions of Interior (Pimlott, 2018)", "Urban Interiors: A Retroactive Investigation (Leveratto, 2019)" and "Thinking Beyond Dualities in Public Space" (Poot *et al.*, 2019) demonstrated porous aspects of the interior. Moreover, within the parameters of this study, interiority is investigated through conceptual ideas such as the "virtual interiorities" (Vahdat, 2023); "curated interior" (Cintio, 2021); the "scenography of the interiority", (Ioannidou, 2021); the "screenterior paradigm" of the virtual public interiors (Abudayyeh, 2021). These studies offer interiority as being inherently tied to unique interactions within the interior environments. Thereby, the richness of the interiority concept can evolve into a distinct body of theory, fostering a deeper understanding on the complexity of human and interior space interactions. The further research in the notion of interiority is promising and plays an important role in determining future direction of interior design research, practice and education.

6.   Conclusion

This study provides a detailed analysis of the theoretical frameworks used in recent interior design research, demonstrating their diverse applications and multidisciplinary nature. By breaking down these frameworks into six sub themes, the study presents a thorough overview of how theory informs and guides discipline. The identification of 28 distinct theoretical frameworks across six sub-themes demonstrates the inherently multidisciplinary nature of interior design research by representing how many of these frameworks are derived from other fields. Findings illustrate that this multidisciplinary approach broadens the theoretical landscape, allowing interior designers to draw on a more diverse set of perspectives and methodologies. However there is still a gap in the discipline-specific theory building to embrace the marginality of the discipline.

Moreover, the ongoing sandwich approach represents a limited engagement with theory, in which concepts are acknowledged but not fully explored or integrated into the research framework. This approach can result in superficial interpretations and missed opportunities for deeper theoretical insights. Findings of this research suggest that to mature as a discipline, interior design must make a concerted effort to fully incorporate concepts into research methodologies and analyses, rather than simply citing them. The frequent use of terms like "interiority" and "virtual interiority' demonstrates their significance in the field. However, without a strong theoretical foundation, the potential of these concepts is underutilized. Creating integrated theoretical frameworks that incorporate these concepts can increase the depth and rigor of interior design research, offering more robust explanations. In this regard the notion of interiority holds a

significant promise for the disciplines future. As the field evolves the emphasis on interiority is likely to play an important role in determining the future direction of the interior design research practice and education. Therefore, this research recommends incorporating the notion of interiority further in the educational context since teaching the importance of theory throughout the research and design processes can help future designers recognize the value of theoretical foundations.

For practitioners this study also suggests the integration of diverse theoretical frameworks may result in more informed and reflective design practices, ultimately improving the quality and effectiveness of interior design projects. For instance sub-themes of the research illustrated how environmental and behavioral theories as well as theories centered on technology and digital environments can be used to design spaces that improve user experience and assist designers in incorporating novel tools and techniques to improve not only design outcomes, yet the body of knowledge for the discipline.

Thence this research illustrates that future research should continue to investigate the term interiority further in developing discipline-specific theories and keep integrating theoretical frameworks from various disciplines, as this can lead to novel insights and advances in theory building for the field. This approach not only broadens the scope of interior design research, but it also promotes a deeper understanding of complex design issues, resulting in a more holistic and nuanced approach to theoretical development.

Last but not least, it is should be also noted that there are certain limitations associated with this study. Only peer-reviewed or refereed articles published in specific interior design-related journals are included in the study. Non-theoretical articles are excluded from the general discussion of the research; only theory-based research articles are reviewed in order to understand how theories are applied and utilized in relation to the study's goal. This research does not cover books or any other type of scholarly publications. As such, the author does not assert that the collection of mentioned theories include all relevant theories pertaining to interior design. By addressing these limitations, future research can extend the scope of the academic publications including other types of data and/or review wider selection of design journals and broadening the timeframe can help to trace the evolution of these theories in history.

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