Image Schema Analysis of Synonymy, Hyponymy, and Metonymy Relations

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Abstract— The rational of this study is to investigate the cognitive mechanisms involved in configuring sensory experience and encyclopaedic knowledge in the mental system through the analysis of synonymy, hyponymy, and metonymy relations. The aim is to characterise the conceptualization of synonymy, hyponymy, and metonymy relations in the conceptual structure by adopting Image Schema Theory (Johnson, 1987; Lokoff, 1987). Besides, it also aims at identifying the differences in embodying a pair of synonyms, a hyponym and superordinate, and two metonymic forms adopting image schema theory. These relations are analysed adopting a descriptive qualitative method using image schema theory. Thus, the motivation behind this study is to perceive how these relations are conceptualised and embodied in the mental structure of the speaker. The study concludes that these lexical sense relations can be conceptualised in the conceptual system by adopting image schema patterns. The adopted lexical sense relations can give rise to various image schematic patterns, so the structure of the sentence restricts the type of the pattern. In the analysis of metonymy relation, the image schema assigns an objective identification of the metonymic form. The most frequently used pattern is the FORCE image schema based on the analysed sentences.

Keywords*: Image Schema, Cognitive Semantics, Synonymy, Hyponymy, Metonymy.*

1. Introduction

Cognitive semantics represents an approach to the study of mind and its relationship with embodied experience and culture. It proceeds by employing language as a key methodological tool for uncovering conceptual organisation and structure (Evans and Green, 2006). Therefore, image schema theory is studied to uncover the relationship between mind and lexical items. Image schema theory is one of the distinguishing theories of cognitive semantics. It was established in two academic works on the same year by Mark Johnson (1987) in 'The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason', and by George Lakoff (1987) in 'Women, Fire, and Dangerous Things: What Categories Reveal about the Mind'. Johnson (1987) identifies image schema as a dynamic pattern that functions as an abstract structure of an image, and this conceptual structure links a wide range of different experience that manifest this dynamic structure. However, Lakoff (1987: 267) refers to image schema as 'relatively simple structures that constantly recur in our everyday bodily experience.'

Embodied experience gives rise to image schemas within the conceptual system as proposed by Johnson (1987). Image schemas are formed as a result of our sensory and perceptual experiences when interacting with and moving through the world (Evans and Green, 2006).

Syonymy, hyponymy, and metonymy relations have been studied extensively by different authors, and each has taken it from a unique dimension. Lyons (1995) and Palmer (1997) establish a structural analysis of these relations, whereas Saeed (2009) studies them from the perspective of the lexicon as a network. Thus, an important organisational principle in the lexicon is the 'lexical field'. Cruse (1986, 2000) takes a comprehensive account of lexical sense relations.

The present article adopts a descriptive qualitative method in analyzing some sentences made up with synonymy, hyponymy, and metonymy relations using the image schema theory. Thus, this study aims at identifying how these relations are represented and configured in the mind

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using image schema patterns. Also, it aims at finding the differences in conceptualizing two synonyms, hyponym and superordinate, and two metonyms in the conceptual system using image schema theory. This study hypothesizes that these relations can be embodied and conceptualized using this theory. Also, it hypothesizes that various configurations and patterns are involved in the analysis of these relations. In other words, different schematic structures are made in the mind when analyzing these relations using this theory. Thus, this study attempts to answer the following questions: Can the adopted lexical relations be conceptualized using image schema theory? Are there any similarities and differences in embodying two synonyms, hyponym and superordinate, and two metonymic forms in the conceptual system?

2. Previous studies

Although image schema theory has been studied in various academic works, no researcher has used it to analyse the lexical sense relations, particularly synonymy, hyponymy, and metonymy, all together. However, different studies are mentioned below, and each work uses the image schema theory to focus on an aspect or a set of data. The first work to start with was conducted by Velasco (2001). This study investigated the role of image schema in the construction of the interaction between conceptual metonymy and conceptual metaphor. Thus, metonymy was manifested as a component of conceptual structure, rather than a type of sense relations.

Another work on image schema was published by Gharagozloo (2009). This article studies the roles of image schema and other mental abilities in the construction of hyponymy at the level of words of Persian language. This study adopted the theory of layered schemas (LST) to analyse some Persian texts to find hyponymy relation.

Another study on image schema was carried out by Paknezhad and Naghizadeh (2016). This article tried to analyse image schemata in Persian and Arabic proverbs, as proverbs play an essential role in human cognition and experience about internal and external world based on Green and Evans (2006).

Another work on image schema was added to cognitive portfolio by Otieno and Owino (2017). This study investigated the role of image schema in conceptualizing conceptual metaphors in political discourse in Kenya, and how it is essential in the construction of metaphors.

Similarly, another different work was published by Vernillo (2018). This study examined the embodiment of action verbs in the conceptual structure, and it presented the effects of these action verbs on our perceptual and motor system. A highly detailed linguistic process of these verbs was provided by the image-schematic structure.

Another study on image schema was conducted by Hameed and Hameed (2019). This article focused on presenting the most frequent image schema pattern in Arabic economic texts. It revealed that force, scale, and containment were the most essential in conceptualising the economic magazines written in Arabic.

Image schema theory was tackled differently by Hample (2020). This study focused on the metaphorical representation of political speech in the mental structure based on PATH and FORCE image schema patterns.

Finally, Wachowiak and Gromann (2022) conducted a study on image schema. This work studied natural language and reasoning as physical experience that shape abstract cognition. Thus, these recurring sensorimotor experiences were tackled using image schema that was represented as spatio-temporal cognitive building blocks.

The present study sets itself apart from previous research by analyzing three unique relations, namely synonymy, hyponymy, and metonymy, through the lens of image schema analysis. Notably, this study adopts a comprehensive approach, as it does not limit its focus to any specific type of image schema. Rather, all forms of image schema theory are incorporated to analyze the selected sentences, enabling a more nuanced understanding of the data and contributing significantly to the field.

3. Image schema theory

The notion of image schema is closely associated with the development of the embodied cognition thesis proposed by Johnson's (1987) 'The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason', and Lakoff's (1987) 'Women, Fire, and Dangerous Things: What Categories Reveal about Mind.' Johnson (1987, xiv) introduces image schema as: 'a recurring, dynamic

pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience'. So, image schemas are dynamic analog representations of spatial relations and movements in space. Even though image schemas are derived from perceptual and motor processes, they are not themselves sensorimotor processes. Instead, image schemas are primary means by which we construct or constitute order and are not mere passive receptacles into which experience is poured. In this way, image schemas are different from the notion of schemata traditionally used in cognitive science, which are abstract conceptual and propositional event structures (Evans and Green, 2006).

3.1 Types of image schema patterns

Johnson (1987) and Lakoff (1987) provide a list of image schema patterns to form the conceptual structure in understanding the basis for meaning relations, and how meaning is embodied in the conceptual structure. Thus, each type is explained briefly.

- The **Source-Path-Goal** schema involves the movement of an entity from a place to another. This pattern includes three parts: a source (starting point), goal or destination, and a path (a sequence of contiguous locations connecting the source with the goal).
- The **Link** schema involves two or more entities, and a link connecting these entities. This pattern is activated due to the use of perceptual capacities that gives rise to concrete and abstract linkages.
- The **Cycle** schema involves a cyclic process of an object or experience. This pattern perceives the cyclic process in a temporal circle that begins with an initial state, and then proceeds through a sequence of connected events, and it ends where it began.
- The **Scale** schema involves an increase or decrees on the quantitative and qualitative aspects of an experience. Objects can be added to a group or pile, and objects can be taken away from pile and group as well. Thus, this pattern is based on **VERTICALITY** and **SCALARITY**.
- The **Center-Periphery** schema embodies the idea that the conceptual structure identifies a domain of objects. The object that is placed at the center of the domain is salient or important in reference to some other objects that are less important, so they are placed far from the center.
- The **Container** schema includes the experience of having an entity in containment. This pattern engages three structural elements: interior, boundary, and exterior.
- **Force** schema includes seven force schemas with the following features:
- The first FORCE schema is the **COMPULSION** schema. This emerges from the experience of being moved by an external force.
- The second force-related image schema is the **BLOCKAGE** schema. This image schema derives from encounters in which obstacles resist force, for example when a car crashes into an obstacle like a tree.
- The third force-related image schema is the **CONTERFORCE** schema. This derives from the experience of two entities meeting with equal force.
- The fourth force-related image schema is the **DIVERSION** schema. This occurs when one entity in motion meets another entity and this results in diversion.
- The fifth force-related image schema is the **REMOVAL OF RESTRAINT** schema. This captures a situation in which an obstruction to force is removed, allowing the energy to be released. This describes a situation like leaning on a door that suddenly opens.
- The sixth force-related image schema is the **ENABLEMENT** schema. This image schema derives from our sense of potential energy, or lack of it, in relation to the performance of a specific task.
- Finally, the **ATTRACTION** schema derives from experiences in which one entity is drawn towards another entity due to the force exerted upon it.
- Some other image schemas are: **Interaction**, **Surface**, **Near-Far**, **Merging**, **Matching**,

Contact, **Object**, **Mass-Count**, **Splitting**, S**uperimposition**, **Process**, and **Collection**.

4. Corpus of the study

The corpus of this paper has been extracted from different sources. Due to the scope of this paper, only fifteen examples are assigned to be discussed. The examples (1–5) study synonymy, and the examples (6–10) investigate hyponymy, whereas the last five examples analyse metonymy using image schema theory. These fifteen examples are cited from the following books: Brinton and Brinton (2010), Kreidler (1998), Cruse (1986, 2000), and Al-Sulaimaan (2011). Examples from these books are employed as they can be regarded as primary sources to study synonymy, hyponymy, and metonymy from a lexical-semantic perspective.

5. Analysis and discussion

In this section, synonymy, hyponymy, and metonymy are analysed using image schema theory in accordance with Johnson (1987) and Lakoff (1987). These relations are represented in the mental system using image schema theory. Thus, in each sentence, a schematic pattern is assigned, and the cognitive mechanism involved in configuring these relations in the sentences are presented in detailed.

1a. The shirt is **pale** in colour.
1b. The shirt is **light** in colour.

This pair of sentences is constructed using the SCALE image schema. The synonyms ‘pale’ and ‘light’ involve a decrease in intensity of colour in the object ‘the shirt’. In other words, the qualitative degree or intensity of colour is reduced. Thus, ‘the shirt’ is conceptualised as an object that has a certain degree of intensity. This schema is vertical in nature, with more intense colours mapped to the UP and less intense colours mapped to the DOWN.

2a. The train travelled **fast**.
2b. The train travelled **rapidly**.

The FORCE schema is conceptualised in the construction of image schema in the above pair of sentences. This schema involves the movement of an object ‘the train’ through space in some directions. In other words, this schema has a vector quality or directionality. Thus, a force was exerted against the object ‘the train’ that led to the movement of the train. The synonyms ‘fast’ and ‘rapidly’ describe the force vector that causes the movement of ‘the train’. These two synonyms identify the degree of power or the intensity of the force, i.e., a greater force is exerted on the movement of the train. The exertion force and the entity moved are organized as Gestalt structure. In other words, any given schema can be analysed and broken down because it has unified parts and patterns.

FORCE schema has seven types, but this pair of sentences is made up by the COMPULSION FORCE type. This type refers to the idea that an object is moved by the external force along a path. Therefore, there must be an external force that caused the movement of the train which is the ‘Train Operator’. The above two synonyms ‘fast’ and ‘rapidly’ represent the degree of the exerted force in this pattern.

3a. Little Billy was so **brave** at the dentist this morning.
3b. Little Billy was so **courageous** at the dentist this morning.

The above pair of sentences is formed using the complex image schema. Two image schemas are involved in the structure of these sentences. The first image schema is the ENABLEMENT FORCE schema. The trajector ‘Little Billy’ is conceptualised as having a sense of power to perform some action. The two synonyms ‘brave’ and ‘courageous’ initiate this sense of power, as there is no actualized or potential force vector to accomplish this action. However, the second image schema is the CONTAINER schema. The trajector ‘Little Billy’ occupies a location inside the landmark ‘at the dentist’. This landmark is metaphorically used to refer to the dental clinic. Thus, the lexical item ‘dentist’ is referred to as the source domain, but the ‘dental clinic’ is referred to as the target domain. The CONTAINER schema consists of three structural elements: interior, boundary, and exterior.

4a. Sara may play a **violin** concerto.
4b. Sara may play a **fiddle** concerto.

Image schema pattern is formed differently in the above pair of sentences. This pair is formed using FORCE image schema specifically REMOVAL OF RESTRAINT schema. The force is experienced through interaction as it affects an object. The force in these sentences is targeted by the agent 'Sara' to affect the objects 'violin' and 'fiddle'. The REMOVAL OF RESTRAINT schema is used as an absence of external force can be noticed. There is no barrier blocking the action of 'PLAYING'. The use of the modal verb 'may' conveys that some potential barrier to the action 'PLAYING' is absent or has been removed. The synonyms 'violin' and 'fiddle' receive the same force from the agent 'Sara'. Thus, these two synonyms are conceptualized similarly and maintain the same image schema pattern.

5. John was **killed**, but I can assure you he was not ***murdered***, madam.

Due to its compound structure, the above sentence (5) employs different image schema patterns. The two synonyms 'killed' and 'murdered' are the prevailing lexical items in the construction and conceptualization of image schema, and each is conceptualised by a different schema pattern. The first clause conceptualises the COMPULSION FORCE schema. This clause implies that there must be an external force vector to perform the action of killing. There must be someone who killed 'John'. Thus, the target, 'John' received a force vector, which is the action of 'KILLING' from an unknown agent. However, the second clause is made up using the BLOCKAGE FORCE schema. This schema is applied when the force vector encounters a barrier that blocks or stops the force from performing the action. The negative indication 'not murdered' entails that this force vector was blocked or resisted. Thus, the target, 'John' was prevented or blocked from receiving the force from the agent.

Despite the previous two image schema patterns, another schema pattern can be interpreted from the above sentence. The synonyms 'killed' and 'murdered' are used in two different clauses, but there is a connection or a LINK schema between them. These two lexical items share some features, as they share a common schematic structure, and they are spatially contiguous within the perceptual and cognitive realm. The logical connective 'but' acts as a link structure to relate these two lexical items, and establish a sort of connectedness between them in the conceptual structure.

6a: I bought some **flowers**.
6b: I bought some **roses and tulips**.

Inclusion structures are generally interpreted in terms of LINK image schema and some others. The above pair of sentences is formed using the LINK image schema. This schema involves three structural elements: entity A, entity B, and a LINK connecting them. The entity *A* is represented by the superordinate 'flower', but the entity *B* is represented by the hyponyms 'roses' and 'tulips'. The meanings of the hyponyms 'roses' and 'tulips' are included in the meaning of the superordinate 'flowers', whereas the meaning of 'flower' includes more than 'roses' and 'tulips'. Thus, the LINK between these lexical items conveys asymmetric schema structure as the meaning of entity *B* is included in the meaning of entity *A* but not the opposite. In other words, the LINK is asymmetric as the relation between the two entities does not hold in both directions. Moreover, these two entities share some features, and these shared features are the cognitive links. Thus, the conceptual representations of the hyponyms and the superordinate are interwoven. However, this type of link is manifested as Genetic Connection in which one or more entities are related to (connected with) a source.

7a. If all **cars** are forbidden, I shan't go.
7b. If all **vehicles** are forbidden, I shan't go.

There are different natural relationships between image schema patterns, and this sentence holds a transformation relation from FORCE schema to PATH schema. The first clause in each sentence is patterned using the BLOCKAGE FORCE image schema. The conditional subordinator 'If' entails the POSSIBILITY of a BLOCKAGE to block the force vector. The source of this BLOCKAGE power is unknown. Thus, the force vector is being diverted due to the interaction with the BLOACKAGE power, and this barrier leads to transformation of the schema. However, the second clause in each sentence resumes the action and inverts or

transforms the diverted BLOCKAGE power into PATH schema. This schema is made up of three patterns: a source or the current point, a goal or an end point, and a sequence of contiguous locations connecting the source with the goal. The source point (A) is known, but the destination or goal point (B) is unknown. Thus, the path from the source to the goal is unknown. Moreover, the PATH toward the GOAL is based on a condition. Thus, the PATH moves forward if the condition is fulfilled. Moreover, the hyponym 'cars' and the superordinate 'vehicles' share some characteristics as they are conceptualized as LINK schema, and they undergo the same BLOCKAGE power.

8a. There's a **palomino** in that field.
8b. There's a **horse** in that field.

In these two constructions, the pronoun "there" represents the existence of the hyponym 'palomino' and the superordinate 'horse', but the prepositional phrase 'in that field' denotes the presence of these lexical items in a PLACE. Thus, these two sentences are made using the CONTAINER image schema. In these schematic structures, the landmark 'in that field' is in relation to the trajectors the 'palomino' and the 'horse'. In other words, an apparent spatial orientation is found between the landmark and the trajector. However, different representations of schema are realized in each sentence. In case of the hyponym 'palomino', a specific trajector is identified in the landmark, whereas in case of the superordinate 'horse' the trajector is indefinite in the landmark. The two lexical items 'palomino' and 'horse' as a trajector correspond to the entity that undergo or occupies a space in the landmark 'in that field'. Thus, the hyponym and the superordinate items convey two concepts that are motion and containment. However, this indicates that image schema can present varying degrees of schematicity.

9a. The weary soldiers **trudged** forward.
9b. The weary soldiers **moved** forward.

This pair of sentences has a similar structure but different perceptual representations. The use of the hyponym 'trudged' and the superordinate 'moved' conveys that 'the weary soldiers' undergo an external force that leads them to leave one point and go forward to another. In other words, the motion of 'the weary soldiers' is not spontaneous as some other verbs are not used, for instance 'walk', 'run' or 'stroll'. Accordingly, these two constructions are perceived with a COMPULSION FORCE image schema. This force power moves the agents, 'the weary soldiers', with different degrees or intensity of power as the motions 'trudged' and 'moved' are perceived differently. The hyponym 'trudged' construes that the agent received more power than the situation in the superordinate 'moved'. Thus, this force has the vector quality as it moves the agent from one source to another. As a result, this force has the PATH OF MOTION quality, as the agent is moved along a path.

10a. The **oak** produces fruit every other year
10b. The **tree** produces fruit every other year.

The schematic construction of these sentences is different due to the use of the prepositional phrase 'every other year'. This phrase conveys the experience of producing the fruit within a cyclic process. Therefore, these two sentences are made using CYCLE image schema. The stages of the development of the tree or the production of the fruit occur every two years, i.e., biannually. This stage is perceived conceptually as a temporal circle. Thus, the use of 'every other year' entails that the hyponym 'oak' and the superordinate 'tree' undergo a cyclic or temporal relation with the item 'fruit'. This schematic cyclic structure starts with an initial stage, then a sequence of connected events is processed, and finally it ends where it started. In other words, these cyclic procedures are applied on the hyponym 'oak' and the superordinate 'tree'

11. **The White House** has released a statement.

The above sentence uses the noun phrase 'The White House' in a metonymic form, as it refers to the government's authority. The COMPULSION/FORCE image schema is used to construct this sentence. The schematic structure of this pattern is that an entity is moved by an external force. The metonymic lexical item 'The White House' is conceived in this pattern as it has the

force vector power to move an item, i.e., to release a statement. In other words, the metonymic item, 'The White House' as a building structure, has no vector power to move an entity, whereas the metonymic item, 'The White House' as a government authority, has the vector power to move or block an entity from moving. Thus, a statement cannot be released unless there is a potential power to do so, so the metonymic lexical item is used as a concept of authority rather than building structure.

12. **The ham sandwich** wants his coffee now.

The above sentence is constructed using the metonymic relation in the form of "the ham sandwich'. The ENABLEMENT Force image schema is used to conceptualize this sentence. This schematic pattern involves a potential force vector, or lack thereof. Thus, the actual force vector is lacking or removed from the performance of a specific task. The lexical item 'wants' explicates that there is no actual force vector to block the movement of the 'coffee'. Thus, the desire in the metonymic lexical item "the ham sandwich' enables or qualifies the movement of the 'coffee'. The noun phrase "the ham sandwich' has two metonymic forms: one refers to a type of sandwich, while the other refers to the person who has eaten the sandwich. Therefore, the sandwich does not have the force vector power to motivate the movement of the coffee, so the second sense or the second form of metonymic relation is involved. In other words, 'the ham sandwich' is a form of metonymic relation that refers to a person, and this schematic pattern is formed to afford a potential force vector to move an entity that is the 'coffee'.

13. **The car** in front decided to turn right.

The above sentence seems to be relation-free, but it is formed using the metonymic relation using the lexical item 'The car'. This metonymic expression has two forms; one refers to a vehicle with four wheels, whereas the other refers to the driver. Through the use of the schematic structure, the right form of the metonymic expression is conceptualized. This sentence is formed using COMPULSION FORCE image schema. The schematic structure of this pattern involves an external force vector that moves the metonymic lexical item 'the car'. Therefore, the represented image schema in this sentence is perceived by the second form of the metonymic lexical item, i.e., the driver rather than the car itself. In other words, the car can't be turned right unless there must be a driver. Thus, the driver sense of the metonymic lexical item 'the car' is attributed to the external vector force in the COMPULSION FORCE image schema.

14. **England** won the World Cup in 1966.

The metonymy relation is used in the preceding sentence by using the metonymic lexical item "England." The sentence presents a factual event that happened in 1966. Therefore, the LINK image schema undergoes the conceptualization of this metonymic lexical item in the conceptual structure. The schematic structural elements of this pattern are: two entities (*A* and *B*) and a link connecting them. The entity (A) is represented by the metonymic expression 'England', whereas the entity (B) is represented by the noun phrase 'the World Cup'. The lexical item 'won' and the year '1966' represent the configuration elements that link these two entities. In other words, in the conceptual structure, the metonymic lexical item is linked to the noun phrase 'the World Cup' by the use of the two elements 'won' and '1966'. The word 'England' in this sentence has two metonymic forms: one refers to the country itself, whereas the other refers to the team that represents this country. Certainly, the configurational elements 'won' and 'the World Cup' are conceptually linked to the second form of the metonymic relation that is represented by the team of the country, as it has enough attributes to link conceptually with other elements.

15. Jack noticed several new **faces** tonight.

This sentence is formed using the metonymy relation through the use of the lexical item 'faces'. This lexical item has two metonymic senses: one refers to the front part of the head of a person, whereas the other refers to people. The image schema theory attempts to identify the appropriate

form so that the metonymic word can be mapped properly in the conceptual structure. This sentence is formed using IDENTITY MATCHING image schema. The lexical item 'noticed' triggers the concept of MATCHING or identifying some attributes or features with some other people. Thus, this schematic pattern utilizes the second form of the metonymic word 'faces' which refers to people rather than the front part of the head. Another image schema is involved in the configuration of this sentence in the conceptual system. The metonymic lexical item is perceived using COLLECTION image schema as it is motivated by the use of the expression 'several new'. The schematic structure of this image identifies that a number of 'faces' are COLLECTED or grouped under the NEW parameter. In other words, the metonymic word 'faces' is COLLECTED or grouped in the conceptual system under the NEW parameter. Thus, these two image schema patterns MATCHING and COLLECTION can be embodied together in the conceptual structure. After the metonymic word 'faces' is MATCHED or identified, it is COLLECTED or grouped under the NEW parameter.

6. Results and discussion

This section presents and discusses the findings of the analysis and as follows:

1. Based on the data collected in this paper, twenty image schema patterns are used. The most frequently used pattern is FORCE image schema, as it is employed ten times and in nine examples. Among the sub-patterns of FORCE image schema, the COMPULSION schema is the most commonly used in conceptualizing these relations. However, the least used image schema patterns are: Scale, Path-Goal-Source, Cycle, Identity, and Collection.
2. The Force image schema pattern is identified as a key factor in the analysis of synonymy in the majority of cases, specifically in four out of five examples, highlighting its notable influence in conceptualizing synonymous relationships between lexical items. However, hyponymy is the most diverse relation, as five different image schema patterns are involved in its analysis.
3. The Scale schematic pattern does not only embody the lexical relation items, but it also helps to configure other entities in the sentence. Thus, Scale image schema can be mapped to UP and DOWN patterns. The more in degree and intensity is UP, and the less in degree and intensity is DOWN.
4. The Force image schema pattern causes the movement of an entity, as it has a vector quality. The pairs of synonyms in example (2) embody the degree of the exerted force power. Thus, the exertion force and the entity moved are organized as Gestalt structure.
5. Complex image schema patterns can be utilized to embody one example, as each pattern is configured to conceptualize an experience in the sentence, and both are essential in embodying the experience in sentence.
6. The use of the modal verb 'may' conveys that some potential barrier to the action in example (4) is absent or has been removed. However, the conjunction 'but' in example (5) acts as a Link image schema to relate two different image schemas in two different sentences.
7. Generally, the synonyms in sentences (1, 2, 3, and 4) and the hyponyms in the adopted sentences (6, 7, 8, 8, and 10) are conceptualized similarly and maintain the same image schema pattern, as they occur in the same syntactic structure of the sentences. However, the example (5) employs different image schema patterns due to its compound structure of the sentence.
8. Image schema patterns undergo transformational relation in example (7). This relation involves two schematic patterns, as the vector force quality is inverted or transformed from BLOCKAGE power into PATH schema.
9. Image schema can present varying degrees of schematicity. In CONTAINER image schema, the trajector, represented by hyponym and superordinate elements, corresponds to the entity that undergoes or occupies a space in the landmark. Thus, the hyponym and the

superordinate items convey two concepts, namely motion and containment.

10. The schematic construction of CYCLE image schema starts with an initial stage, then a sequence of connected events is processed, and finally it ends where it started. Usually, this pattern is embodied by time phrases, as in example (10). Thus, this pattern is perceived conceptually as a temporal circle.
11. Metonymy relation is represented by two or more metonymic forms. The image schematic pattern is attributed to the more relevant form in accordance with the sentence it occurs in. 'The White House' in example (11) has the vector power to move or block an entity from moving. Thus, a statement cannot be released unless there is a potential power to do so, so the metonymic lexical item is used as a concept of authority rather than building structure. Consequently, through the use of the schematic structure, the right form of the metonymic expression is conceptualized, so this explanation is applied to examples (12, 13, 14, and 15) as well.

7. Conclusions

Based on the above investigation and analysis of synonymy, hyponymy, and metonymy relations adopting image schema approach, the following points have been concluded:

- As image schema is derived from perceptual experience and encyclopedic knowledge, the three lexical sense relations, synonymy, hyponymy, and metonymy, can be embodied and conceptualized in the conceptual system using image schematic patterns. However, image schema theory can't conceptualize a pair of synonyms, hyponyms, or metonyms in isolation. They must occur in definite contexts to schematize the embodied experience.
- There is no fixed or specific schematic pattern for synonymy and metonymy relation as they can give rise to different image schema patterns. Thus, the structure of the sentence in which these two relations occurs restricts the type of the image schema pattern. However, hyponymy relation is generally conceptualized using LINK image schema patterns, as the hyponym is conceptually linked or included to its superordinate. This schematic pattern is made up of three elements: A, B, and a link connecting them. (A) is represented by a hyponym, and (B) is represented by a superordinate. Consequently, a conceptual link relates these two entities to one another.
- Two or more image schema patterns are formed when the pairs of synonymy or hyponymy occurs in two different sentences. Thus, complex image schemas are involved in these constructions. However, image schema theory provides objective justification for the metonymy relation between metonymic forms. The schematic pattern adopts a suitable form of the metonymic relation.

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