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# **PURSUIT OF PATTERN LANGUAGES FOR SOCIETAL CHANGE**

**A comprehensive  
perspective of  
current pattern  
research and  
practice**

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# **Illuminating Egoless Creation with Theories of Autopoietic Systems**

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This paper examines one of the most important but overlooked concepts in pattern language theory; creation processes without the self (ego). Christopher Alexander, the inventor of the pattern language concept and methodology, focused on a generative mechanism beyond the individual designer level and claimed that creation originated from this basis. In this paper, first, the similarities between Alexander's arguments and those of fiction writers who claim that, 'the author does not intentionally create the story; the characters in the story act on their own, and the story unfolds itself' are examined under an 'egoless creation' concept. Then, egoless creation is examined through the theories of autopoietic systems: Social Systems Theory and Creative Systems Theory. It was found that egoless creation is a state in which the chain of generated discoveries within a creative system is experienced by the psychic system, that the patterns in a pattern language work primarily as 'discovery media' within the creative system, and that pattern language facilitates a structural coupling of the psychic and the social sys-

tems. Through these analyses, this paper illuminates the egoless creation concept from a systems theory perspective.

Autopoiesis; Creation; Creative Systems Theory; Egoless; Pattern Language; Social Systems Theory

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## 1. Introduction

Christopher Alexander argued that in any city and building design process, the designers' intentional control must be omitted, stating that 'when a place is lifeless or unreal, there is almost always a mastermind behind it. It is so filled with the will of its maker that there is no room for its own nature'. (Alexander, 1979, p.36) He claimed that creative processes must be egoless and generative, and proposed the pattern language method to enable this egoless process. The need for designers to go beyond their own ideas and develop generative designs was an important theme throughout Alexander's work, such as *Notes on the Synthesis of Form* (Alexander, 1964), *The Timeless Way of Building* (Alexander, 1979), and *The Nature of Order* (Alexander, 2002a, 2002b).

Despite the significance of this concept to the pattern language method, there are few who fully understand the concept, primarily because of the general understanding that design (creative act) is essentially the result of someone 'taking action'. The perpetuation of this 'general' belief tends to imply that the notion of the 'egoless creation' proposed by Alexander is only idealistic and cannot be applied in reality.

This paper develops a theoretical framework to enhance the understanding of egoless creations by elucidating the creative process elements. To do this, first, the definition for Alexander's egoless creation concept is reviewed, after which similar observations from fiction authors about the larger creation context are examined. Then, the autopoietic systems theories; social systems theory and creative systems theory; are introduced to analyze the egoless creation concept.

## 2. Egoless Creation and Pattern Language

Christopher Alexander, in *The Timeless Way of Building*, introduced the 'quality without a name', a quality that 'flows out from the process of creation of its own accord', and which cannot be made in the presence of the designers' individual intentions.

” *‘the quality without a name cannot be made, but only generated by a process. It can flow from your actions; it can flow with the greatest ease; but it cannot be made. It cannot be contrived, thought out, designed. It happens when it flows out from the process of creation of its own accord’.* (Alexander, 1979, p.159)

*‘When a thing is made, it has the will of the maker in it. But when it is generated, it is generated, freely, by the operation of egoless rules, acting on the reality of the situation, and giving birth, of their own accord. ...’* (Alexander, 1979, p.160)

Alexander claimed that cities of great quality were not created by a single designer (or a single team) but resulted from many cycles of 'diagnosis and repair' (Alexander, Silverstein, et al., 1975). Modern cities and buildings, however, lacked this quality as they were developed solely based on the original designer's intent and control. In other words, a city, a building or a community should be shaped gradually by the people living in it and decisions should not solely be in the hands of outsiders who do not know the intricate details of the residents' lives (Alexander, Davis, et al., 1985). Therefore, Alexander believed that design must be generated from within.

” *‘To make a building egoless, like this, the builder must let go of all his willful images, and start with a void. .... you must start with nothing in your mind’.* (Alexander, 1979, p.538)

*‘You are able to do this only when you no longer fear that nothing will happen, and you can therefore afford to let go of your images’.* (Alexander, 1979, p.538)

In other words, designers must ignore their own intentions before engaging in the creation process as the designer is merely the medium required for the design to take place.

” *‘Your mind is a medium within which the creative spark that jumps between the pattern and the world can happen. You yourself are only the medium for this creative spark, not its originator’.* (Alexander, 1979, p.397)

However, this abstraction is difficult to achieve, as many people don't understand how something can arise from a completely void state, primarily because the act of 'creation' is believed to be an intentional process. To combat this disbelief, Alexander wrote *A Pattern*

Language (Alexander, Ishikawa, et al., 1977), in which he documented and named the generative rules for the creation of towns and buildings. Alexander argued that the patterns in a pattern language were the rules that operated within a creative process that was free of the designer's intentions and by following these patterns, the designer could achieve egoless creation.

” *‘Get rid of the ideas which come into your mind. Get rid of pictures you have seen in magazines, friends’ houses ... Insist on the pattern, and nothing else. The pattern, and the real situation, together, will create the proper form, within your mind, without your trying to do it, if you will allow it to happen. This is the power of the language, and the reason why the language is creative.’ (Alexander, 1979, p.397)*

*‘To do it, you must let go of your control and let the pattern do the work. You cannot do this, normally, because you are trying to make decisions without having confidence in the basis for them. But if the patterns you are using are familiar to you, if they make sense to you, if you are confident that they make sense, and that they are profound, then there is no reason to be afraid of giving up your control over the design. If the pattern makes sense, you do not need to control the design.’ (Alexander, 1979, p.399)*

The patterns Alexander speaks of do not individually exist, but have a certain sequence and are interrelated; therefore, if the pattern sequence is followed, the creation proceeds autonomously similar to the growth of a living organism.

” *‘the order of the language is the order which the patterns need to operate on one another to create a whole. It is a morphological order, similar to the order which must be present in an evolving embryo. And it is this very same order which also allows each pattern to develop its full intensity. When we have the order of the language right, we can pay attention to one pattern at a time, with full intensity, because the interference between patterns, and the conflicts between patterns, are reduced to almost nothing by the order of the language.’ (Alexander, 1979, p.401-402)*

*‘We are ready, now, to see just how a sequence of patterns can create a building in our minds. It happens with surprising ease. The building almost “makes itself,” just as a sequence seems to when we speak.’ (Alexander, 1979, p.407)*

As Alexander explained, patterns enable designers to let go of their intentional control.

” *‘Once you learn that the pattern language and the site together will genuinely generate from inside your mind, from nothing, you can trust yourself to let go of your images entirely.’ (Alexander, 1979, p.538)*



” *‘For a person who is unfree, the language seems like mere information because he feels that he must be in control, that he must inject the creative impulse, that he must supply the image which controls the design’. (Alexander, 1979, p.538-539)*

*‘It is a fearsome thing, like diving into water. And yet it is exhilarating — because you aren’t controlling it. You are only the medium in which the patterns come to life, and of their own accord give birth to something new’. (Alexander, 1979, p.426)*

*‘once a person can relax, and let the forces in the situation act through him as if he were a medium, then he sees that the language, with very little help, is able to do almost all the work, and that the building shapes itself. This is the importance of the void. A person who is free and egoless starts with a void and lets the language generate the necessary forms out of this void. He overcomes the need to hold onto an image, the need to control the design, and he is comfortable with the void, and confident that the laws of nature, formulated as patterns, acting in his mind, will together create all that is required’. (Alexander, 1979, p.539)*

As explained, when people gain experience in using the patterns and engaging in egoless and generative creations, it eventually becomes unnecessary to refer to the patterns because what is essential is the egoless and generative creation itself, with the pattern language being merely the tool that steers the creation. Alexander claimed that ‘it is just your pattern language which helps you become egoless’ (Alexander, 1979, p.543), and that ‘in this sense, the language is the instrument which brings about the state of mind, which I call egoless’. (Alexander, 1979, p.546)

” *‘Gradually, by following the language, you feel free to escape from the artificial images society has imposed upon you. And, as you escape from these images, and the need to manufacture things according to these images, you are able to come more into touch with the simple reality of things, and thereby become egoless and free’. (Alexander, 1979, p.544)*

*‘... at that moment he no longer needs the language. Once a person has freed himself to such an extent that he can see the forces as they really are and make a building which is shaped by them alone and not affected or distorted by his images ——— he is then free enough to make the building without patterns at all ——— because the knowledge which the patterns contain, the knowledge of the way the forces really act is his’. (Alexander, 1979, p.543)*

The relationship between Alexander’s idea of egoless creation and pattern language is the essential message in *The Timeless Way of Building*, but has often been overlooked or mis-

understood. Although focusing on actions, Creation with pattern languages for human actions, which we call Pattern Language 3.0 (Iba, 2016), should be also egoless as same to creation with Alexander's pattern language in architecture. The idea of the egoless creation differs psychologically from the everyday definition for 'creation'; however, when considered from a wider context, many others have made the same observations. The next section introduces similar arguments from various fields and relates them to Alexander's egoless creation concept.

### 3. Egoless Creation in Other Creative Domains

Arguments similar to Alexander's have been made by fiction writers and movie directors who have claimed that the characters in their works 'cannot be controlled by the creator's intentions', and that 'they take on a life of their own'. There are some writers who have claimed that as stories cannot be artificially created, they do not know how they will end until they are written. Haruki Murakami, for example, made the following observation.

“ *When I start working on a book, I do not have any plan whatsoever. I simply wait, patiently, for the story to come to me. There is not a time when I intentionally make decisions about what kind of story it will be, or what will happen in it'. (Murakami, 2010, translated by the authors in this paper)*

Murakami further elaborates in detail as follows.

“ *It is of course the author who comes up with the characters. However, if the characters are truly alive, they will at some point take off and begin acting on their own. This is not just my opinion, but is an awareness shared by many fiction writers. In fact, if such a phenomenon were not to take place, writing a book would be an extremely grueling and painful process. Once a book gets on the right track, the characters begin moving on their own and the story proceeds naturally; hence, the writer takes on the pleasant role of simply transcribing the events that are occurring. In some cases, the character may even take the author by the hand and lead him/her to some surprising place the author had not expected to see'. (Murakami, 2015, p.232, translated by authors in this paper)*

Similarly, writer Stephen King also stated that he did not control the actions of the characters in his stories.

“ *I often have an idea of what the outcome may be, but I have never demanded of a set of characters that they do things my way. On the contrary, I want them to do things their way. In some instances, the outcome is what I visualized. In most, however, it's something I never expected'. (King, 2010)*

” *For me, what happens to characters as a story progresses depends solely on what I discover about them as I go along — how they grow, in other words. Sometimes they grow a little. If they grow a lot, they begin to influence the course of the story instead of the other way around.* (King, 2010)

Writers have also claimed that the writing process was merely a medium within which the story self develops, and their role is to simply transcribe what occurs. King claimed that ‘the job of the writer is to give them a place to grow (and transcribe them, of course)’. (King, 2010) and ‘if you do your job, your characters will come to life and start doing stuff on their own. I know that sounds a little creepy if you haven’t actually experienced it, but it’s terrific fun when it happens’. (King, 2010, p.195)

Murakami expressed a similar feeling; ‘I feel like the novel has already moved on and now I’m chasing after the images’. Kawa i& Murakami, 2016, p.68). Movie director Hayao Miyazaki echoed this sentiment; ‘So in effect, I myself wasn’t in the lead in creating this story; I was just trying to keep up with it’. (Miyazaki, 1996, p.396).

Therefore, both writers experienced a process in which they were not actively creating the story but were overseeing the story’s self-generation. As they do not know beforehand where the story is going to go, they experience these stories as they occur and then transcribe them; therefore, there are times when the authors encounter a surprising event, which they learn from and which can change the direction of the story. Murakami stated that ‘I myself do not know what the storyline will be’ (Murakami, 2010, translated by authors in this paper), and described his experiences as follows;

” *The journey that the main character goes through is also the journey I go through. When I’m writing, I experience the same feelings my main characters experience and endure the same trials. In other words, after completing a book, I am a different person than I was before beginning the writing process.* (Murakami, 2010, translated by authors in this paper)

Michael Ende, a fantasy fiction writer has also made a similar statement.

” *What I often say is that the writing process is like a journey. Where that journey takes me and how that journey will end is unknown even to me. Therefore, for every book I have written, I have become a different person each time. In fact, my life can be broken down based on the books I have written as each writing process has changed who I am.* (Ende, 2000, translated by authors in this paper)

These statements therefore are in contrast to the perception that ‘writers write about what they come up with’. If writers only transcribed things they already knew, no new discoveries

or transformations would take place. The experiences related above are not unique and have been mentioned by many writers as well as Jiro Kawakita, a cultural anthropologist;

” *A creative act involves the creation of the object itself, but also generates change within the individual who is engaging in the creation. In other words, the subject is also being created. A creation that is done one-sidedly is not truly a creative act. The more creative an act is, the more remarkable the change in the subject is'. (Kawakita, 1993, p.86, translated by authors in this paper)*

Creators in other domains have also explained that the creative processes are not controlled by the creator but are guided by a force within the object itself. Hayao Miyazaki made the following observation.

” *When people talk about making films, they often use fancy and hip phrases like 'being creative,' however, in reality, you do have creative choices until you select the topic for your film. ... Now, you may make this choice based on some deep subconscious desire, but once you have decided to make your film, you're not really making the film --- it will be making you'. (Miyazaki, 1996, p.109-110)*

*The film tries to become a film. The filmmaker just becomes a slave to the film. The relationship is not one of me creating the film, but rather of the film forcing me to create it'. (Miyazaki, 1996, p.430)*

Composer Jo Hisaishi, who often creates music for Miyazaki's films, also shared a similar experience.

” *If you are trying to create the music inside your head, you are only at the very beginning stage. What is essential in the composing process is to dive deep into a state of unconsciousness and discover yourself within the chaos as you would have never imagined. If you have to consciously force yourself to create something, it most likely means that you are still thinking inside your head'. (Hisaishi, 2006, translated by authors in this paper)*

*You find yourself at a point where it is difficult to find order; you undergo agony, you struggle, and you try with all your strength to create something. When you go beyond that and reach a state where you are freed from your own intentions /control; only then, can you create music powerful enough to move people'. (Hisaishi, 2006, translated by authors in this paper)*

The interesting argument by these people involved in creative processes is that the stories and music they create are 'not created from within their minds' but instead 'exist in some

outside place'. King stated that 'I believe that stories are found things, like fossils in the ground' and that, 'Stories are relics, part of an undiscovered pre-existing world. The writer's job is to use the tools in his or her toolbox to get as much of each one out of the ground intact as possible'. (King, 2010, p.163-164)

Hayao Miyazaki also said; 'I think my films are not inside my head, but are in a space above my head. The film already exists'. (Miyazaki, 1996, p.430), thereby indicating that his creative process was external to his own mind. He elaborated further:

” *'It sounds impressive when I say I'm being creative, but that's not what's really going on. There is only a single best solution given the combination of my present abilities and the objective conditions in which I am placed. Once I decide on a method for the production and a direction, although there are many ways of determining the direction, there is only one way to proceed each time. My work consists of nothing more than discovering how I can get as close to that direction as possible.'* (Miyazaki, 1996, p.430)

The poet, Shuntaro Tanikawa, also made a similar statement;

” *'In creating a written work that is ultimately a mere combination of different words, we decide which word follows the word that comes before it. In making this decision, we feel a sense of necessity which is unquestionable.'* (Tanikawa, 2006, translated by authors in this paper)

*'Is it possible to make linguistic decisions in an active way at all times? Are there not times when words gravitate toward us, sometimes against our will; or better yet, when it feels as though the words themselves have chosen us?'* (Tanikawa, 2006, translated by authors in this paper)

Jo Hisaishi, a composer, also explained that; 'composition is not about using your own senses to write music; it is rather a process of figuring out whether "this works here", and continuing to search when you feel "there is something wrong", "something is off..." ' (Yoro and Hisaishi, 2009, translated by authors in this paper)

” *'It becomes a matter of whether you feel you are allowed to make changes to the music; questioning whether it feels like it is you who is making that decision. When you get far enough along the path to really pursuing something, you begin to get a sense that it is not you who is creating the music or choosing each note; that instead, there is a definite best solution somewhere that puts all of the pieces into their right places and that you must search until you find it.'* (Yoro and Hisaishi, 2009, translated by authors in this paper)

Thus far, the quotes from various creators regarding their experiences of egoless creation have been examined. From the observations, we understand that in a creative process, a sense of what 'should be' prevails over the creator's own will. Therefore, Alexander's egoless creation is a concept common to creators in other domains, and while it is not a concept perceived in everyday life, it is in fact the very core of the creative process.

However, the question of how egoless creation takes place remains unclear. To understand the egoless creative process and how such processes are possible, it is necessary to go beyond simply observing and analyzing the actions that take place. Therefore, in the next section, these questions are examined in reference to systems theories.

## 4. Understanding Egoless Creation using Systems Theories

In this section, we examine the egoless creation mechanism from a Theory of Autopoietic Systems perspective. Autopoietic systems is a theory proposed by Humberto Maturana and Francisco Varela in relation to biology (Maturana and Varela, 1972). Niklass Luhman, a sociologist who applied the autopoietic system concept to sociology (Luhmann, 1984), described the theory, as follows;

'Autopoietic systems are systems that themselves produce not only their structures but also the elements of which they consist in the network of these same elements. The elements (which from a temporal point of view are operations) that constitute autopoietic systems have no independent existence. They do not simply come together. They are not simply connected. It is only in the system that they are produced (on whatever energy and material basis) by being made use of as distinction'. (Luhmann, 1997, p.32)

The reason this paper focuses on the theory of autopoietic systems is because this theory can provide a general answer to 'what something is'. Luhmann researched the theory of autopoietic systems when seeking to deal with the questions of 'what is sociology?' and made the following remark;

” *From this viewpoint, the theory of autopoiesis is a meta-theory and an approach that in its own way, once again answers “What?” questions, such as “What is life?” or “What is consciousness?” or “What is social?” (that is to say, “What is a social system independent of the specific formation in which it occurs empirically?”). The concept of autopoiesis answers such “What?” questions - this, too, is a thought of Maturana'. (Luhmann, 2002, p.81)*

This paper specifically deals with the question of ‘What is creation?’; therefore, to answer this question, creativity must not be considered from a psychological perspective, but instead the focus must be on the creative process itself. Therefore, creation, and in particular, egoless creation, needs to be viewed from the perspectives extolled in the theory of autopoietic systems.

First, an overview of the Psychic System and Social System concepts from Niklas Luhmann’s Social System given, after which the Creative System concept from Creative Systems Theory (Iba, 2010) is introduced. Then, the ‘action’ and ‘experience’ concepts as defined by Luhmann are used to demonstrate what occurs in the egoless creation process.

#### 4.1. Psychic Systems and Social Systems

In his Social Systems Theory, sociologist Niklas Luhmann conceptualized thought as a psychic system that was a theorization of society from a systems perspective. Psychic Systems are autopoietic systems that arise from the continuous generation of ‘consciousness’ (which are elements within the system); that is, a certain consciousness is generated from a pre-existing consciousness, and then becomes the precedent upon which the subsequent consciousness is generated. Luhmann argued that this continuous consciousness generation was the essence of thinking.

In a psychic system, consciousness (the elements) can only be born within the system; that is, a psychic system cannot input or import elements from outside the system as each psychic system is ‘operationally closed’. Therefore, for people to develop good relationships with others it is necessary to communicate. Luhmann, for that reason, defined communication and social systems based on the understanding that psychic systems were autopoietic (Figure 1).

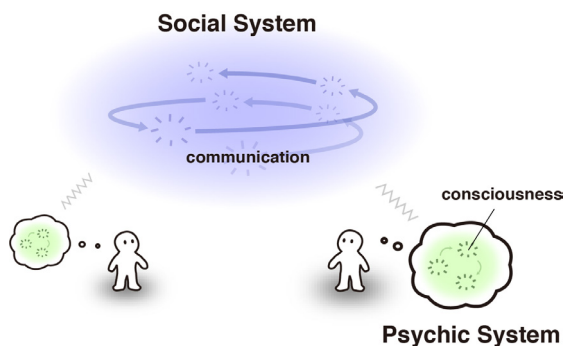


Figure 1: Psychic System and Social System

Luhmann’s Social Systems Theory claims that society is a system in which ‘communication’ is merely an element. While communication elements make up the social system, communication is also generated from within that system. Similar to consciousness, as commu-

nication is an element that disappears as soon as it is generated, it must be continuously generated. Social systems are also systems that are 'operationally closed', as the elements can only be generated from inside the system. As such, Luhmann's Social Systems Theory places the generation of communication as the foundation of the social system.

How then is communication, as an element in a social system, generated? Luhmann, claimed that communication emerges when three components; information, utterance, and understanding (Figure 2); exist. That is, from a social systems perspective, communication is generated when certain information is uttered with a certain intention and is understood.

“ *Information is a surprising selection from among several possibilities. As a surprise, it can be neither enduring nor able to be transported; and it has to be produced within the system, since it presupposes comparison with expectations. Furthermore, information cannot be gained purely passively as a logical consequence of signals received from the environment.* (Luhmann, 1997, p.36)

*Through utterance the system refers to itself. Utterance actualizes the possibility of recursively relating further communication to the system. Through information, in contrast, the system typically refers to its environment.* (Luhmann, 1997, p.53)

In Luhmann's Social Systems Theory, communication is not understood as the transfer of information between the addressor and the receiver; 'We must therefore abandon the classical metaphor that communication is a "transmission" of semantic content by one psychic system that possesses it to another'. (Luhmann, 1997, p.57) Instead, his Social Systems Theory states that the elements in a social system are generated within that system and that they emerge separately from the psychic system.

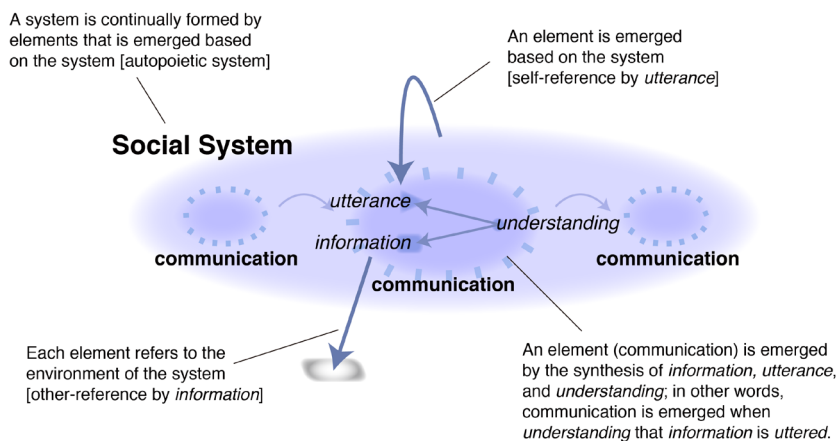


Figure 2: Emergence of Communication as a System Element through the Synthesis of Information, Utterance, and Understanding.



The three necessary communication components cannot, therefore, be viewed from the perspective of the people's actions that caused them; 'If we understand communication as an entity comprising the three components information, utterance, and understanding, which are produced only when communicating, this excludes the possibility of assigning ontological primacy to one of these components'. (Luhmann, 1997, p.36). In other words, observation must take place within the social systems as 'communication is thus a certain way of observing the world by means of the specific distinction between information and utterance'. (Luhmann, 1997, p.37).

'In this context, information is always part of a communication. It is something that functions as information only within the system and within its autopoiesis' (Luhmann, 2002, p.216) and:

” *'Here, as in the case of the concept of information, what is meant is not an external state --- say, the psychic state of the one who understands --- but a condition that guarantees that communication can continue. In other words, understanding and non-understanding must be distinguished'. (Luhmann, 2002, p.218-219)*

Only with this type of model is it possible to put the psychic system aside and focus on communication itself. Observing the mechanisms of society without a dependence on the people or other subjects is the basic principle of Luhmann's Social Systems Theory, in which the meaning of the information in the communication is not decided by the psychic system but is decided (selected) on through a chain of communication. With this understanding, it is possible to express a state in which the communicator's original intent was misunderstood due to the ongoing communication context.

This of course does not mean that people or other subjects are unnecessary for communication to take place, as they are essential communication components; however, they are only environmental components, and not essential parts of the social system.

” *'The environment is, of course, always involved, and without it nothing, absolutely nothing can happen. The term production (or simply poiesis) always refers to only part of the causes an observer can identify as required, namely, the part obtainable through the internal networking of the system's operations, the part with which the system determines its own state'. (Luhmann, 1997, p.52)*

To examine the autopoietic system elements in a more abstract way, it would look like the following. An element emerges when a reference (observation) to outside the system and a reference (observation) to the system itself are combined; in other words, an element is

generated through a combination of an other-reference (hetero-reference) and a self-reference. Therefore, in communication, 'information' is the other-reference and 'utterance' is a self-reference (Figure 2). Luhmann explained that the psychic system produces elements in the same way; 'psychic systems, too, work by means of the coupling of self- and hetero-references' (Luhmann, 2002, p.57)

” *‘Meaningfully operating systems reproduce themselves in the ongoing implementation of the distinction between self-reference and other-reference’. (Luhmann, 1997, p.39)*

*‘In short, meaning is `autopoietically’ constituted by systems that can only recognize their own boundaries in the process of constituting meaning by providing themselves with inward and outward references, their own distinction of a self and other-reference’. (Luhmann, 2000, p.86)*

This concept can be applied to the element generations in a creative system. In the next section, Luhmann’s Social Systems Theory approach is used to re-establish an understanding of creativity.

## 4.2. Creative Systems

Creative Systems Theory, proposed by one of the authors of this paper, Takashi Iba, is a theory that sees creation as an autopoietic system guided by an internal context (Iba, 2010), in which the act of creation is seen as one creative system, and the elements within the creative system are 'discoveries'; that is, a creative state occurs when a chain of discoveries is generated.

In line with Luhmann, this theory sees 'discovery' as a system element that is separate from human thought. Conventionally, in the area of psychology, creativity has tended to be studied from a human consciousness viewpoint; however, here, creativity is seen as separate from the psychic system (Figure 3), thereby allowing for a focus on the creation itself, but assuming that creative thinking is when there is collaboration between the psychic system and creative system functions.

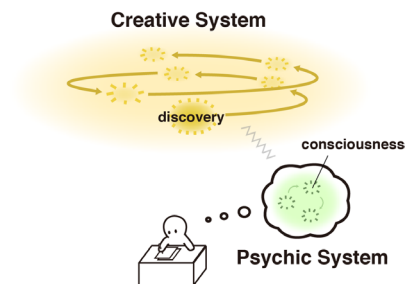


Figure 3: Psychic System and Creative System

As stated, the elements in the Creative System are discoveries, which are generated from within the system and can only emerge in relation to that particular creation; that is, the generated elements together constitute the system. As with communication, as the elements of discovery disappear the moment they are generated, they must be generated continuously for the system to exist. Therefore, it can be concluded that the creative system is an autopoietic system; the elements constitute the creative system, which in turn cause new elements to emerge, thereby enabling the system to exist.

In creative systems theory, discovery emerges from a synthesis of the following three components: ideas, associations, and findings (Figure 4). In other words, discovery occurs only when a finding is obtained as a result of an idea that is associated with the on-going creation; that is, the idea is a hetero-reference that refers to the system environment; association is a self-reference that refers to the system; and the finding combines these two reference types, the hetero-reference and the self-reference, the synthesis of which gives rise to the system element, discovery.

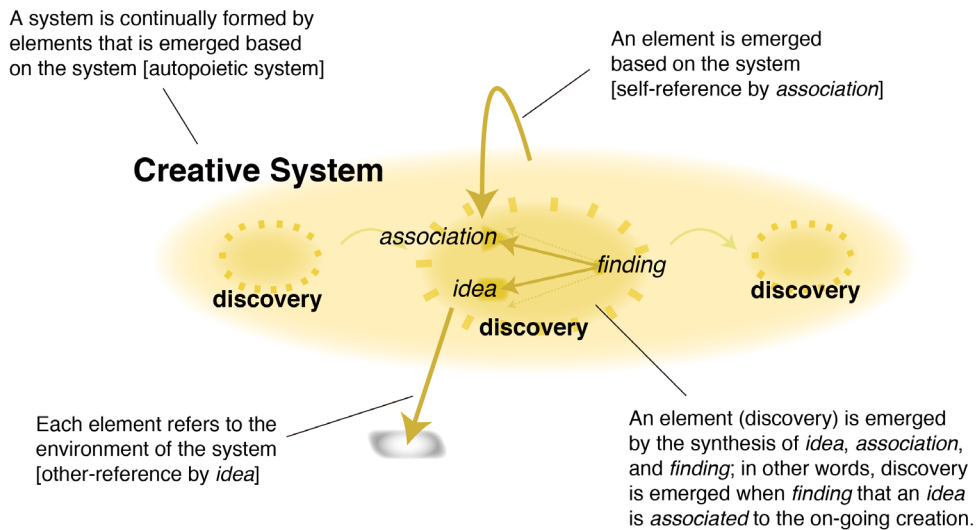


Figure 4: Emergence of Discovery as a System Element by Synthesis of Idea Association, and Finding.

Here, the term 'discovery' refers to any instance that progresses the creative process. In other words, it is an element that has resulted from a previous discovery that has caused a subsequent discovery and exists independently from the psychic system. By viewing the creative process in this way, it is possible to observe the generation and succession of discoveries that occur within the creative process that are separate from human thinking.

For instance, when creating a product, it is necessary to decide on the function, shape, and color. Through the creation process, discoveries are made about the function it will perform, the shape that fits the function, what color is best, etc. As each of these 'discoveries' is made, the product begins to take shape.

Regardless of the psychic process, as ideas and decisions (discoveries) are made, the creative process proceeds through a chain of discoveries when searching for ways to meet the necessary product factors (the 'should be's'), such as what shape suits the function, what color would make it more beautiful, etc. When applied to the development of a novel, the characters, with their certain personalities and experiences, have limited possibilities in terms of how they think and act within the assigned setting of the book. By abiding by the natural flow within the set parameters, the characters' thoughts, actions, and stories unfold; therefore, the 'discoveries' do not occur within the psychic system, but occur as the creation itself, which is why the creative system and psychic system must be separately defined.

This phenomenon can be applied to any creative process whether it is done by one person or by multiple people, as what is most important is the generation and succession of discoveries. In fact, from the perspective of the creation itself, it is not important whether the creation was done by one person or by multiple people if the same chain of discovery takes place (Figure 5). To phrase this in systems theory terms; what is essential to creation is the generation/succession of discoveries, and as long as this takes place, the involvement of one or multiple psychic systems is irrelevant to the creative system.

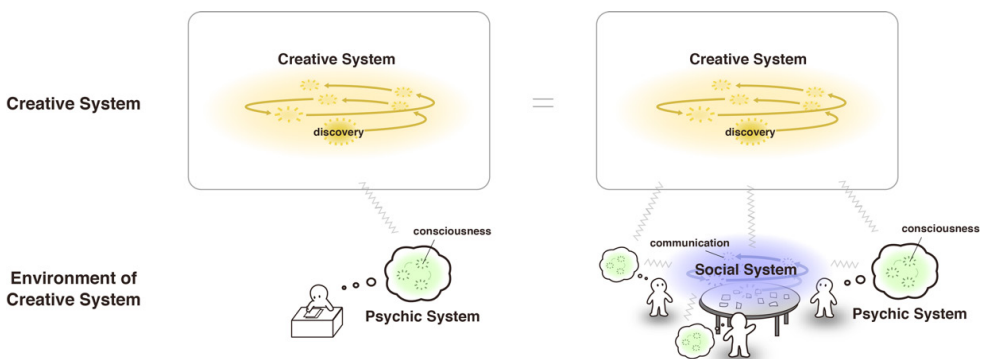


Figure 5: Psychic System and Social System are located in the Creative System Environment

### 4.3. Action and Experience

The remaining concepts essential to understanding egoless creation are ‘action’ and ‘experience’. ‘Action’ is a term used by Luhmann for when the cause for the resulting conclusion arises from within the system, and ‘experience’ is when the cause for the resulting conclusion arises from the environment.

In the theory of autopoietic systems, the emergence of an element is understood as a ‘selection’ that has taken place in a contingent state from other possibilities; that is, from the many different existing possibilities, only one was selected and only one survived. Through selection, a reduction in complexity takes place and a certain meaning is born; that is, a discovery with a certain meaning emerges as an element.

When such selection attribution is assigned to a certain system, the selection is understood as the action of that system; however, when the selection is made by the environment (including other systems), the selection is understood as an experience of that system.

” *According to the distinction of attribution, a meaning system distinguishes experience and action in relation to itself and in relation to other systems: if the meaning selection is attributed to the environment, then what occurs is characterized as experience, and the system turns to its environment to seek points of contact for further measures (even if the system was involved as experiencing!). (Luhmann, 1984, p.84)*

Using the concepts so far examined, we apply this relationship between the creative and psychic system to a creative activity, whereby the egoless creation is referred to as ‘Creation Type A’, and the intentional creation is referred to as ‘Creation Type B’ to examine the differences. Figure 6 visualizes the differences in the way the actions/experiences are assigned to each type.

For an intentional creation based on a creator’s intentions (Creation Type B), the discoveries that take place are intentionally selected (Figure 6, right); that is, the psychic system takes the selection action and the creative system experiences it. Therefore, while the discovery is controlled by the person engaging in the creative activity, the chain of discovery is artificial and intentional.

On the other hand, in an egoless creation (Creation Type A), the discoveries that take place within the creative system are initiated by the system itself (Figure 6, left). In other words, the discoveries are selected based on the contexts within the creative system; that is, the psychic system experiences the discoveries selected as actions by the creative system. It should be stressed that on the systems level, even the person involved in the creative activity merely experiences the discovery in their psychic system.

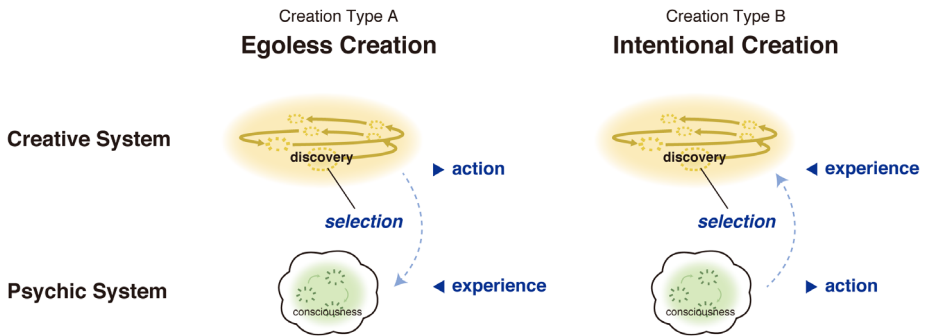


Figure 6: Differences between Egoless Creation and Intentional Creation, demonstrated using the concept of Action/Experience from autopoietic systems theory

Based on this view, it is possible for a chain of discoveries to occur in a creative system without the need for psychic system control. When writing a novel, the characters' speeches and actions are discovered as actions within the creative system based on the parameters of the personalities and the situations, with the author only experiencing them in their psychic system. Therefore, a chain of discoveries take place within the creative system that is outside the psychic system, which only observes the creative process. By observing the chain of discoveries, a writer can understand and transcribe what they have witnessed; that is, the psychic system does not actively control the creative system, but rather passively observes the workings of the creative system and collects the results.

## 5. Functions of Pattern Language in Egoless Creation

From the argument thus far, it can be concluded that egoless creation is possible and that the psychic system experiences the creative process as it unfolds in the creative system. In this section, the role of pattern language in supporting egoless creation is examined using Creative Systems Theory and Social Systems Theory. First, the functions of the patterns in creation are examined, after which the function of pattern language as a language of collaboration between multiple people is elucidated.

### 5.1. Patterns as discovery media in a Creative System

In a creative system, each individual pattern provides a discovery as to how to create something. 'Each pattern is a rule which describes what you have to do to generate the entity it defines' (Alexander, 1979, p.182).

” *‘As an element of language, a pattern is an instruction, which shows how this spatial configuration can be used over and over again to resolve the given system of forces wherever the context makes it relevant. The pattern is, in short, at the same time a thing which happens in the world and the rule which tells us how to create that thing and when we must create it.’ (Alexander, 1979, p.247)*

Each pattern describes a context, a problem that is likely to occur in that context, and a solution to resolve the problem. The relationships between these components provide a new discovery for the ongoing creation. Imagine for instance, that you are involved in a creative process and have found a pattern that fits your context. In such a case, the pattern offers a solution that describes what needs to be done. With the pattern offering a solution (idea), it is possible to find an association to apply that solution to your creative process, thereby generating a discovery, as explained by Alexander;

” *‘Each pattern is an operator which differentiates space: that is, it creates distinctions where there was no distinction before.’ (Alexander, 1979, p.373)*

This quote implies that by observing the creative system, the idea of a solution suggested by the pattern is selected from contingent possibilities. In this way, the patterns in the pattern language function as ‘discovery media’ which enables what was originally an improbable discovery to become probable.

Patterns as language are capable of supporting an entire chain of discoveries, which is the effect created by the pattern language structure and sequences as individual patterns are not independent but are interconnected with other patterns in a network structure.

” *‘Each pattern sits at the center of a network of connections which connect it to certain other patterns that help to complete it.’ (Alexander, 1979, p.313)*

There is also a pattern sequence;

” *‘Since the patterns are arranged in order of their morphological importance, the use of the language guarantees that a whole is successively differentiated, so that smaller and smaller wholes appear in it as a result of the distinctions which are drawn.’ (Alexander, 1979, p. 373-374)*

Therefore, by following the pattern sequence, it is possible to focus on one pattern at a time. As mentioned in the chapter titled ‘One Pattern at a Time’ in Alexander’s *The Timeless Way of Building*, ‘Within the sequence the language defines, you can focus on each pattern by itself, one at a time, certain that those patterns which come later in the sequence will fit into the design that has evolved so far’. (Alexander, 1979, p.402)

For this reason, Alexander believed that ‘the sequence of patterns for a design — as generated by the language — is therefore the key to that design’. (Alexander, 1979, p.382), and he refers to the sequence as an operator that has created the aforementioned distinctions;

” *The language is a sequence of these operators, in which each one further differentiates the image which is the product of the previous differentiations’. (Alexander, 1979, p.373)*

In summary, individual patterns make it easier to find the kinds of solutions (forms) that should be associated as ideas, and ultimately makes it easier to generate discoveries. The pattern sequences also enable the chain of discoveries to take place (Figure 7). Because the patterns contain an essence that generates a certain quality, an object created from the patterns will have wholeness and quality.

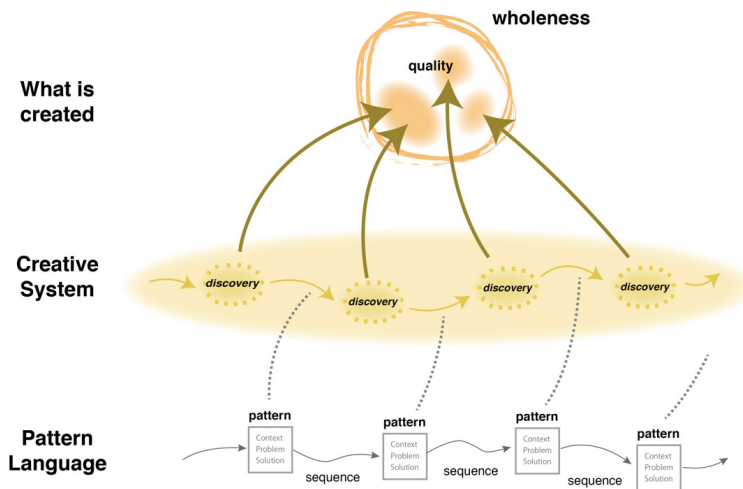


Figure 7: Pattern language supporting a chain of discoveries

What must be emphasized here is that the patterns do not dictate everything. What they do provide is a parameter for possible outcomes to proceed in an abstractly defined direction. To phrase this in terms of the theory of autopoietic systems, a pattern functions as a ‘structure’. Luhmann describes the term, ‘structure’ as follows.

” *Structures are conditions for restricting the area of connective operations, and are hence conditions for the autopoiesis of the system’. (Luhmann, 1997, p.261)*

*‘structures always realize themselves only in directing (restricting the possibilities for) progression from operation to operation’. (Luhmann, 1997, p.261)*



A pattern functions as the structures or conditions within the ongoing autopoietic creative system. Although the terms 'system' and 'structure' are generally used interchangeably, in the theory of autopoietic systems, they are defined as two completely different terms.

While the function of pattern language in a creative system has now been explained, how does this apply to the creative activities of the fiction writers mentioned earlier in the paper? To answer this question, we refer again to Alexander. In the *Timeless Way of Building*, Alexander discusses those patterns not explicitly expressed but existing inside a person's mind.

” *In short, each one of us, no matter how humble or how elevated has a vast fabric of rules of thumb in our minds which tell us what to do when it comes time to act. At the time of any act of design, all we can hope to do is to use the rules of thumb we have collected in the best way we know how.* (Alexander, 1979, p.205)

Therefore, the creative activities of the fiction authors can be understood as using rules of thumb or patterns in their minds to generate discoveries about the character's thinking, speech, action, communication, development, changes in human relationships, the natural flow of the story, and beyond. The patterns in the mind that propel the story also have forces behind them; as the thoughts and actions are naturally discovered with the assistance of these forces and are applied continuously, the story moves and unfolds. In this way, fiction authors entrust their creative development to these 'patterns in mind'.

These rules of thumb are heavily dependent on experience and are obtained through a long process of practice and mastery. The purpose of pattern languages is to share such rules so they can be usable by anyone.

## 5.2. Pattern Language for the Structural Coupling of the Psychic and Social System

What has been examined thus far are the functions pattern language has in the creative system. In this section, how pattern language functions as a collaborative tool among multiple people is further investigated.

After explaining how to use pattern language in a design process in *The Timeless Way of Building*, Alexander discusses how it can be used as a collaborative tool involving multiple people: 'In the same way, groups of people can conceive of larger public buildings on the ground by following a common pattern language, almost as if they had a single mind'. (Alexander, 1979, p.427). A significant function of pattern language is that it not only supports discovery through what is written in the patterns (the contents) but that the individual patterns are named and can be used as vocabulary in thought and communication. Pattern languages when used as common vocabulary support collaboration.

To further this understanding, it is necessary to focus on the 'language' aspect of pattern language in relation to the psychic system and social system perspectives. As already established, both the psychic system and social system are operationally closed autopoietic systems. However, the social system is a system that exists in tandem with the psychic system, and vice versa. Luhmann explained how these systems interacted using the 'structural coupling' concept proposed by Maturana.

” *What is the mechanism of structural coupling between psychic and social systems, between consciousness and communication? I am tempted to answer: `Language!’ Language is the answer to a theoretical problem that is posed very precisely. Language is obviously double-sided. It can be used psychically as well as communicatively, ...’ (Luhmann, 2002, p.202)*

*‘Plainly, the regular structural coupling of consciousness systems with communication systems is made possible by language’ (Luhmann, 1997, p.60)*

As Luhmann stated 'Language is obviously double-sided' (Luhmann, 2002, p.202); that is, language functions as structure in both the psychic system and the social system. In the psychic system, language affects what is selected in people's minds. To use Luhmann's words; 'seen from the psychic standpoint, language is an attractor of attention'. (Luhmann, 2002, p.202) However, in the social system, language affects what information is selected in the communication. Therefore, as a language, pattern language functions as a structure in both systems, and these systems are also structurally coupled.

However, as discussed, structure is merely the condition that guides the generation of the elements in an autopoietic system, and therefore does not determine the system's state from the outside. Even when structurally coupled, the two autopoietic systems interact as operationally closed systems, and the condition of the system is not determined from the outside: 'Structural couplings do not determine the state of the system'. (Luhmann, 2002, p.88)

In this way, in collaboration, pattern language not only supports the discoveries in the creative system (as seen in the previous subsection) but also facilitates the structural coupling of the psychic and social systems (Figure 8), which is what occurs when using pattern language in a design process with multiple people.

Alexander recommended visiting the actual building site to gain a clearer idea when designing with multiple people. In other words, he stressed the importance of sharing not only the language but also the design place, as this is an important reference for observations in both the psychic and social systems.

” ‘Of course, they no longer have the medium of a single mind as an individual person does. But instead, the group uses the site ‘out there in front of them’, as the medium in which the design takes its shape’. (Alexander, 1979, p.449)

*The site speaks to the people — the building forms itself — and people experience it as something received, not created’. (Alexander, 1979, p.449)*

In this way, both the psychic and social systems experience the generation/succession of discoveries in the creative system, with language functioning as the coupling; however, to experience the creative system, the ideas suited to the context must be associated. For that discovery to take place, it is not only necessary to have patterns, but also to have an enabling context, which is why it is necessary to share the creation place; once this is done, it becomes possible to observe all three systems (creative, psychic, and social) and their generated elements (discovery, consciousness, and communication).

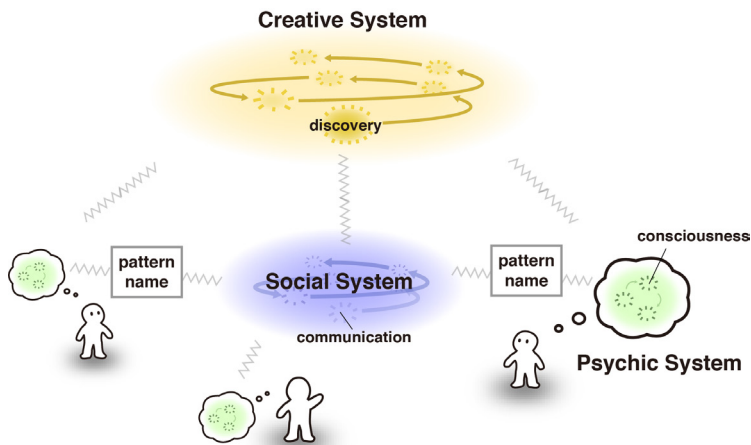


Figure 8: Pattern language enabling a structural coupling of the psychic system and social system

## 6. Conclusion

This paper examined the goals of pattern language by focusing on egoless creation, an important concept repeatedly mentioned by Alexander in *The Timeless Way of Building*. Alexander argued that ‘the builder must let go of all his willful images, and start with a void’. (Alexander, 1979, p.538) and that ‘you yourself are only the medium for this creative spark, not its originator’, (Alexander, 1979, p.397); ideas that are not easily understood in modern

thinking. However, as demonstrated in this paper, such arguments have also been made by creators in various domains.

This paper examined creativity from a theory of autopoietic systems perspective and reached the conclusion that egoless creation is a state in which the generation/succession of discoveries within the creative system are being experienced by the psychic system. It was also established that pattern language functions as the discovery media that support discovery selection in a creative system and supports collaboration through its structural coupling of the psychic and social systems.

Although Alexander did not refer to the theory of autopoietic systems, it can be surmised that this was in line with his thinking. From *Notes on the Synthesis of Form* to *The Nature of Order*, Alexander continued to emphasize the limitations of intentional design, and worked on finding a mechanism for generation that was beyond individual abilities or experiences. In *Notes on the Synthesis of Form*, Alexander observed a transition from an age of the 'un-selfconsciousness process' to an age of the 'self-conscious process' and sought solutions to the realization of quality by taking the self-conscious age into account.

Because a receiver's frame of thinking is heavily dependent on modern thinking, Alexander's most important arguments have been perceived as 'mystic'. This paper, therefore, opens a path to understanding Alexander's 'mystic' arguments through a systems theory perspective. We hope that this paper can act as a trigger or stimulus for future discussions on pattern language.

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