

Spatial Integrity Through Sequences: Contemporary Scenario Planning Techniques for Architectural Design

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Abstract

The research is shaped around the question: How can the implicit structures that make up contemporary scenario techniques be adapted to the architectural design process? The aim is to adapt the question sets that play role in development of scenario techniques to the architectural design process and to discuss the results theoretically and evaluate suitability for architecture. In the works of Rabiger, Truby, McKay and Snyder, the essence of the relationship between sequences and space has been discussed. The originality was ensured by defining a sequence-based intersection between narrative and architecture. As findings, it was seen that the concept pools obtained by adapting the question sets that mediate the development of scenario techniques to the architectural design processes by changing subject and target, overlap with approaches that argue that design processes can be advanced by development of question series in scenario processes. The reinterpretation of subjects, objects and actions made visible through the fragmentation of architectural design with series of strategies is important in terms of integrating user-focused themes into architectural design steps. As a result, implicit structure of contemporary scenario techniques can be adapted to architectural design processes and thus the user experience can be improved.

Keywords: Scenario-Based Design, Architectural Scenario, User-Centered Design, Design Methodology

Sekanslar Yoluyla Mekânsal Bütünlük: Mimari Tasarım İçin Çağdaş Senaryo Planlama Teknikleri

Öz

Araştırma temel bir soru etrafında şekillenir: Çağdaş senaryo tekniklerini oluşturan örtük yapılar, mimari tasarım sürecine nasıl uyarlanabilir? Bu bağlamda araştırmanın amacı, çağdaş senaryo tekniklerinin geliştirilmesinde rol oynayan soru setlerinin mimari tasarım sürecine uyarlanması ve sonuçların teorik açıdan tartışılarak mimariye uygunluğunun değerlendirilmesidir. Bu nedenle, ardışık sekansların incelenmesi ve senaryo tekniklerine odaklanan figürlerin açıklamaları literatür taraması yoluyla tartışılmaktadır. Rabiger, Truby, McKay, Snyder ve Kirsch gibi figürlerin eserlerinde kurgu tekniklerinin mekânsal bağlamına dair özler bulunması bu doğrultuda ele alınmıştır. Anlatı alanı ile mimari alan arasında sekans tabanlı bir kesişme alanı tanımlanarak araştırmanın özgünlüğü sağlanmıştır. Araştırmanın bulguları olarak, çağdaş senaryo tekniklerinin gelişimine aracılık eden soru setlerinin, özne ve hedef nesne değiştirilerek mimari tasarım süreçlerine uyarlanmasıyla elde edilen kavram havuzlarının, senaryo süreçlerindeki soru dizilerinin gelişimini dikkate alarak mimari tasarım süreçlerinin ilerletilebileceğini savunan figürlerin yaklaşımlarıyla örtüştüğü görülmüştür. Mimari

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tasarım sürecinin parçalara ayrılması yoluyla görünür kılınan öznel, nesnel ve eylemlerin, senaryo tabanlı stratejiler yoluyla yeniden yorumlanması, kullanıcı deneyimi odaklı temaların mimari tasarım adımlarına entegre edilebilmesi açısından önemlidir. Sonuç olarak, çağdaş senaryo tekniklerinin örtük iskeletinin mimari tasarım süreçlerine uyarlanabileceği ve bu sayede kullanıcı deneyiminin iyileştirilebileceği anlaşılmaktadır.

Anahtar kelimeler: Senaryo Tabanlı Tasarım, Mimari Senaryo, Kullanıcı Merkezli Tasarım, Tasarım Metodolojisi

1. Introduction

In order for the scenario, which stands out as a storytelling tool, to be used actively in the first phase of the architectural design process, it is necessary to present the similarities and differences between the editing techniques and architectural design steps. Wigley (2015) emphasizes that in order to successfully advance a creation process from parts to the whole in a workspace, data sets specific to that field should be evaluated. In this context, he discusses the importance of the specificity of the medium while pointing out the differences between painting, sculpture and architecture, and touches on the importance of the question of time for an architectural interpretation beyond the approaches that only deal with fundamental contrast issues. In the expanded field following the autonomy of architecture, it is seen that there should be new formal and problematic sources of inspiration ranging from landscape architecture to digital animations (Wigley et al, 2015, p.210-211). Relatedly, Mitchell (2003, p.8) mentions connections, networks, clocks, processes, discontinuities, living spaces, communities and reminds us of the sequential associations and formations that can be used to define architecture. There are strong sequential ties and a deep interaction between these associations and formations. All pieces exist with their own stories and develop the common story. Harvey (1973, p.22) on the space in which the parts form the whole, while pointing out the richness of the philosophy of space, emphasizes Cassirer's three basic spaces of 1994. While the first of these, organic space, is related to the spatial experience determined biologically, the second space, perceptual space, is used to point to a conception of space that is grasped through a neurological synthesis process, and symbolic space through symbolic descriptions. When viewed holistically, sequences and symbols change and reinforce the way the story is conceived and the space perceived. While experiencing a place, it can often be encountered that this context is followed in similar ways. Because of these parameters, usage of "architecture of narrative" as a supportive tool for architectural design process, combines the essences of "scenario for fictional narrative" and "scenario for efficiency" (Figure 1).

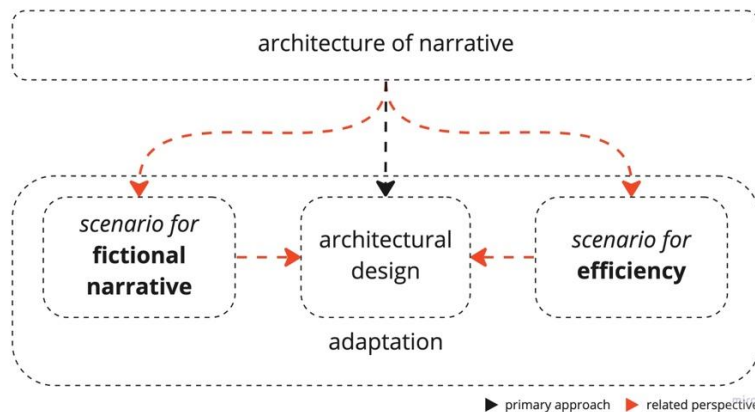


Figure 1. Potentials of scenario-based approaches for architectural design.

2. Architecture of Narrative

Considering the narrative as an architectural element reminds that architectural elements are also narratives and produce countless microcosms give meaning to the whole. While Libeskind (2004, p.221) emphasizes talking about places and evaluating places through the affect they leave on people to a kind of history construction that arouses thoughts, he mentions the language of joy that Proust created with the help of intense sensory memories. In this context, he points that how the space is shaped in the mind is critical. Because all these shaping processes are the result of a series of nesting situations. Stating that the intertwining of body and mind, emotion and mind, memory and imagination is a strong indicator of how important it is to shape the space in the mind, Libeskind said that through Proust, who was inspired by ordinary paving stones, he himself was inspired by mediocrity and that every single thing that disrupts the natural flow between the sequences is refers to the fact that the artifact should not be included in the working palette. It is about the importance of connection that Whorf (1956, p.36) explains why "connection" is linguistically important because it relates to the communication of ideas. He emphasizes that grouping ideas alone will not be sufficient to carry the semantic weight of those groups of ideas, since the criteria for a connection are defined by its intelligibility by others. Each person establishes a different connection and internalizes a different association scheme. For this reason, individual impulses and inferences are not effective in comprehending the whole story. Each sequence coexists with the other, and sequence wholes can only be examined through the multiple perspectives offered by the common understanding. This is the main reason why common linguistic concept stock and association define the story rather than embodied social or collective experience. Brook (1968, p.111) emphasizes that the characters and their situations should be read through the relationship they establish with their environment. This state of motion, in which the characters are in constant struggle with a series of form and meaning complexes, can only be grasped by reading the whole as a set of relations. People are responsible for each other, and each sequence has the potential to affect one person, and then all the others with whom he or she has dialogue and contact.

According to Vesely (2004, p.24-25), the way the viewer or listener recognizes the physiognomy of auditory and visual patterns is processed as a collage consisting of modulations of the auditory, motor and visual fields. All modules share a common articulated motion. This is the scenario for fiction. The abstract language formed by joint articulation can represent a unity expressed by visual representation and tactile experience. Vesely (2004, p.26) likens this situation to the fact that we begin to grasp the boundaries of acoustic and visual space when we realize that a certain music does not belong to a certain area, and reminds us that the reverberation phenomenon, which makes sense at this point, makes the movement communicative. Similarly, Eco, pointing to Petofi's model, mentions that the concepts of "Macropropositions of the fabula: themes, motives, narrative functions" are included under the title of "Narrative Structures". According to Calvino (1979, p.15-17), a fictional text is more complex than a textualized version of speech. Although both deal with possible situations, there are distinct differences between them. Eco explains these with the following details in his fictional narrative: the existence of a special entry formula, the introduction of chosen persons, the sequence of actions less localized in space and time, the presence of a beginning and an end, the need for events to start from the beginning for increased intelligibility, and the fact that data on the source of events can be summarized. At this

point, it can be recalled that Calvino (1979, p.16), while describing Zora rising beyond six rivers and three mountain ranges, treated it with an unusual presence like other

unforgettable cities. All the details in Zora, such as successive streets, rows of houses, streets, doors and windows, copper clock, barber clock, striped awning, fountain, astronomer's glass tower, melon seller's mansion, lion statue, Turkish bath, cafe on the corner, are all in one place. As in the musical, it represents an integrity in which no note can be changed on successive patterns. Therefore, it can be said that a place that cannot be erased from the mind exists with the coexistence of countless sequences in the mind. Psarra (2009, p.241), on the other hand, mentions that concurrent systems that reveal variants or invariants that indicate innovation are the most important components of configurational analysis. The idea of innovation, which seems to have internalized that architecture produces ever-expanding formal worlds, first creates processes embedded in successive architectural productions and then normative principles. Thus, the evolution of configurations can gain visibility as a set of rules for abstract entities. In this context, the renewal and diversification of sequences, and the construction of a metalanguage to connect with new configurations, may partially lead to paradoxes and conflicts (Figure 2).

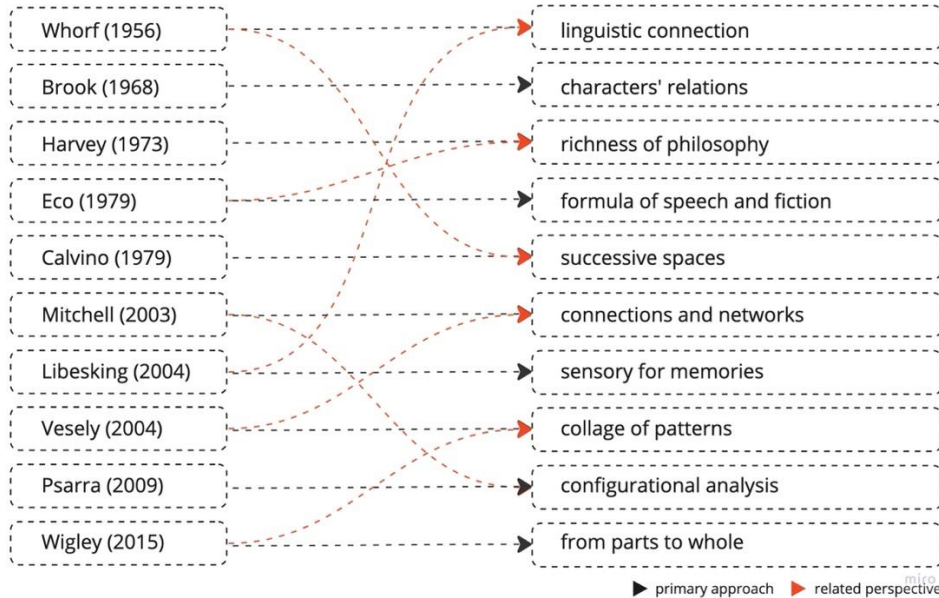


Figure 2. Related approaches for the evaluation of narratives' architecture.

3. Adapting Fragments of Fictional Narrative to Architectural Design

A screenplay is basically a story about people and their activities. Van der Linden et. al (2019, p.21) cites van der Bijl-Brouwer and Van der Voort's 2013 highlights, reminding that a script-based story, whether comprehensive or concise, contains some key narratives and elements. If we need to examine them in order, the components can be listed as follows. "The starting state" consists of an actor with certain characteristics. There are features (including people, objects, and tools) that find themselves in a particular environment and a specific purpose for a design product. It can be said that this purpose refers to a building or an area as an architectural element. "The plot", on the other hand, occurs when the player takes an action or takes action. Represents the design product triggered by external events. The interaction between "the starting state" and "the plot" is known to produce a positive or negative experience. This experience can provide an input for design by identifying usage issues. At this point, Rabiger (2017,

p.120) discusses the components that make up the impressiveness of a story based on questioning a story. These components are characters, potential, genre, meaning, purpose, and development, respectively (Table 1).

Table 1. Architectural model adapted from Rabiger's approach.

	Rabiger's Approach	Architectural Model
Characters	<ul style="list-style-type: none"> • What are the characteristics of the main characters? • What are the expectations from the main characters? • Who is the character in the center of the point of view? • What are the challenges facing the main character? • Is the story complete? 	<ul style="list-style-type: none"> • What are the features of the target visitor profile? • What are the predictions about the way visitors use the space? • Which visitor profile helps to identify the leading characteristic of the place? • What are the main challenges visitors may face in this venue? • Does the visitor's experience of the space progress uninterruptedly from the beginning to the end, and can it end as it should?
Potential	<ul style="list-style-type: none"> • Are there any unnecessary scenes? • Are there any missing or improvable props? 	<ul style="list-style-type: none"> • Is there a space that is not effectively functional? • Is there a space that is missing or open to development?
Genre	<ul style="list-style-type: none"> • What genre does the story belong to? • Is there a situation that requires crossing between genres? 	<ul style="list-style-type: none"> • What is the main function of the building? • In building design, is a solution required to accommodate intersections of multiple functions?
Meaning and Aim	<ul style="list-style-type: none"> • What is the effect the story aims to have on the audience? • What patterns help determine the meaning of the story? 	<ul style="list-style-type: none"> • What is the effect that the place aims to leave on the visitor? • What function schemes help define and emphasize the meaning of the space?
Development	<ul style="list-style-type: none"> • Who is progressing in the story? • What other character could be created a development space? • What do the changes that take place by the end of the story represent? 	<ul style="list-style-type: none"> • For which visitor profile is the experience in this place better? • What other visitor profile information can be included in context building in space design? • What are the potential effects of spatial changes on the visitor throughout the user experience ?
Story as a Whole	<ul style="list-style-type: none"> • What is its proposition? • What is the theme? • What does it tell about the main character? 	<ul style="list-style-type: none"> • What is the prominent emphasis of the design? • What is the theme of the design? • Does the design have a specific narrative regarding visitors?

Experiencing a place full of icons is similar to following a scenario step-by-step. Truby (2008, p.40) examines the development processes of a script with the steps of the story, the time of the story, the proposition, the basic steps of the story structure, the character, the moral argument, the place where the story takes place, the symbol texture, the plot, the stage making, the symphonic dialogue and the endless story. Although the symbol texture represents a title that directly contributes to the formation of the symbolic space, the seven basic steps of the story structure contain essences that are similar to the creation of the architectural design process as tools to help the comprehension of a scenario. These are the themes associated with the essences, when considered in parallel with the production of space, they can be named as follows: Weakness / requirement, desire, rival, plan, fight, self-discovery and gaining new balance (Table 2).

Table 2. Architectural model adapted from Truby's approach.

	Truby's Approach	Architectural Model
Weakness/ Requirement	A process that is driven by the feeling of loneliness and aims to improve, overcome weaknesses, change and grow.	The pattern of space and experience that can contribute to the development of the visitor.

Desire	It is the first remarkable element of the story, its driving force and the essence that binds all the structural elements to itself.	The main motivation that the visitor carries throughout his experience between spaces.
Rival	The name of the figure who prevents the hero from achieving his desire and competes with the hero for the same goal.	Elements that reduce the visitor's level of appreciation for the place and prevent them from meeting their expectations about their visit.
Plan	The set of strategies required for the hero to succeed by overcoming his opponent.	A set of approaches that will help the visitor feel special in the space.
Fight	Conflict created by the opponent by putting pressure on the hero to achieve the goal.	Decision changes created by the elements that prevent the visitor from feeling special in the visitor's experience process.
Self Discovery	The hero gets to know himself through his intensified experience, comprehends the situation in which he lives.	The visitor has experiences that will gain awareness in the space.
Gaining New Balance	The result of permanent change after all tense situations, fights.	Hybrid result when the visitor is expected to evaluate their spatial experience holistically.

At this point, Frey (1994, p.101-103) reminds that the concepts of climax, proposition and resolution should not be confused with each other. It indicates that the climax is the point at which the reader understands that the core conflict has been settled. However, he emphasizes that it is impossible to determine the boundaries of peak and resolution in most cases. Just as the end of a story is expressed as a climax or resolution, a space can be organized to create a similar illusion in the final sequences. In the conflict that resolves, on the other hand, it is the final conflict that clarifies the core issues, following the core conflict at the apex. This conflict represents a moment of dissolution in the field of architecture that allows the visitor to weigh their ideas about the space before leaving it.

McKay (2011, p.11) reminds us that attempting to disassemble a novel will leave out its historical, social, cultural and emotional meaning. And citing Samuel Johnson as an example, he refers to the decisive role of his decision to describe philosophy through literature in the course of the novel's character. Similarly, referring to Lawrence, he states that the novel has an internally dissolving texture and offers an insight into reality. At this point, McKay touches on the emphasis that deals with the dichotomies between escaping and coping with real life. In this context, dealing with the power and impact of shocks is expressed as a hasty attitude. On the other hand, understanding the differences of multilingualism, dialogue and monologue and using them in the right places will help the novel find its character. Similarly, because the novel is an intertwined version of the representations of the outside world and the real world, it also offers a reminder that it has the power to change the real world. Bürger (2016, p.14) mentions that today's art can be considered as a reflection of a series of rituals in primitive societies and proposes to examine the artists who call us to believe in art. Snyder (2005, p.46), on the other hand, categorizes film genres in ten ways: Monster in the House, Golden Fleece, Out of the Bottle, Dude with a Problem, Rites of Passage, Love, Whydunit, The Fool Triumphant, Institutionalized, and Superhero.

Table 3. Architectural model adapted from Snyder's approach.

	Snyder's Approach	Architectural Model
Monster in the House	Perceiving the home theme as the world and/or dealing with supernatural powers in this context.	Emphasis on the uniqueness of experience in space and concentrated experience per unit time / unit space.
Golden Fleece	Representation of processes that make the impossible real. The character finds himself instead of the item he is looking for.	The visitor encounters a surprise beyond his expectations regarding his experience and makes new determinations about himself.

Out of the Bottle	Representation of wishes fulfilled. Karma theme.	Spatial experience overlapping with expectations and potentials for new spatial outcomes of visitor's satisfaction.
Dude with a Problem	Ordinary people find themselves in extraordinary situations.	spatial experience while waiting for an experience of intensity and depth similar to his daily routine.
Rites of Passage	Dramatic interpretations of misfortunes in painful processes.	Negative effects of physical and psychological barriers encountered in the space on the visitor.
Love	Possibility to transfer monologues to a close person.	Having the opportunity to share the inner voices of the spatial pattern experienced by the visitors with another visitor within the same pattern.
Whydunit	Tracing the causality behind the chaos.	spatial confusion, overlap, disproportion, and uncertainties.
The Fool Triumphant	Representation of wisdom in madness.	spatial moves, which are controversial in terms of architectural value, are made to deepen and enrich the experience.
Institutionalized	Discussions on waiving minority rights and relying on majority profits.	Developing the processes of producing solutions for the minority and the majority while developing the spatial pattern.
Superhero	Entrusting human qualities to a superhuman being and/or an extraordinary process.	Spatial experience are mystified, patterns of experience that detach from everyday context and enrich multiple understanding by inspiring unreal situations.

Among the techniques used by Bernstein (1996, p.67-72), the most prominent ones can be listed as follows: "Lexical translation", "Acrostic chance", "Tzara's hat", "Burroughs' fold-in", "General cut-ups", "Cento", "Substitution", "Alphabet poems", "Alliteration", "Doubling", "Collaboration", "Group sonnet", "Dream work", "nonliterary forms", "Imitation", "Backwards", "Attention", "Counting", "List poem", "Chronology", "Transcription", "Canceling", "Erasure", "Synchronicity", "Diachronicity", "Visual poetry", "Elimination", "Excuses list" and "Sprung diary".

"Lexical translation" is based on the examination of the eclectic whole obtained by translating a foreign poem word for word. "Acrostic chance" is based on the system of forming semi-meaningful wholes with the help of randomly chosen letters from a randomly chosen book to form an acrostic. In the "Tzara's hat" game, everyone in the group writes a word and throws it in the hat. Then, the poem to be formed is formed by reading the words written on the cards to be drawn from the hat in order. "Burroughs' fold-in" is based on ripping two separate pieces from a newspaper or magazine article and then matching them. "General cut-ups" are completed by using (combining) phrases in literary texts written in different techniques and styles. "Cento" is created by combining the poems whose parts are taken into larger pieces without changing their original order.

"Substitution (1)" is a technique applied by leaving a space between three or four words in each line and filling these gaps in a way that does not remind the original of the poem. "Substitution (2)" is based on searching and finding syntactically interchangeable words. In this way, word pairs that show the highest syntactic harmony are determined every seven lines. In the "Alphabet poems" technique, each word begins with the next letter of the alphabet. The technique is completed when the sequential letters are the initials of the words that make up the poem. In the "alliteration" technique, all words in a line begin with the same letter. "Doubling" is about doubling the number of sentences in each paragraph in the previous paragraph. "Collaboration" is to convey the process of writing a poem in more than one person. In the "group sonnet" technique, each of the 14 people writes a line of 10 words or an "index" card. "Dream work" is the writing down of dreams as soon as you wake up for thirty days. "Nonliterary forms" is the writing of texts that are not considered in the category of literature and poetry, as if they had such a technique and context. Examples of these might be the ingredient list, recipe book, invoices.

“Imitation” is based on creating new productions by imitating the style of a dozen loved and hated poets. “Backwards” is changing the order of the words. “Attention” is created by writing down everything heard for an hour. “Counting” is about writing poems in which complex numerical series or simpler number patterns are applied.

Brown (2001, p.8) mentions that the idea of creating a scenario is basically related to creating a trajectory. At this point, it appears that all states associated with a trajectory can be included in this scenario. It is clear that all processes that copy an object and pretend that the copy is the reality itself are illusory processes, and these processes impair the screenplay’s process of finding its own identity. On the other hand, if some of such manipulations succeed in creating a debate about the perception of reality, they can also present a strong argument for the truth itself, and with the help of this “fraud” the truth itself can be made clearer. So, with the help of parallel realities, new discussions in the fields of art and logic can be obtained, which can enrich and strengthen the narrative.

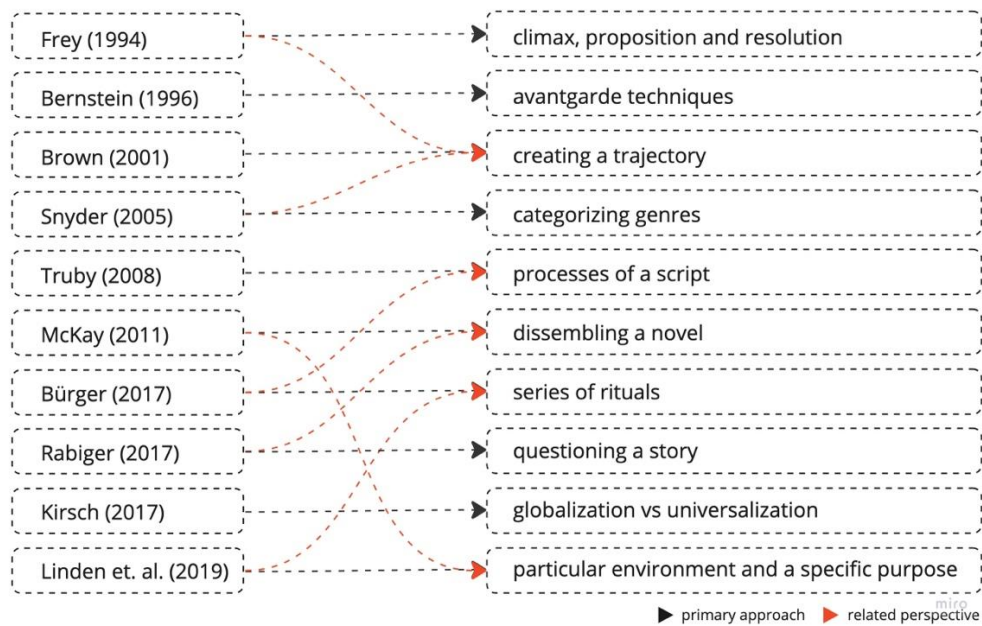


Figure 3. Related approaches for adapting fragments of fictional narrative to architectural design process.

4. Scenario as an Efficiency Oriented Tool

Carroll (1999, p.4) states that the design action is a process that competes with the reflection effect, that the scenarios evoke reflection in the design, that the design situations are fluid, that the scenarios are both concrete and flexible, that the design moves have many consequences, that there are many aspects of any scenario, that technical knowledge is technical. He also emphasizes that the design lags behind, that scenarios can be abstracted and categorized, external factors will constrain the design and scenarios will encourage the operability of the process. Carroll points to the need for a process where live descriptions of end-user experiences lead to thinking about design issues in order to track the action versus reflection effect. Regarding the fluidity of the design problem, he emphasizes that the scenarios concretely determine an interpretation and solution, but on the other hand, they are open-ended and easily renewed. The fact that scenarios can be written at different levels and for different purposes coincides with the characteristically distinctly divergent steps of the design moves. While reminding that scientific knowledge will delay the design implementation process, it is also informed that scenarios can be abstracted when and as necessary.

This mediates the categorization of potential scenarios. Similarly, it can be said that external factors restrict the design. From this point of view, scenarios distribute appropriate and consistent roles to all of the stakeholders that make up the design, and ensure the successful operation of the design process as a multi-actor process.

Haynes et al. (2009, p. 331), while explaining the “Scenario Walkthrough and Inspection” models known as SWIM, proposes a process based on which interactions between visitors and a collaborative system can be used to collect and analyze visitor requests within certain scenarios. In this process, organizational hierarchies and functional units are followed and a method is structured with the help of a scenario. At this point, processes that can analyze levels and units of analysis in a way that can be used for future research become important in order to capture sensitive, visitor-centered data in terms of creating a context. Properly escalating and running the scenario provides multiple solutions for collaborative systems to be evaluated in a common repository.

Simeone et. al (2014, p.7) mentions that “The Business Process Model and Notation (BPMN)” technique is a modeling approach used for business processes that allows the representation of an organization's operational processes to regulate the activities and decisions of different actors. As an output of this technique, it is mentioned that the most effective solution to the possible needs of a hospital planning can be produced with a strong scenario mesh by using the following components respectively: “Activities” is the representation of the tasks, studies or processes that need to be fulfilled or carried out during the process; “Connectors” are listed as links connecting one activity to another activity to define an activity and observe the operational order. “Flows” includes activities, including other classes of connectors that allow other types of entities to be associated. “Events” are defined as the parts that “happen” during the process that initiate, delay, interrupt or end a flow of activity. “Gateways”, on the other hand, are expressed as modeling elements that control the paths, deflections and convergences of the process and allow parallel or special paths. Eilouti (2018, p.530-531) mentions that the scenario is a set of data that can be handled gradually and adapted to the design process, and a flowchart that collects this data. In addition to that, all perspectives have similarities and lateral connections (Figure 4).

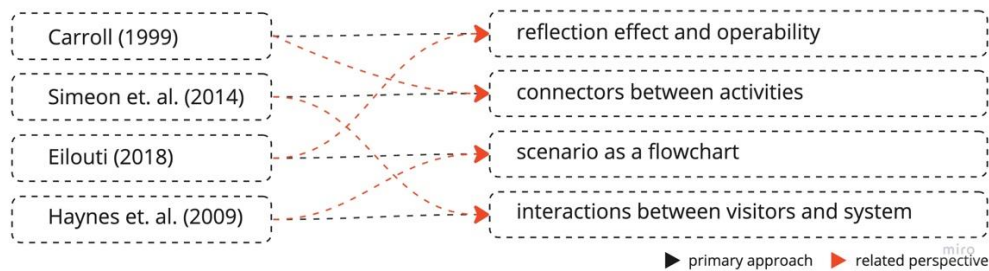


Figure 4. Related approaches for adapting efficiency oriented scenario to architectural design process.

Scenarios are important to gain insight when formulating a long-term strategy. In this context, it can also respond to the multi-layered programming needs of architecture. It is known that by grouping and modeling and evaluating historical trends and developments, it is possible to decide together with the rest of the organization what fundamental uncertainties exist. Since current uncertainties are shaped by the connections between trends (past) and scenarios (future), each scenario also means a new analysis attempt (Ruijter, 2016, p.124). Scenarios are essential components that foster the effective exchange of ideas within a management team, future construction, inquiry, synthesis of complementary ideas, co-evaluation of opposing and contradictory viewpoints,

integration of different viewpoints, and organization of decision makers (Wright and Cairns, 2011, p.24-25).

Compatibility with practical workflow diagrams in architecture becomes important here. The scenario technique, which has been revived in the business field as a relatively simple and inexpensive strategic planning tool, as it is in simulation concepts and war games like Kriegsspielen, which is developed based on the gradual diversification of forecasting approaches based on a different idea, provides very practical work flow charts in order to create plans that follow a linear route. (Martelli, 2014, p.8-9). The work team's creation of a useful set of scenarios about what might happen in and around their systems diversifies the way actors in the system think and act (Kahane, 2012, p.22-23). Scenario planning is a widely used approach to develop long-term strategies. The typical scenario process involves developing scenarios, identifying strategies whose success depends on the scenario, and regularly monitoring the environment to know which scenario(s) may become more likely. Therefore, it becomes necessary to find a way to monitor the business environment to inform the process of making strategic decisions under uncertainty. Individual indicators are selected based on intuitive theoretical frameworks. Different weights are assigned to individual indicators using factor analysis, and then composite indicators are created by linearly summing the individual indicators. These levels are then used to understand which scenario is most likely to happen (Zheng, 2014, p.64).

The grading of architectural design education and the integration of e-learning solutions into architectural processes should also be evaluated under this heading. The scenario-based e-learning design model consists of deliverable task, trigger event, case data, guidance, instruction, and feedback and reflection. Some components such as deliverable task, trigger event, and feedback may vary according to users' learning areas and context (Clark and Mayer, 2012, p.48). Further research on forward thinking as descriptive and prescriptive should proceed without denying speculative ideas about the future of scenario planning (Schoemaker, 2022, 152-153). When all these are examined together, it is seen that the purpose of scenario planning is to avoid crises associated with fundamental changes in the organizational environment, to take advantage of opportunities that may not be obvious, and to prepare for an uncertain future. Therefore, scenario planning is a system designed to increase the general awareness of decision makers. The processes in the scenario system are designed so that decision-making sectors can be contacted. The purpose of scenarios is to contribute to the ability of individuals and teams to perform better in the volatile, ambiguous environment of the organization. Building a strong scenario is indispensable for detailed analysis of strategic problems or dilemmas (Chermack, 2011, p.32). Remedial teaching based on technopedagogical instruction facilitates, through the use of Scenario-Based Learning (SBL), to provide the necessary conditions for learning and serve to design instruction. SBL was found to be effective in reading, writing, listening, speaking and math skills (Tupe, 2013, p.147).

In architectural and urban scenario planning, solar energy, biomass energy, hydroelectric energy, wind energy, marine energy are considered. The roles of non-governmental organizations towards renewable energy technologies and government policy regarding renewable energy technologies play a critical role in meeting the ever-growing energy crises. When the future expectations regarding the sustainability of renewable energy technologies and the obstacles behind the development of alternative renewable energy technologies are evaluated together, it becomes clear how important it is to associate scenario planning techniques with a holistic planning strategy (Mamun et al., 2012, p.44). In order to deal with the Hyper Globalizing World, the Efficient World

and the Green World together, the decision makers in the chemical sectors should stick to the common scenario plans. This is essential not only for sustainability, but also for the integrity of systems in unit time (Arora and Putcha, 2014, p.52-71).

Evaluating potential damages by using Digital Elevation Model and Geographic Information System network and stage-damage functions for different main land uses in the most vulnerable regions to climate change is one of the most successful examples of a good scenario plan. As a case in point, a system that will provide a better understanding of future flood risk and facilitate decision makers to review existing and proposed land uses to take mitigation and prevention measures, points out to sectors that there may be a scenario planning that will prevent vital risks that may occur at the urban and architectural scale (Esraz- Ul-Zannat, 2014, p.71-72).

Energy is the main driver of economic growth and is vital to sustaining a modern economy and is a component that must be addressed in conjunction with a scenario plan. Future economic growth largely depends on the long-term availability of energy from affordable, accessible and environmentally friendly sources, which is directly related to the scenario. Understanding the pattern allows us to introspect alternative energy sources for that fuel. Knowing the effects of such fuels on society and the environment will help determine new policies for sustainable energy use (Gupta and Singh, 2012, p.17). In addition to promoting a significant reduction of emissions, the need to create a sustainable and low-carbon society also highlights the importance of scenario creation. The most effective tool for developing a low-carbon society that encompasses the energy, agriculture, forestry and land use sectors is scenario planning (Hoa, 2015, p.34). Research into the electromagnetic waves of transmission towers, which have adverse effects on humans and other fauna, highlights that the exact correlation between the radiation of communication towers and wildlife cannot be fully expressed unless a sustainable scenario is planned (Pattazhy, 2018, p.43).

5. Discussions

In order to create a holistic scheme, it is seen that the combination of the components that make up an effective scripting process should be examined. This coexistence is based on the identification of ties and relationships between work areas of different weight and variety and their refunctioning to create new interconnections. In this direction, firstly, their architectural counterparts were found so that the characters, potential, type, meaning, purpose and development steps were evaluated as components to be used in the preliminary stages of architectural design. These responses include the contextual design steps to be developed by defining the processes related to the relevant components: The characteristics of the target visitor profile, the predictions about the way visitors use the space, the way the visitor profile helps to determine the leading characteristic of the space, the main difficulties that the visitors may encounter in the space, the process of the visitor's experience of the space from the beginning to the end. The possibility of uninterrupted progress, inferences about the spaces that are not effectively functional and determinations about the missing or open spaces, emphasizing what the basic function of the building is, discussing the necessity of a solution that will accommodate the intersections of more than one function in the building design, evaluating the effect that the space aims to leave on the visitor, the meaning of the space. The function diagrams that help to highlight the list of predictions that inform about the occupant profile can be incorporated into context construction in space design, evaluating the potential effects of spatial changes on the visitor, and studying the design's prominent emphasis, as well as constructing a specific narrative regarding the design's theme and visitors of the design (Figure 5).

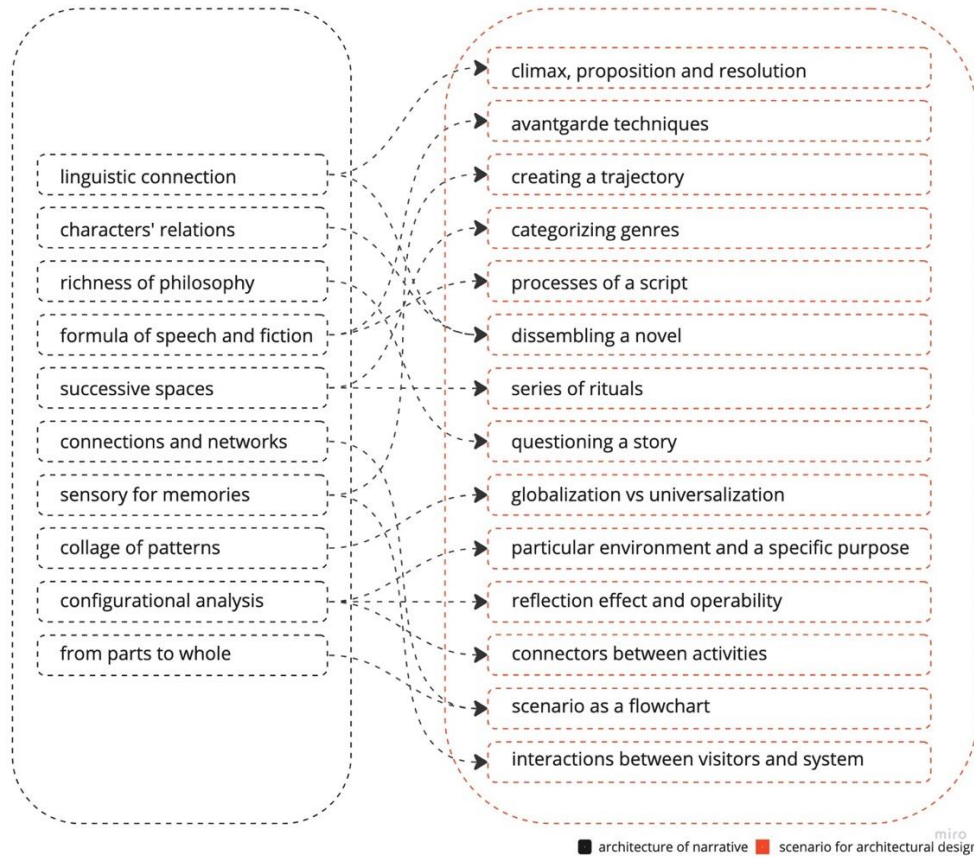


Figure 5. Combining approaches for adapting scenario to architectural design process.

In order to evaluate the spatial list formed by evaluating the characters, potential, genre, meaning, purpose and development components, by passing through a filter that deals with the visitor's experience in terms of sensory intensities, the Weakness/Need, Desire, Competitor, Plan, Fight, Self-Discovery and The New Equilibrium components need to have their spatial counterparts. Therefore, the data obtained from the first step are evaluated together with the following evaluation steps, respectively, and advanced to the last two steps. The pattern of space and experience that can contribute to the development of the visitor, the basic motivation of the visitor throughout his experience between the places, the elements that reduce the visitor's level of appreciation for the place and prevent him from meeting his expectations about the visit, the set of approaches that will help the visitor feel special in the place, the elements that prevent the visitor from feeling special in the experience. The hybrid result that emerges when the decision changes created during the process, the visitor's experiences that will gain awareness in the space, and the visitor's expectation to evaluate the spatial experience holistically.

The data obtained from the second step are evaluated in the next step so that the general theme can be strengthened and the thematic framework can be conveyed in a more expressive way. At this point, the themes Monster in the House, Golden Fleece, Out of the Bottle, Dude with a Problem, Rites of Passage, Love, Whydunit, The Fool Triumphant, Institutionalized and Superhero are used. The contributions of these themes to the space are listed as follows: The visitor encounters a surprise beyond his expectations regarding his experience and makes new determinations about himself, the spatial experience overlaps with the expectations, and the potentials for new spatial

outputs of visitor satisfaction, while waiting for an experience with a density and depth similar to the daily routine of the visitor, he is waiting for a unique spatial experience, the negative effects of physical and psychological barriers encountered in the space on the visitor, the opportunity to share the inner voices of the visitors about the spatial pattern they experience with another visitor within the same pattern, conveying a causality potential peculiar to spatial confusion, overlap, disproportion and uncertainties to the visitors. Emphasis on the spatial moves that are controversial in terms of architectural value, to deepen and enrich the experience, develop the pattern of space. On the other hand, the joint development of the processes of finding solutions for the minority and the majority and the parts where spatial experience is mystified, the patterns of experience that enrich the multi-understanding by inspiring unreal situations by breaking away from the everyday context. The fourth step is developed by discussing potentials by adapting writing exercises to spatial components that can mediate the development of a scenario. Among these steps, which can be adapted to architectural design steps, respectively, it is listed as "Lexical translation", "Acrostic chance", "Tzara's hat", "Burroughs's fold-in", "General cut-ups", "Centio", "Substitution (1)", "Substitution (2)", "Alphabet poems", "Alliteration", "Doubling", "Collaboration", "Group sonnet", "Dream work", "nonliterary forms", "Imitation", "Backwards", "Attention", "Counting", "List poem", "Chronology", "Transcription", "Canceling", "Erasure", "Synchronicity", "Diachronicity", "Visual poetry", "Elimination", "Excuses list" and "Sprung diary".

The related list includes lateral aspects such as criticizing different parts, creating new typesetting, reassociating clusters with multiple grouping techniques, reversing conceptual flowcharts, deconstructing and redesigning, creating a collage from visitor logs, enriching the spatial characteristics through conceptual rules. Provides developer features. In the last step, unlike the first step of architectural design, current examples of developing the pragmatic outputs of the function are examined. These examples are used in the steps of creating a work program, measuring compliance rates, measuring and developing efficiency, determining the maximum tolerance values required for the general operation of the system, developing a strategy for the near future, and designing programs for the operation of equity.

6. Conclusion

When all the steps are evaluated together, it has been seen that the leading components of scenario and narrative theory mediate to present a holistic design framework for the visitor's spatial experience in the building, and that the model obtained can deepen the experience process in a spatial context. By examining the relationships between all topics, the following outputs are obtained regarding the near-future potentials of the relationship between scenario planning and architectural production processes.

- Integrating the scenario step into architectural design processes has two basic steps, focused on narrative and planning.
- Rather than planning the narrative step before the planning step, the narrative and planning steps need to be planned intricately.
- In order to adapt scenario planning processes to architectural design education, the scenario-based e-learning design model should be capable of producing specific responses to deliverable task, trigger event, case data, guidance, instruction and feedback and reflection processes. Remedial teaching based on techno-pedagogical

instruction facilitates, through the use of Scenario-Based Learning (SBL), to provide the necessary conditions for learning and serve to design instruction.

- Scenario planning techniques should be developed covering the energy, agriculture, forestry and land use sectors to create a sustainable and low-carbon society that promotes substantial reductions in emissions.

- Contemporary scenario planning techniques can be used to assess potential damages for different main land uses with Digital Elevation Model and Geographic Information System network in regions vulnerable to climate change.

- Before a successful architectural design process can be carried out, it is necessary to group and model historical trends and developments, and identify current uncertainties and key trends. This will work as a verification process for both users and employers that the product is operational.

- In architectural and urban scenario planning, autonomous strategy teams for solar energy, biomass energy, hydroelectric energy, wind energy, marine energy should be established. and should be distributed to large contracting companies.

- Systems such as “SWIM” designed to respond directly to visitor needs, shorten the route and organization chart development processes and facilitate the preliminary project step, which is one of the first and most important steps of architectural design processes.

- “Activities”, “Connectors”, “Flows”, “Events” and “Gateways” form parts of a totality that can be adapted to all scenario processes, especially architectural design. While defining the character of the spaces through the activities, the bonds between these actions are provided by the unifiers. While Flows defines the condensation areas of the combiners, events and gateways work as controlled passage systems that feed each other and check whether the scenario is working correctly.

- With the help of a successful scenario planning process, the architectural design process is shortened, organized more technically, and the tolerance value in the system is brought closer to the minimum.

References

Arora, V., Putcha, S. (2014). Scenarios for Sustainable Supply Chains: A Case for Chemical Industry (1st ed.). LAP LAMBERT Academic Publishing. https://www.perlego.com/book/3351307/scenarios-for-sustainable-supply-chains-a-case-for-chemical-industry-using-scenario-planning-as-a-tool-for-long-range-decisions-pdf_52-71.

Bernstein, C. (1996). Experiments. *Boundary* 2, 23(3), 67-72. <https://doi.org/10.2307/303638>

Brook, P. (1968). “The Empty Space.” New York: Atheneum, 111-112.

Brown, A.G.P. (2001). Architectural critique through digital scenario-building. In: de Vries, B., van Leeuwen, J., Achten, H. (eds) *Computer Aided Architectural Design Futures 2001*. Springer, Dordrecht. https://doi.org/10.1007/978-94-010-0868-6_52, 8-14.

Buday, R. (2017). *The Art of Architectural Storytelling, or How to Present a Building*. Common Edge., 1-9.

Bürger, P., Shaw, M., Schulte-Sasse, J. (2016). *Theory of the avant-garde*. University of Minnesota Press., 14-27.

Calvino, I. (1979). "Invisible Cities." Translated by William Weaver. London: Pan, 15-17.

Carroll J. M. (1999). Five reasons for scenario-based design. Proceedings of the 32nd Hawaii International Conference on System Sciences – 1999, Maui, HI, USA. DOI: <https://doi.org/10.1109/HICSS.1999.772890>.,4-11.

Haynes, S., Puroo, S., Skattebo, A. (2009). Scenario-Based Methods for Evaluating Collaborative Systems. *Computer Supported Cooperative Work*. 18. 331-356. 10.1007/s10606-009-9095-x.

Carroll, J.M., (1995). *Scenario-Based Design: Envisioning Work and Technology in System Development*. John Wiley & Sons, New York., 7-10.

Chermack, T. (2011). *Scenario Planning in Organizations*. Berrett-Koehler Publishers. <https://www.perlego.com/book/1249055/scenario-planning-in-organizations-how-to-create-use-and-assess-scenarios-pdf>, 1-288.

Clark, R., Mayer, R. (2012). *Scenario-based e-Learning (1st ed.)*. Wiley. <https://www.perlego.com/book/1000128/scenariobased-elearning-evidencebased-guidelines-for-online-workforce-learning-pdf>, 36-65.

Eilouti, B. (2018). Scenario-Based Design: New Applications in Metamorphic Architecture. 7. 530-543. 10.1016/j.foar.2018.07.003., 530-543.

Esraz-UI-Zannat, Md. (2014). *A GIS based Approach (1st ed.)*. LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3378196/a-gis-based-approach-vulnerability-assessment-damage-quantification-in-the-light-of-climate-change-induced-flood-scenario-pdf>, 1-140.

Frey, J. N. (1994). *How to write a damn good novel*. St. Martin's Press, 101-103.

Gupta, H., Singh, L. (2012). *Rural Energy Scenario In India (1st ed.)*. LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3354892/rural-energy-scenario-in-india-energy-use-pattern-of-different-fuels-in-india-and-their-impacts-on-sustainable-development-for-the-country-pdf>, 1-60.

Harvey, D. (1973). *Social Processes and Spatial Form: (1) The Conceptual Problems of Urban Planning*. In *Social Justice and the City (REV-Revised)*, pp. 22–49). University of Georgia Press. <http://www.jstor.org/stable/j.ctt46nm9v.4>

Harvey, D. (1973). *Urbanism and the City—An Interpretive Essay*. In *Social Justice and the City (REV-Revised)*, University of Georgia Press. <http://www.jstor.org/stable/j.ctt46nm9v.9> 195–284.

Hoa, N. T. (2015). *How to develop a low carbon scenario for a country?A study in Vietnam (1st ed.)*. LAP LAMBERT Academic Publishing.

<https://www.perlego.com/book/3429838/how-to-develop-a-low-carbon-scenario-for-a-country-a-study-in-vietnam-pdf>, 1–172.

Kahane, A. (2012). *Transformative Scenario Planning* (1st ed.). Berrett-Koehler Publishers. <https://www.perlego.com/book/1248450/transformative-scenario-planning-working-together-to-change-the-future-pdf>, 1-31.

Libeskind, D. (2004). *Breaking Ground: Adventures in Life and Architecture*. John Murray, London, 221-222.

Lyu, F. (2019). Architecture as spatial storytelling: Mediating human knowledge of the world, humans and architecture. *Frontiers of Architectural Research*. 8. 10.1016/j.foar.2019.05.002. 275-283.

McKay, M. (2011). *The Cambridge Introduction to the Novel*. Cambridge University Press. 11-35.

Mamun, Md. M.A., Islam, Md. N., Mondol, Md. S. (2012). *The Renewable Energy Scenario in Bangladesh Perspectives* (1st ed.). LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3357159/the-renewable-energy-scenario-in-bangladesh-perspectives-barriers-for-sustainability-of-the-alternative-energy-technologies-pdf>, 1–88.

Martelli, A. (2014). *Models of Scenario Building and Planning*. <https://doi.org/10.1057/9781137293503>, Mitchell, W. (2003). *Me++: The Cyborg Self and the Networked City*. Cambridge, Mass.: MIT Press, 8-11.

Pattazhy, S. (2018). *Future Scenario of Communication towers and Impacts on Wildlife* (1st ed.). LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3432041/future-scenario-of-communication-towers-and-impacts-on-wildlife-pdf>, 1-96.

Psarra, S. (2009). *Architecture and Narrative: The Formation of Space and Cultural Meaning* (1st ed.). Routledge. <https://doi.org/10.4324/9780203639672>, 241.

Rabiger, M. (2017). *Developing story ideas: The power and purpose of storytelling*. Routledge, 120-122.

Ruijter, P.D. (2014). *Scenario Based Strategy: Navigate the Future* (1st ed.). Routledge. <https://doi.org/10.4324/9781315607689>, 1-200.

Schoemaker, P. (2022). *Advanced Introduction to Scenario Planning*. Edward Elgar Publishing. <https://www.perlego.com/book/3546452/advanced-introduction-to-scenario-planning-pdf>, 152-190.

Simeone, D., Toldo, I., Cursi, S. (2014). Operational Scenarios Simulation to Support Building Design: A Hospital Design Case Study. In: Hodicky, J. (eds) *Modelling and Simulation for Autonomous Systems. MESAS 2014. Lecture Notes in Computer Science*, vol 8906. Springer, Cham. https://doi.org/10.1007/978-3-319-13823-7_12, 1-14.

Snyder, B. (2005). *Save the cat!: The last book on screenwriting you'll ever need*. Michael Wiese Productions, 46-47.

Truby, J. (2008). The anatomy of story: 22 steps to becoming a master storyteller. Faber & Faber, 40-41.

Tupe, N. (2013). Scenario Based Learning (1st ed.). LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3341182/scenario-based-learning-a-better-methodology-of-teaching-english-and-mathematics-pdf> ,1-156.

Van der Linden, V., Dong, H., Heylighen, A. (2019). Populating architectural design: Introducing scenario-based design in residential care projects. International Journal of Design. 13, 21-36.

Vesely, D. (2004). Architecture in the Age of Divided Representation: The Question of Creativity in the Shadow of Production. The MIT Press, Cambridge and London., 24-36.

Whorf, B. L. (1956). "Language, Thought, and Reality." Edited by John B. Carroll. Cambridge, Massachusetts: The M.I.T. Press, 1-278.

Wigley, M., Graham, J., Allais, L. (2015). 2000+ The urgencies of architectural theory: A symposium. GSAPP Books, 210-235.

Wright, G., Cairns, G. (2011). Scenario Thinking. Palgrave Macmillan UK. <https://www.perlego.com/book/3498311/scenario-thinking-practical-approaches-to-the-future-pdf> , 1-30.

Zheng. (2014). Scenario Monitoring (1st ed.). LAP LAMBERT Academic Publishing. <https://www.perlego.com/book/3374926/scenario-monitoring-how-should-indicators-be-found-for-scenario-monitoring-pdf> ,1-100.