

QUALITATIVE EMBODIMENT IN ENGLISH
ARCHITECTURAL DISCOURSE:
CONCEPTUAL METAPHORS AND THE VALUE JUDGEMENT OF SPACE



A Dissertation

Presented to

Facultad de Letras

Universidad de Castilla-La Mancha

Ciudad Real, España

In Fulfillment of

the Requirements for the Degree

Doctorado En Inves. En Humanidades, Artes Y Educación (R.D. 99/2011)

Presented by: Philip David Plowright

Supervised by: Dr. M^a del Rosario Caballero Rodríguez

July 2017

ABSTRACT

This dissertation explores the discipline of architecture through an examination of conceptual metaphors in the discourse genre of architectural theory using Conceptual Metaphor Theory as a starting premise (Lakoff and Johnson 1980; Grady 1997). While theory in architecture is known to be factional when used defend unsubstantiated positions of personal or small group ideology (Johnson 1994), the study of metaphors in texts that contain diverse viewpoints while sharing the common focus of addressing the situated building in physical space clearly presents shared values. The dissertation reveals that metaphors found in the architectural corpus have a consistent tendency towards certain types of knowledge and source domains regardless to the specific article or author. The source domains are dominated by concepts of human actions, human interactions and human capacities as well as various types of motion, all of which are mapped between domains as a way to understand the built environment. These metaphors are constructed on complex gestalts that consistently stress agency, personification, identity and control as important concepts. Metaphors using these concepts indicate a set of values and ways of thinking about the built environment that are not recognized, acknowledged or clearly addressed by architects.

ACKNOWLEDGMENTS

I would like to thank Rosario Caballero for allowing herself to be convinced that supervising this dissertation would be a good idea. It would not have been possible to pursue the particular aspects of my interests or enjoy the project as much as I have without her involvement. The initial tentative queries between us extended into more technical conversations, lectures on theoretical nuances, arguments over disciplinary positions, training in methodology, lines drawn over research standards and other rich discussions. However, beyond her academic and technical knowledge, it is her endless enthusiasm and positive attitude for which I am most thankful.

My own institution, Lawrence Technological University, has made many allowances to make it possible for me to pursue this dissertation. The Provost, Maria Vaz, past Dean Glen LeRoy, current Dean Karl Daubmann and past Associate Provost Alan McCord have supported my pursuit of this knowledge with great faith and acceptance. It is truly wonderful to be part of an institution that believes in quality education and the relationship between delivering that education and the continued development of its faculty.

Finally, I would like to thank Suzanne, Madeleine and Sophia for weathering moments of certifiability, mania, despondency, and other types of classifiable mental issues associated with dissertation completion. As always, family is the reason why life is so rich.

TABLE OF CONTENTS

ABSTRACT	I
ACKNOWLEDGMENTS	II
TABLE OF CONTENTS	III
LIST OF TABLES	VI
1. INTRODUCTION	1
1.1 Architecture as a source for metaphors	3
1.2 What is architecture?	11
1.3 Conceptual Metaphor Theory, primary metaphors and generalization	14
1.4 What this dissertation is about.....	20
2. ARCHITECTURE AND METAPHOR	25
2.1 Architecture is not a building	25
2.2 Architecture as an act of thinking.....	26
2.3 Text as the territory of architectural content	29
2.4 The presence of metaphors in architecture.....	34
2.4.1 <i>The historical change in the use of metaphor in architecture</i>	39
2.4.2 <i>Other aspects of metaphor in architecture and design</i>	43
2.4.3 <i>Why conceptual metaphor matters to architecture</i>	48
2.4.4 <i>A problem of domains in architectural metaphors</i>	51
2.4.5 <i>Architectural thinking and conventionalized conceptual metaphors</i>	53
3. DEFINING AND CLASSIFYING METAPHOR	58
3.1 What is a Metaphor?.....	58
3.2 Other cognitive concepts similar to metaphor.....	61
3.3 Metaphor dimensionality.....	64
3.3.1 <i>Image schemas</i>	67
3.3.2 <i>Primary metaphors</i>	68
3.4 Metaphor classification	71
3.4.1 <i>Cultural versus sensorimotor</i>	74
3.4.2 <i>Conventional versus novel</i>	79
3.4.3 <i>Resemblances and correlations</i>	82
3.5 Summary	86
4. RESEARCH APPROACH AND METHOD	88
4.1 Constructing a corpus	88
4.2 Metaphor identification	95
4.2.1 <i>Scope of metaphor identification</i>	98
4.2.2 <i>Polysemic, fossilized collocations and normalized terminology</i>	101

4.2.3 Metaphors with simile form	105
4.2.4 Metaphors using metonymic elements	109
4.2.5 Finding boundaries of metaphorical expressions	111
4.2.6 Clusters and megametaphors	114
4.3 Metaphor Coding	117
4.4 Summary	125
5. METAPHORS IN THE ARCHITECTURAL CORPUS	128
5.1 Source domains of architectural target subdomains	134
5.1.1 Source domains applied to the target ARCHITECTURE [PHYSICAL]	138
5.1.2 Source domains applied to the target ARCHITECTURE [ABSTRACT]	144
5.2 Metaphor cognitive schema and motivation	149
5.2.1 Image schema	149
5.2.2 Primary metaphors	154
5.3 Taxonomic classification of the corpus	161
5.3.1 Sensori-motor and cultural	162
5.3.2 Conventionalized and novel	167
5.3.3 Resemblance and correlation	172
5.4 Summary	178
6. ARCHITECTURE AND ANTHROPOMORPHIC METAPHORS	183
6.1 The human body and architecture	184
6.1.1 Building enclosure as skin or clothing	186
6.1.2 Extending body metaphors through external systematicity	191
6.2 Architecture, agency and human actions	198
6.2.1 Causation	200
6.2.2 Control	206
6.3 Personification	211
6.4 Summary	218
7. EVALUATIVE CONNOTATION AS EMBEDDED VALUES	222
7.1 Axiology, image schematic domains, and evaluation	228
7.2 Primary metaphors and axiology	232
7.3 Evaluation in situated metaphors	235
7.3.1 Control as Value	239
7.3.2 Truth in identity as value	248
7.4 Summary	257
8. DOMAIN SPECIFICITY AND ABSTRACTIONS	260
8.1 Is BUILDING IS A BUILDING a metaphor?	261
8.2 Suspension of scale between domains	276
8.3 Conceptualizing the physical in terms of the nonphysical	283
9. CONCLUDING REMARKS	290
REFERENCES	298
APPENDIX A: ARCHITECTURAL THEORY CORPUS	316
APPENDIX B: METAPHORS AND IMAGE SCHEMAS	318
B.1 Image Schemas	318

B.2 Conceptual Metaphors (non-evaluative).....	322
B.3 Conceptual Metaphors (evaluative).....	328

LIST OF TABLES

Table 1. Image schema codes and classification	123
Table 2. Decomposition of example (74)	125
Table 3. Target domain distribution in corpus (by quantity)	128
Table 4. Source domain distribution for architecture	135
Table 5. Source domain distribution by quantity in ARCHITECTURE [PHYSICAL].....	138
Table 6. Summary of top occurrences of source domains to ARCHITECTURE [PHYSICAL]	140
Table 7. Summary of top occurrences of metaphors to ARCHITECTURE [PHYSICAL]	143
Table 8. Source domain distribution for ARCHITECTURE [ABSTRACT]	144
Table 9. Summary of occurrences of source domains to ARCHITECTURE [ABSTRACT]	147
Table 10. Summary of top occurrences of metaphors to ARCHITECTURE [ABSTRACT]	148
Table 11. Top schema categories in architecture by quantity	150
Table 12. Image schemas in architecture	151
Table 13. Primary to conceptual metaphor hierarchy (by quantity)	155
Table 14. Metaphor taxonomic categories	161
Table 15. Primary Sensori-motor versus cultural metaphor sources	162
Table 16. Sensori-motor versus cultural metaphor distribution.....	164
Table 17. Focus of sensori-motor metaphors by occurrence volume	164
Table 18. Focus of cultural metaphors (by quantity)	165
Table 19. Conventionalized versus novel metaphor sources	167
Table 20. Primary Sensori-motor versus cultural metaphor distribution.....	168
Table 21. Common source domains for novel metaphors	169
Table 22. Common source domains for conventionalized metaphors	170
Table 23. Correlations and resemblance metaphor motivations	172
Table 24. Comparative population of correlational and resemblance metaphors.....	174
Table 25. Variations and extensions of the human body as metaphorical source	185
Table 26. Evaluative sources in architectural corpus metaphors (by quantity)	223
Table 27. Analysis of the compound hierarchy of example 113	225
Table 28. Analysis of compound hierarchy of in example 122	251
Table 29. Analysis of compound hierarchy in example 123	255

1. INTRODUCTION

There have been some general studies on the relationship between language and architecture by architectural theorists and historians that addressed metaphor (Onians 1992; Hollander 1996; Forty 2000; Clarke and Crossley 2000; Whyte 2006). On the other hand, there are only a few limited studies of architecture from outside the discipline which engage it as a socio-professional group and fewer still that use metaphor as a key tool to understand that community (Karatani 1995; Mansilla 2003; Caballero 2006, 2011, 2012, 2013). One of the most comprehensive studies exploring architecture as a target domain was performed by Caballero (2006). Working from Cognitive Linguistics and Genre Theory, Caballero examined architecture as a discourse community, applying metaphor analysis based on Conceptual Metaphor Theory (henceforth CMT) to the genre of architectural reviews and finding metaphor as a "conceptual and a socialization tool, and one that is partly acquired and effectively put to work through discourse interaction" (Caballero 2006: 231). The research focused on the relationship between image and cognitive metaphors as well as issues of metaphoric motion found within a discourse community. However, while the study used architecture as a focus, the core of the project was to introduce methodology that conjoined cognitive and discourse perspectives.

The architectural research community has not substantially explored the role of metaphor in the professional discourse of architecture nor considers metaphor a serious aspect of architectural knowledge. This is a curious fact when considering that much of the

knowledge used in the discussion and design of architecture is not knowledge that comes from within the domain of architecture but, rather, is borrowed from other domains of experience. In fact, the reliance on external sources of knowledge is well recognized within the architectural discipline by theorists and historians who acknowledge the crossover between architecture and other disciplines as a central operation in the construction of architectural knowledge and meaning (Johnson 1994; Tschumi 1994; Hollier 2000). Part of the struggle for architects in defining their own discipline is that so many terms that make up the core discussions in architectural discourse are not architectural but transferred from other disciplines such as “physics, mathematics, biology, anthropology, psychology, sociology, genetics, literature, and electronics” (Johnson 1994: 44). In recent years, new terms have entered architectural theory based on the source domain of biological evolution and “words such as species, iteration, generation, variation, mutation, and autopoiesis have by now become commonplace” in the language of architecture (O’Donnell 2015: 13).

The introduction of non-architectural terminology and concepts is a significant feature of architectural discourse and how architectural theorists discuss issues within the discipline is often by importing language and concepts from other fields of knowledge. Architecture is considered to “always represent something other than itself from the moment that it becomes distinguished from mere building” (Hollier 2000: 190). Of course, the very act of “not being itself” brings a crisis into architectural theory. Some architectural theorists are concerned that the introduction of non-architectural terminology is *required* in order to have any meaning and see this action as a threat. A later 20th century designer and theorist summarized this position by lamenting, "after more than half a century of scientific pretence, of system-theories that defined it as the intersection of industrialization, sociology, politics and ecology, architecture wonders if it can exist without having to find its meaning or its justification in some purposeful exterior need" (Tschumi 1994: 33). Other theorists see the sharing of terms

and ideas across disciplines as natural rather than problematic as it aids in the labelling and discussion of “elusive concepts” by architects (Johnson 1994: 45). Indeed, a cognitive linguist would immediately recognize the process of applying information from one domain of knowledge to another domain of knowledge as being the operation of a cognitive metaphor, and would claim that rather than being only applied to deep theory or significantly problematic for discipline identity, it is a natural part of cognition and language use that permeates all aspects of architecture.

This dissertation will examine central texts representing deep disciplinary discussions in architecture to address this very issue. Through the analysis of conceptual metaphors present in the documented language of architecture, the question becomes what patterns and use of metaphors are present and how they support the construction of meaning in the built environment if, as architects claim, the transfer of knowledge from other domains is critical to the operation of architecture.

1.1 Architecture as a source for metaphors

Architects understand architecture as different to mere building. Outside the discipline, however, the term *architecture* is equated with *building* and associated with metaphorical expressions through source domains referencing objects and concepts associated with the construction of buildings. There are well documented uses of buildings, building elements and built environment concepts used in a non-literal application as part of language, aligning with the basic understanding of conceptual metaphors as the mapping of “concrete experiences [to] allow us to construct highly abstract and elaborate concepts” (Lakoff and Johnson 1980: 106). The major physical architectural source terms used in other domains mostly refer to the parts of a building or notions of statics (structure as a negotiation of forces such as gravity). The terms include *plan*, *structure*, *keystone*, *foundation*, *pillar*, *column*,

window, door, stronghold, support, and stability (Onians 1992; Johnson 1994). Some of the most prevalent mappings, the ideas of the *foundation, plan* and *physical structure*, underlie many concepts in the English language but also have a historical basis in Greek, Hebrew, Latin and other classical languages (Onians 1992; Hollander 1996).

Throughout history and into contemporary times, foundational ideas and arguments in mathematics, philosophy and literary criticism have used metaphors based on architectural construction with examples found in the writings of Plato, Descartes, Kant, Kierkegaard, Hegel, Gödel and Wittgenstein (Karatani 1995). Architecture is a metaphor for order, arrangement and authority in Aristotle, Plato and Descartes, i.e. as terms that “underpin the foundations of metaphysics – to structure knowledge” (Till 2007: 134). Even literature has normalized architectural concepts as conventionalized metaphors. For example, the word *plot* originally came from the term for physically bounded location (architects call this a *site*), which came to mean *building plan*. From there it was transferred to the spatial concept of director’s blocking plan as a physical event, to finally mean the organization of a story as a conceptual idea (Hollander 1996: 19). In Classical Greek language, building terms were used as sources for metaphors of the conceptual organization of knowledge. Onians (1992: 200-201) relates how Plato considered knowledge (*episteme*) to be “that which you can stand on” and considered supported arguments to have been “built on” a hypothesis which is “placed under” that argument. Slightly earlier than Plato, Lattimore (1947) introduces references found in Pindar to the personified concept of Law as the “[...] sure foundation-stone of cities” (Lattimore 1947: 37) and words as the foundation-stone of a “wise argument” (Lattimore 1947: 62). Unlike the Greeks, the priority for the Romans was the organization of social and political life rather than the structure of knowledge. Word order is far more important in Latin than in Greek (Onians 1990: 202) and the building metaphors change accordingly. Sentences are considered to have been *piled up, built* or *constructed* from words

(Onians 1992: 202). This transfer between architecture and language can also be found cross-linguistically; for instance, *stanza* is defined as a large public room in Italian, yet refers to a poetic set of contained sentences in English (Hollander 1996: 20).

In contemporary theories of metaphor, such as CMT, references to architecture are identified in the early work of Lakoff and Johnson (1980) when they recognized buildings as source domains for two of the conceptual metaphors they presented: AN ARGUMENT IS A BUILDING and THEORIES ARE BUILDINGS. While Grady (1997) has shown that THEORIES ARE BUILDINGS is connected to a larger network of related mappings under the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE, the built environment is readily used by people to understand more abstract concepts. Looking at common source domains rather than examples of particular conceptual metaphor, Kövecses (2010: 19) lists “Buildings and Construction” in his survey of frequent sources and gives the examples of:

- (1) A *towering* genius
- (2) He’s *in ruins* financially
- (3) She *constructed* a coherent argument

The above list stands as a good example when the physical presence of building (*towering*) is considered alongside building states (*ruins*) and physical actions (*constructing, building, support*) as part of the BUILDINGS AND CONSTRUCTION source domains, which has also been considered to be the domain ARCHITECTURE (Caballaro 2006, 2013). Regarding the terms above as concepts associated within a domain in the cognitive linguistic tradition (Clausner and Croft 1999), the main question to answer is whether it is possible to clearly define singular, fixed and persistent boundaries among domains.

The normative definition of a domain in cognitive linguistics is based on characterizing the idea as a container used to isolate “the background knowledge for representing concepts” (Clausner and Croft 1999: 3). It has a tendency to be focused on

“particular categories of human experiences and perception” (Grady 1997: 71), prioritizing common experiential domains such as travel, physical location, temperature sensations, buildings, money, seeing and so on. This understanding of a domain is built from Fillmore’s (1982/2006) use of *frame* as a powerful example of domain structure and suggests that there is necessarily a shared relationship between the concepts identified as part of a domain (i.e. hierarchy). Examining the above list, Kövecses (2010) understands all the terms as all part of the BUILDING AND CONSTRUCTION domain with (1) *towering* as the verbalization of the noun meaning a tall building mapped to intellect, (2) *in ruins* referring to mapping the source of a collapsed building onto the target domain of finances and (3) *constructed* as a concept of assembling a building mapped to human discourse. This follows a traditional position in CMT (Lakoff and Johnson 1980; Clausner and Croft 1999: 198) which considers buildings as the source domain behind all references to structural integrity (*collapse, buttressing, shaky, shore up, foundations*), spatialization of concepts (*basements, attics, backroom*), and objects considered to be a part of a building (*cornerstones, columns, windows*).

If we examine the examples a little closer, there are some questions about how domains are identified and terms associated with them. The questions raised are not ones of basic understanding but involve the application and association of concepts – essentially what defines a domain boundary, how a concept can be said to be within it, and how useful is it to define the underlying meaning that the metaphor constructs. One response to this issue is to abandon the traditional definition of domain as it has been claimed to be not satisfactory for many examples of metaphor (Grady 1997: 71). Instead, the source domain is replaced as a priority to focus on experiential motivation of knowledge through *primary scenes*. A primary scene is defined as “a cognitive representation of a recurring experience type which involves a tight correlation between particular aspects of the experience” Grady (1997: 86). In this approach, a rich domain, such as BUILDINGS, is less important and less useful than “basic,

locally-defined experience-types” (Grady 1997: 98). The three examples above might be part of BUILDINGS AND CONSTRUCTION, but the first example would be redefined as (1) QUANTITY IS VERTICAL ELEVATION, while examples (2) and (3) are understood as variations of (LOGICAL) ORGANIZATION IS PHYSICAL STRUCTURE. The explicit source domain becomes less important than the underlying primary metaphors – not for the least reason that the domain reference vanishes from the discussion. In addition, the domain becomes less important as the content from a rich domain can be replaced by content from any other rich domain if it satisfies the purpose of the primary metaphor. In this way, any expression that references PHYSICAL STRUCTURE can replace an explicit reference to a BUILDING term and still satisfy the metaphorical intentions.

If one accepts the role of domains, which have been central to the CMT tradition since its inception, there are issues considering *towers*, *ruins*, and *structure* as being part of a single rich domain. First, *towering* (1) could be from the source domain of buildings adapted from the noun referring a tall structure (historically a military defensive structure) but the verb form of this term has meant “to rise high” and to “soar above” since the 15th century, placing the term in the domain of SPATIAL LOCATION. Likewise, the original sense of *ruin* (2) was to be in a state of collapse (15th century) and only later was it applied to buildings (16th century) so the term already is a conceptual metaphor when applied to a building with buildings being the target domain rather than the source domain. In this way, *to be in ruins* and *to be a ruin* share the same source domain and the concept should not be considered to be based on the BUILDING domain at all. In last example (3), the act of construction is declared to be within the domain of BUILDINGS as it is sourced from the concept of putting a building together. However, it is not just buildings which are constructed but any physical object that is an assembly of parts and *construction* is a concept that refers to the physical action of bringing pieces together into a new whole, rather than clearly identified building elements such as

cornerstones, columns and doors. The discussion brings some concern that a domain is a clearly defined category when considering exclusivity of association – i.e. a concept has a clear and dominant relationship within a cluster of other concepts that associates its belonging with only one knowledge domain.

The present dissertation's focus on architecture as a target domain on the one hand, and the abundant use of architectural terms (i.e. concepts and objects associated with buildings) as a source domain on the other, makes it necessary to be able to clearly define what the notion of domain encompasses. One question would be the difference between BUILDING and ARCHITECTURE. Are these two terms referring to the same content, are they different but related areas of knowledge or, more likely, is there a hierarchical relationship between them? As ARCHITECTURE should encompass all things associated with buildings, the BUILDING domain could be considered as a subdomain to architecture. This is supported by the larger priorities of the architectural discipline going beyond simply physical assembly and construction of buildings but opens questions if the identification of these other knowledge categories. Some architectural theorists would consider any information that addresses space, spatial movement or force dynamics to be claimed as architectural knowledge and, therefore, as belonging to the domain of ARCHITECTURE (i.e. as 'literal'). Further claims would position architectural knowledge as playing a central role in human thought (Onians 1992). Here we need to address concept hierarchy as architects would assert exclusive source domain ownership over generic concepts of structure, construction or support, such as *reinforcement*, *collapse*, *to strengthen*, *to build*, or *to erect*, as well as image schemas of SPACE, SPATIAL MOTION and DYNAMIC FORCES such as *gravity*. However, these concepts could be argued to be more central to many other, non-architectural domains (i.e. is gravity part of ASTROPHYSICS or structure more properly associated with ENGINEERING?). The discussion above does raise a concern over how domain association and hierarchy is recognized.

The question raised by considering the territory of knowledge that defines a source domain is whether there is a single domain of building or if there are multiple source domains such as (a) ARCHITECTURE, (b) BUILDINGS, (c) A CLASS OF OBJECTS IN THE BUILT ENVIRONMENT, (d) PHYSICAL ACTIONS RELATED TO ASSEMBLY, and (e) ENVIRONMENTAL FORCES (gravity, stability or instability). Some of these concepts are more complex than others and the content of the domains (d) and (e) operate as barely more than image schemas. Grady's proposal, addressed above, diminishes the importance of domains, considering domains as not as important as primary scenes (1997: 71) or involvement of 'superschema' (Grady 2005). Both theories affect targets as well as sources but take into account Haser's (2005) critique of domains in CMT as arbitrary to the researcher. We also have to remember that metaphors are in the realm of concepts while domains are 'territories' of objects and relations.

If we consider everything from building elements (columns, windows), building types (prisons, bank, house), building states (ruins) and environmental forces (effects of gravity, sun or wind) to be associated with architecture, then as a source, ARCHITECTURE is a meta-domain that includes other domains such as BUILDING, PHYSICAL ACTIVITIES, ENVIRONMENTAL QUALITIES, SPATIAL TERMS and so on. Accordingly, it should not be surprising that there is a very common presence of terms associated with architecture in contemporary discourse as there is also a very large range to those concepts. Many of these terms have been used for so long that they have also become conventionalized, i.e. are no longer understood as metaphors or seen as belonging to architecture. Indeed, architectural terms in conventionalized metaphors are found unrecognized even in writings by architects and architectural theorists, as illustrated in the following examples:

- (4) Laying the foundation for the work's general *infrastructure* of tensions (Kwinter 2008: 166)

- (5) The novel and the poem, though each an act of communication, are *windows* to a reality (Benedikt 1987: 8)
- (6) The mental space that we have built for our thoughts then turns into a *prison* (Ballatyne 2011: 48)
- (7) If design is the *bridge* between the immaterial world of ideas and the material world of objects (Wigley 1998: 6)

In architectural texts, conventionalized metaphors use building elements or building types for application to the organization or development of ideas, aligning with Grady's proposal (1997) that buildings are just one of many source domains that are based in using the organization of physical elements to understand abstract elements (e.g. *foundation, support, support, design, architect, framework*). However, as shown above, building terms also occur in references to abstract ideas when they are considered through concepts of space and containment (e.g. *door, window, room, prison, theatre*) as well as in relationship to social status and prominence (e.g. *columns, cornerstones, keystone, plinth*). When we consider thinking as a type of mental space, i.e. a container, the metaphor can be further elaborated and portray thinking as a type of room or building like the "prison" in example (6), a gulug, a stage, and so on. Different points of view or experiences can be considered discrete conceptual spaces – and, as such, they can be connected by architectural elements like *doors, windows* or *corridors*. Looking explicitly at references to the built environment, we also find terms referring to other objects such as "bridges" (7), *cul-de-sacs, reservoirs* and *junk heaps* used in the same way to refer to conceptual ideas. These might all be considered as part of BUILDINGS AND CONSTRUCTION but not traditionally part of architecture. Rather, bridges and reservoirs would be within the domain of CIVIL ENGINEERING while cul-de-sacs would be considered a concept in either URBAN DESIGN, CIVIC INFRASTRUCTURE ENGINEERING or URBAN POLICY. Junk heaps might be part of the domain of URBAN policy if considered as part of zoning enforcement, SANITATION if considered as a service and process, or BUILT

ENVIRONMENT if considered as an object. Buildings themselves could be considered to be either in the domain of ARCHITECTURE or ENGINEERING depending on the cultural use of the building (churches are architecture; warehouses are engineering), or if looking at the building technically (engineering) or socio-culturally (architecture). Even more schema-based concepts such as gravity as a force could be in the domain of PHYSICS, or even ASTROPHYSICS rather than STATICS or BUILDING STRUCTURES.

This limited survey has been a brief introduction to some issues that need to be clarified from the very beginning if we are to understand architecture as a source domain since the issues open some concerns about how architecture is considered as a *target* domain. When addressing architecture, the question becomes whether this discipline forms a domain that includes such a wide range of topics as buildings, building parts, physical forces found in the physical environment or, even, phases associated with the lifespan of a structure. One might say that despite a general understanding that architecture is equivalent to building and the many references to building in metaphor literature (Lakoff and Johnson 1980, 1999; Talmy 1988; Lakoff et al. 1991; Grady 1997; Kövecses 2010), there is not a clear understanding of what constitutes architectural knowledge as a source domain, and there are few studies in cognitive linguistics of architecture as a target domain.

1.2 What is architecture?

Perhaps one of the issues with architecture having minor attention as a target domain in Cognitive Linguistics comes from a lack of understanding of what architecture is, as suggested by the observations of imprecise domain identification listed above. Non-architects would consider the term *architecture* to be synonymous to *buildings*, and there is a general attitude that buildings and building elements are terms from the domain of architecture (Conway and Roenisch 2005; Ching 2007). This means that when we talk about architecture,

we are only talking about buildings, discussing their physical characteristics, material properties and structural organization. However, for architects this is not the case and buildings are simply one of the most visible results of architectural thinking, not the subject itself. Considering architecture as the physical construction of buildings fails to consider the difference between disciplinary knowledge and the physical manifestations of that knowledge. For example, while it could be understood that medicine is defined as the physical maintenance of human health, the discipline of MEDICINE is an intellectual exploration into the nature of health. Likewise, within the discipline of ARCHITECTURE, buildings are simply the traditional *outcome* of architecture, i.e. are expressions of a body of knowledge and experiences “transformed into models or rules [...]” (Carpo 2001: 12). Essentially, architecture is not a building but it is involved in relating buildings with human cognition and experience as a communicative act, meaning that it is rhetorical (Buchanan 1985; Coyne et al. 1994). As rhetoric, “one might simply say that whatever is uttered or expressed by an element, type, or actual piece of design can be recovered only in translation, and into very metaphoric language at that” (Hollander 1996: 26). Though metaphor is widely recognized as an essential aspect in how architecture communicates, the differences between disciplinary and layperson understanding of the domain is obscure.

One of the best ways to consider a building is simply that it is a vehicle through which an architect expresses ideas, and most of the ideas that shape the building are not generally about the building as an isolated physical object. Rather, the discipline of architecture involves ideas involved in relating objects to people including the relationship between the human body, space, and objects (with their properties), bodily movement, human events, cultural identity, social identity and social interactions. All these events are what architects call *sited*, and linguists would call *situated*, meaning that they occur within a particular context and in relation to particular physical forms (Snodgrass and Coyne 1996). It is this

context and the possible resultant forms which become the focus of architectural exploration and forms the content of the architectural domain of knowledge. It follows that much of the knowledge used by architects, that which is expressed through language, falls out of the strictly formal realm of building construction. When that knowledge is considered as a source domain to be included in the architectural design process, it would be based in how humans interact with each other and their environment, i.e. the social sciences, such as psychology, sociology, anthropology, and cultural theory. Technical knowledge used in architecture can be found in other physical disciplines as well, primarily construction management, engineering and its subfields (material, civil, mechanical, etc.). In addition, architectural theory has long associated architecture with the fine arts (painting, sculpture, literature, music and poetry) making artistic priorities also architectural priorities. All of these areas should be present as source domains within architecture.

For Cognitive Linguistics, understanding the conceptual nature of architecture as well as the role of other domains of knowledge in the construction of meaning leads to three points to consider, namely:

- architecture is fundamentally a cognitive engagement with the environment;
- as a cognitive act, the primary content of architecture is held in language-based modalities; and
- non-disciplinary content is prevalent in architecture, which makes conceptual metaphor an important tool for understanding disciplinary values in how this content is applied.

The study of architecture through examining associated domains and knowledge structures as made available through metaphor studies and CMT should be interesting for both architecture and cognitive linguistics. For architects, it may allow access to primary informational sources, major priorities and discipline definition in an area that it is currently rather obscure. For cognitive linguistics, the fundamental nature of architecture as the relationship between

human cognition, physical objects and the space they occupy may address foundational aspects of this contemporary theory, providing further analysis and investigation to current knowledge in the field. As architecture engages issues of presence, movement and motion, circulation as pattern of movement, sequence, procession and representation, any study of discourse in this area will correlate sensorimotor values with cultural concepts and human value structures. As such, it is a prime area to study the conceptual complexity behind the linguistic expressions of metaphor.

1.3 Conceptual Metaphor Theory, primary metaphors and generalization

Conceptual Metaphor Theory (CMT) is a contribution to Cognitive Linguistics that understands the organization of language as a direct reflection of how thoughts are structured. As such, it allows access to thinking structures of the human mind by understanding metaphor as a central operation in human cognition rather than simply a linguistic embellishment or stylistic flourish. Understanding metaphorical language as a systematic expression of ways of thinking positions CMT as an important tool in understanding the world. This section introduces aspects of the cognitive structure of metaphors which will be expanded in Chapter 3. It is important for this dissertation to consider the larger organization of metaphorical thinking as the generalization allows access to patterns of presence of primary metaphors, and thus primary motivators, in architecture. It is also necessary to point out how one primary metaphor modifies or builds upon another when considering their involvement in inferred meaning. These points lead to more technical discussions of the systematicity of information mapped between source and target domains, central commitments found in CMT and the location of qualitative information as part of metaphorical structure and information hierarchy.

A conceptual metaphor is the “*understanding* one conceptual domain in terms of another conceptual domain [italics mine]” (Kövecses 2010: 4). While many scholars might take issue with the term *understanding*, it is an important concept that places the conceptual metaphor as a major operation in meaning and human value structures. Lakoff and Johnson (1980) theorize that there is a pattern of concrete-to-abstract mapping that is fundamental to conceptual metaphor, considering that we use metaphors to map physical knowledge as a way of understanding abstract concepts. Regardless to whether this pattern can be shown to exist or not, it does not diminish the role of metaphor in human understanding as a conceptual tool to structure and understand real experiences. In addition, the generation of a conceptual metaphor is considered to operate through similarity (whether real or created by the metaphor itself), that creates a dependence between source and target domains (Lakoff and Johnson 1980: 147) which is a systematic correspondence (Kövecses 2010: 7) and includes inferential structure (Grady 1997: 7). The similarity theory of metaphor comes from an Aristotelian position of metaphor as a connection between two dissimilar concepts associated through some key shared feature and has been challenged recently as not being empirically consistent. If we follow the embodied cognition theory, then it is more probable that the association between domains and concepts is predicated on physical human experience structured through the engagement of the body in the world (Johnson 1987, 2007; Grady 1997; Feldman 2006). A simple example is that Concept C in Domain D becomes known and comprehensible because of the mapping of knowledge (which includes values) from Concept A from Domain B where Concept A has commonality to human experience and associated values such as inherent sensorimotor or body level knowledge. This is because one of the keys to how metaphors operate is that known and readily understood knowledge is used to allow comprehension of less known, unknown or more complex knowledge.

CMT positions metaphor as a central operation in human thought and extends this influence to all parts of human experience. This is done through one of the central assumptions of cognitive linguistics – that there is a shared basis and a fundamental unity to all cognitive facilities regardless to modality. The assumption is codified into cognitive linguistics as the Cognitive Commitment (Lakoff 1990; Gibbs 1994) and is based on empirical results from multiple disciplines studying human cognition. Through the acceptance of this commitment, “the formal structures of language are studied not as if they were autonomous, but as reflections of general conceptual organization, categorization principles, and processing mechanisms” (Gibbs 2006: 3). This commitment requires consistency between cognitive modes – things known in one area of study of human cognition should align with other areas of cognitive study. Beyond just areas of research, there is the further extension of this commitment to the position that all human knowledge is embodied and the same cognitive functions involved in concrete, physical experiences are also used for speech, abstract thought and conceptualization (Carbonell and Minton 1983; Johnson 1987).

A second commitment for cognitive linguistics is the “The Generalization Commitment” (Lakoff 1990) and an aspect of this commitment is of interest to this dissertation. The commitment requires the search for general principles of how language operates between all areas of study – such as in syntax, semantics, pragmatics, morphology, phonology and so on – rather than treating those areas as discrete and separate unique instances. The original point of the Generalization Commitment was to introduce an attitude towards data and research results that would allow comparisons between subfields of study within linguistics. The purpose of the commitment is to produce outcomes in a shareable, abstracted format that would subvert traditional silos of knowledge ownership and allow for greater success in understanding core operations that touch all aspects of linguistic study. The

premise of generalization stresses that the results of such outcomes must be cognitively real rather than just theoretically real – meaning that although something might make logical sense, there is the research requirement of empirical evidence to support that logic. Anything that is inconsistent with empirical evidences needs to be abandoned regardless to how seductive the theory might be.

The need to generalize and the commitment to a shared cognitive basis of experience leads to a discussion of the cognitive structures and prototypes involved in judgement and comparison (Croft and Cruse 2004). It follows that a goal for Cognitive Linguistics is to align categories with prototype structures and to organize those structures “in terms of basic-level, superordinate and subordinate levels” (Lakoff 1990: 41). As categorization operates in the organization of entities (i.e. superordinate level → basic level → subordinate level), it has also been shown that generalization and categorization operate in conceptual metaphor as well. Grady (1997) has decomposed basic level metaphors into more primary metaphors with increasing generality creating a layered association between concepts and categories. These primary metaphors are grounded in everyday experiences and are based in sensory-motor experiences. If we consider the classic metaphorical example “Your theory is *constructed* out of cheap *stucco*” (Lakoff and Johnson 1980: 110), there is something quite interesting happening. While we can analyse this sentence for its structure, finding that it is based on the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE with specific mappings between “theories” and “buildings” instantiated by *constructed* and *stucco*, there is also a qualitative judgement present that is not addressed by the identification of source and target domains. It is not just that the abstract concept of a theory is made more understandable by relating it to a the more familiar building, but that the theory is being built out of the specific reference to “cheap stucco”. While the qualitative aspect might seem obvious through the adjective *cheap*, in fact the sentence would still present a qualitative

position without this word. If one was to say, “you are constructing your theories out of stucco”, it activates ideas of:

- lack of structural capacity since stucco needs a frame to be installed,
- thinness (or lack of thickness/depth) as stucco is applied as a building cladding system in thin layers,
- low cost as it is a relatively inexpensive cladding system.

What the speaker/writer means by this mapping is that the theory is not any good and the use of the adjective “cheap” simply drives the point home rather than changing the sense of the statement. Since metaphor is a tool for comprehension, it should not be surprising that qualitative aspects are transferred via this mechanism. In addition to the immediately visible metaphor THEORIES ARE BUILDINGS and the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE, there is a less obvious metaphor present in the expression that uses cultural knowledge of material and construction systems, LACK OF STRUCTURE IS NOT GOOD. While the general idea of collapse as a negative event might be connected to experiential, sensorimotor knowledge, in this example there is the requirement of additional cultural knowledge (i.e. what is “stucco”?) in order to infer meaning. In addition, while LACK OF STRUCTURE IS NOT GOOD has been formatted with the standard small capitals of a conceptual metaphor, the question becomes whether this is really a metaphor or some other type of cognitive association based upon image schemas. The central question would be if there is any domain transfer occurring, (i.e. is *good* and *bad* part of a domain of knowledge?) or if good and bad are, like image schemas, an aspect of “experiential gestalts that never get encoded as explicit mental representations” (Gibbs 2005: 114). While it is not the purpose of the dissertation to answer this question at an empirical level, I hope the corpus data will provide some focus on the issue of qualities versus structure (Johnson 2005), in this case explicitly based on architectural values.

The idea of goodness and badness has been part of CMT since its inception, but always as a discrete metaphor with some basic patterns, the major two being between the pairs UP / DOWN and LIGHT / DARK. From these patterns, Lakoff and Johnson (1980: 115-116) categorised conceptual metaphors with an explicit qualitative dimension to their inference pattern as “orientational metaphors” (e.g. GOOD IS UP / BAD IS DOWN, and HAPPY IS UP / SAD IS DOWN). The Master Metaphor List (Lakoff, Espenson and Schwartz 1991) extended these conceptual metaphors and several more were identified by Grady’s survey of primary metaphors (1997). These metaphors clearly meet the pattern of originally identified by Lakoff and Johnson including a clear biological impetus behind the association – things that are light (or bright), high and clean are good things; things of which we like the smell or taste are good. The qualitative judgement of these metaphors is based on the correlation “between the cleanliness of objects we interact with (e.g., food) and our evaluations of them, based on their appeal, healthiness” (Grady 1997: 292) as aspects of physical human survival.

What is slightly problematic is that not all primary metaphors identified by Grady are actually primary metaphors as many can be decomposed by at least one more dimension. When this occurs and the more general identification of association between two domains is listed, the qualitative judgement disappears as an explicit statement. If we take HAPPY IS UP as an example, this could be a basic level conceptual metaphor that can be identified as a more specific instance of the subordinate level EMOTION IS RELATIVE HEIGHT. The primary metaphor would generate any instance of a relationship between height and emotional well-being including SAD IS DOWN. In the primary form, though, the relationship between things being up as happy and things being down as sad is absent since the specific qualitative value is not part of the metaphor structure. Another example would be the basic level conceptual metaphor GOOD IS BRIGHT / BAD IS DARK, a correlation “between light and safety, dark and danger” (Grady 1997: 292). Again, this metaphor has not been decomposed into its essential

state and there needs to be a clear definition of what *good* and *bad* mean. Just as happiness is part of the domain of emotions, good and goodness can be considered to be anything that benefits us, although it is difficult to be much clearer than this. This would make GOOD IS BRIGHT / BAD IS DARK a composite of the subordinate level primary metaphors (PHYSICAL) BENEFIT IS (ABSTRACT) BENEFIT and BENEFIT IS DEGREE OF LIGHT. Again, this way of coding the metaphor drops the qualitative aspect as a clear expression and leaves the outstanding question to whether emotions can be structured as a defined category into a domain of constructed knowledge as it seems that this territory is not formed in the same way as, say, BUILDINGS.

Considering metaphors as vehicles for applying meaning, their use in subjective judgements and the presence of systematic correspondences, there must be the ability to understand qualitative content at a structural level or at least identify primary qualities engaged by metaphor in any discourse community. This is already implied above as many of the primary metaphors have qualitative factors associated with them once they become more specific basic level expressions. These seem to be mostly connected to body knowledge yet “Your theory is *constructed* out of cheap *stucco*” has a clear cultural relationship that is needed in order to infer any meaning from the metaphor.

1.4 What this dissertation is about

With these points in mind, the purpose this dissertation is to explore values in architecture that exist but are not recognized or clearly addressed in that discipline (i.e. are latent values) by examining texts dealing with architectural theory following CMT as a starting premise. My intentions are not to address mental processing or on-line language comprehension but to use the examination of structural and qualitative aspects of conceptual metaphor to explore knowledge in the discourse community of architecture, putting myself in alignment with the

original goals of Lakoff and Johnson (1980). For architecture, this piece of research may bring some clarity to the fundamental knowledge, shared priorities and qualitative aspects of the discipline through linguistic analysis while still recognizing the ability to hold diverse and even contrary ideological positions and values. For Cognitive Linguistics, the evidence of metaphor used in a situated setting may allow for a structured investigation of the cognitive dimensions involved in conceptual metaphor construction. Many of the linguistic examples used to defend CMT have been criticized to be conveniently fabricated, circular or lacking evidence of their claims to support cognitive processing (Haser 2005; McGlone 2007). However, regardless of the fights about the exact domain relationships in metaphor (e.g. IDEAS ARE FOOD versus IDEAS ARE OBJECTS), I support the position that “[m]etaphor is always going to be about both thought and about language forms – it is therefore primarily about meaning (the relationship between the world, linguistic forms and underlying mental representations)” (Charteris-Black 2004: xiii).

This dissertation uses decomposition analysis (Grady 1997) to explore conceptual metaphors found in architecture texts in order to address the following research questions:

- What patterns are found in the conceptual metaphors of this discourse community as evidenced through the genre of architectural theory?
- Does metaphor analysis allow access to the identification of priorities in architecture?
- How are metaphors in architecture structured, categorized and driven in terms of association between qualities, schema and other experiential knowledge?
- Is it possible to identify the placement of structure that transfers qualitative factors and, if so, what types of qualitative content are considered in architecture as evidenced through to metaphors?
- Is it possible to clearly define a domain of architecture as a knowledge area or is architecture simply a grouping of other domains?

In order to answer these questions, I have used a corpus of seminal architectural writings relevant to the current intellectual culture in the discipline and spanning the contemporary period of 1984 - 2013. The use of a corpus will allow the metaphorical analysis to be performed on real examples extracted from this discourse community and avoid issues of fabricated data. This dissertation is interested in exploring the hierarchical structure of conceptual metaphor and their associated qualities (Lakoff and Turner 1989; Grady 1997; Lakoff and Johnson 1999; Charteris-Black 2004) with a particular focus on what this might tell us about architecture as a conceptual discipline rather than a practice of constructing buildings.

Following these intentions, the dissertation is laid out in three parts. The first part, which includes this chapter, covers the scope and purpose of this piece of research and addresses architecture as conceptual territory focusing on the relationship between architecture and metaphor. Chapter 2 (*Architecture and Metaphor*) defines some boundaries to the type of information that should be present in architecture and defends a position that while architecture is associated with buildings, the major intellectual content is not about building assembly. This will become important when architecture is discussed as a target domain in the later chapters. Since the intellectual content for architecture comes from ideas that are associated with buildings, one of the primary tools to address those intentions and the resultant meaning in architecture turns out to be the metaphor. Considering the role of metaphor in architecture, the chapter examines the historic and explicit use in architectural theory as part of the development of ideas for buildings. The chapter concludes by addressing the cognitive involvement of humans with their environment through some evidence of architectural writing, illustrating that despite the hostility of some architectural scholars to language creating architectural fictions, there is clear evidence that conceptual metaphor maintains a place of critical importance in the understanding of meaning in architecture. The

next section presents the theory and method used in the development of the dissertation and includes Chapter 3 (*Defining and Structuring Metaphor*) and Chapter 4 (*Research Approach and Method*). Chapter 3 begins with a clear definition of a conceptual metaphor and then presents the current knowledge in cognitive linguistics and Conceptual Metaphor Theory on the structuring and categorization of conceptual metaphors. This chapter reviews the literature on metaphor hierarchy and dimensionality including theories of systematicity, ontological hierarchy and the degree of genericity including primary metaphors and image schemas. Three major categories resolve from the literature regarding taxonomy systems of classification and are presented in this chapter. Two systems of those categories are based on their association with the nature of the source domain (cultural versus sensorimotor; conventional versus novel) while the third is based on the nature of the mapping system (resemblance or correlational motivation). Chapter 4 introduces the principles behind selecting texts to form a corpus used for metaphorical analysis for this dissertation. It explains why the corpus has relevance as a representational sample of the genre of architectural theory and can be used to identify a general understanding of architecture by this discourse community. The chapter goes on to apply the metaphor definition presented in the previous chapter to identifying metaphors in the corpus, including examples of problematic situations when metaphor is involved with, or confused as, other closely associated cognitive structures such as similes, metonymies, and polysemes. The discussion then moves onto issues normalized, professional terminology in metaphor identification and finding boundaries to metaphorical expressions in a discourse context. Finally, the outlined theory of conceptual metaphor is used to present the research methodology for the dissertation based on a multi-tiered coding approach focused on categorization and decomposition.

The dissertation data is then presented and discussed in the final section which includes the next four chapters. Chapter 5 (*Metaphors in the Architectural Corpus*) presents

the corpus data generated from metaphor analysis focusing on the target domain of ARCHITECTURE. The metaphors in the corpus are then decomposed into their image schematic and primary metaphor associations looking at quantitative presence of cognitive schema. The metaphors identified in the corpus are then classified based on the nature of the source domain and the mapping system. After providing the quantitative breakdown of the corpus data, the next three chapters start to consider what some of the data means in terms of the questions posed in the introduction. Chapter 6 (*Architecture and Anthropomorphic Metaphors*) considers the dominance of metaphors present in architectural discourse that activate knowledge of the human body. The discussion starts with the human body as an object in its association with buildings and moves to the role of agency and human actions in understanding architecture. The chapter concludes with a discussion of personification and the projection of human identity onto architectural contexts. Chapter 7 (*Evaluative Connotation as Embedded Values*) addresses the question raised about the role of metaphors as explanatory values in architectural discourse. The discussion in this chapter relates the theory of axiology to image schemas and primary metaphors but then goes on to consider the effect of richer gestalts on evaluative interpretation. Chapter 8 (*Domain Specificity and Abstractions*) considers some observations generated by the research around the question of domain identification and patterns in metaphor construction.

The final chapter (*Concluding Remarks*) provides a brief summary of the research and the role of conceptual metaphor in architecture, as well as raising some points that might be considered by metaphor scholars.

2. ARCHITECTURE AND METAPHOR

2.1 Architecture is not a building

The understanding by architects that architecture is not a building frames much of the contemporary discourse found in the discipline through architectural theory (post-1968). The position challenges a normative understanding of architecture as simply the act of designing and constructing buildings. Within architecture, a clear definition of the scope of the discipline's content is resisted and continues to remain vague, stressing the difference between the *priorities* of a discipline and the *product* of that discipline. While (one of) the products of architecture *is* the building, this is an outcome driven by the purpose, priorities and intellectual focus of the discipline which engage issues of meaning, ontology and epistemology. Moving our focus off the product, architecture can be considered as conceptual content which is developed through an association with a building, or the drawing of a building, or the description of a drawing of a building (Bafna 2008: 559).

The intellectual growth of architecture developed over many centuries and the topics discussed in the late 20th and early 21st century are different from those in the preceding ones. It can be generally considered that architecture was a very practical matter and the role of architects in society was fairly straightforward up until the 1960s. The common understanding and the disciplinary understanding were in alignment: architecture equalled building and the two terms were seen as synonymous and referred to exactly the same thing. Architecture encompassed documenting a building's composition and appearance, its

technical detailing, and its urban arrangement. Seminal theorists such as Vitruvius Pollio (1914), Alberti (1485/1991), Durand (1802/2000) and Gropius (1965) reinforced this position, and used the definition “art of building” to mean that architecture was about habitable structures that express cultural values. The idea of habitation applies the responsibility of shelter to architecture and gives the discipline a foundation for its value structure, which stresses that architecture negotiates between physical forms that exist or are created in the world and the human body.

As architecture developed historically, it continued to relate the physical improvement of shelters and the social and cultural roles of those shelters. Architecture has always been understood to hold an important place in society as an expression of public identity, cultural achievement and societal values (Vitruvius 1914; Alberti 1486/1991), but as architectural design developed into what is considered the “Modern period” (1750 – present), architecture took on a much subtler social role. Rather than simply being grandiose gestures of cultural might, the discipline developed to have its practitioners pay more attention to the *social interaction* between people as critically informing how to shape buildings (Viollet-le-Duc 1990b). For instance, at the end of the 20th century Tschumi (1994: 4) described architecture as an expression of action, activity and politics, while Ballantyne (2002: 2) noted that buildings are "caught up in so many aspects of life" and expressed value at individual and social levels. To say it succinctly and compressing several thousands of years of history, once we moved past cave dwellings and lashed together tree boughs, buildings became socio-cultural products.

2.2 Architecture as an act of thinking

Considering architecture as a socio-cultural act stresses the intellectual aspect of the discipline as it introduces not only how built space is used but also how it *should* be used and

how it *can* be conceived before it exists in the world. The core ideas of the discipline are thus found in that act of cognition which considers possible outcomes for things that might exist. All design disciplines are inherently conceptual as design projects to a future state and, as an 18th century designer noted, architecture was first the product of the mind and construction is “merely an auxiliary art [...]” (Boullée 1953: 83). As far back as the 1st century A.D., Vitruvius (1962: 6-7) pointed out that “Nature had not only equipped the human races with perceptions like other animals, but also had armed their minds with ideas and purposes, and had put the other animals under their power”. It naturally evolved that humans would move from fabricating rough shelters to the more refined crafts, positioning architecture as the first of all arts and the catalyst for the movement from “a savage and rustic life to a peaceful civilisation” (Vitruvius 1962: 7).

In the 20th century, the idea of space became the primary subject of architectural inquiry and began to hold social, political and aesthetic tendencies which needed to be negotiated by architects. The focus on space brought new concepts into architecture and stressed the intellectual aspect of design which followed cultural changes. In general terms, the act of expression rather than the object created became the engine which drove the artistic. Art (and therefore architecture as an associated or subservient concept) became defined as an *expressive activity* (Croce 1922: 1) rather than a physical object like a sculpture, a painting, or a written poem. The major trend for artistic production in the 20th century began to consider the physical object in the world was only a placeholder or a signifier for the intellectual content. In this way, it was the intellectual that had validity and priority, where the object was a goal of communication (i.e. it *expressed* conceptual ideas). In contemporary research into general design thinking, which includes architectural processes, the knowledge of concepts has been identified as the fundamental basis to processes of ideation which form the core of design (Oxman 2004). The point is not that architectural design was considered as

a conceptual process only in the 20th century, but that design has always been conceptual first and brought into the world afterwards (McEwen 2003: 58). However, cultural changes in Western 20th century developments enforced greater value and complexity into the intellectual aspects of design.

In architecture, the intellectual content is called *architectural theory* and provides the conceptual basis that forms the foundation of all other aspects of architecture. It is not too difficult to make the claim that “architectural theory is the discipline” (Smith 2012, xi) and the intellectual side of architecture became explicitly visible from Post-Modernism onwards (post-1968). The rise of social consciousness in Western cultures affected architects strongly in their attempt to change society through the built environment (Tschumi 1994; Nesbitt 1996; Leach 1997; Hays 2000). This combined with the shift from *architecture as a building* to be instead *architecture as formal interventions that defined spatial experiences*. The building became a vehicle through which the architect’s mental activity was shared with their audience, focused on ideas surrounding social and cultural expression of bodies interacting with forms in space (i.e. the historic territory of architecture). As such, one of the major roles of architecture is that of communication rather than simply form-making (Kazmierczak 2003; Whyte 2006). However, while the built environment as the context for situating physical forms in space was still the most common way that architectural ideas would be communicated, architects might also find other modes of outputs as well as search for other sources of meaning for their intellectual exploration (Hays 1998; Holl 1998; Eisenman 1999; Eisenman 2004).

The trajectory of the last couple of hundred or so years of architectural content has shifted from the physical responsibility of building construction to the intellectual ideas around those physical categories. This does not mean that the outcome of architecture became different from its historic purpose (i.e. it is still buildings or at least the built environment),

but it does mean that a disciplinary understanding of architecture has changed. The major shift is a focus on "[e]xpression in terms of conceptual principles rather than of regulatory conventions [being] the distinction that divides architectural theory of the modern era from all that went before" (Hearn 2003: 177). While in the 18th century, the discussion was about style, character, emotiveness and order in the construction of buildings (Kruft 1994: 145), the 20th and 21st centuries saw a focus on semiotics, semantics, and space in several aspects including enclosure, extension and continuity (Johnson 1994; Forty 2000).

The above discussion positions architecture as having two important dimensions. First, architecture is essentially cultural and engages with issues and representations of identity on both personal and social levels. Second, while architecture manifests in building, it is the cognitive activity that is important for understanding architectural ideas and priorities through which the discipline develops new knowledge and defends intellectual territory (Dong 2007).

2.3 Text as the territory of architectural content

As happens with any other discipline, when considering the core of architecture as being formed of intellectual ideas rather than physical objects, the primary content of the discipline must be held in a medium that not only stores complex and nuanced information well, but also stores it precisely so it can be discussed and transferred. There is a recent observation in architecture that proposes the drawing as the true medium of architecture rather than the building (Evans 1997: 153-193), countering a previous position that the drawing was a metaphor for the building (Herbert 1988). The drawing as the primary medium of architecture is based on an argument that the architectural designer is removed from affecting the final product of the building while it is being constructed – unlike the painter, sculptor or poet who work directly on the products of their art. Of course, the first unexamined (or perhaps “hotly

contested” is a better term) assumption is that architecture is an art in the same way as painting, sculpture and poetry are socially construed as arts. However, suspending judgement and accepting architecture as a fine art, the argument is presented that the drawing is the last medium by which the architect inscribes their intentions *directly* and, therefore, is the vehicle of architecture as a mental act, making the building a metaphorical projection of the architectural intentions (Coyne et al. 1994). The position assumes a clarity of the fit between architectural ideas and the tools (drawings, models, etc.) to explore of those ideas and then considers the physical building only as a residual artefact.

Tools such as drawings and models *do* have a direct relationship with the content that architecture considers as its domain of knowledge as a form of representation of architectural ideas (although the idea of a fixed domain has already been questioned). Plans engage issues of occupation, movement (circulation), and adjacency while sections address volume, view and three-dimensional relationships; models explore the construction of a building as an artefact looking at tectonics, massing and formal relationships, and so on. As such, this position might well be considered true – to a point. The curious aspect of this argument can be seen when examining the breadth of the discipline and identifying the primary location for intellectual content, which clearly communicates attitudes, values, positions, larger frameworks, priorities and thought foundations. While magazines and monographs abound with glossy photographs of built spaces and design studios are filled with drawings, models and visual representations, when discussing the core concepts from which these develop – as cultural expression, intellectual history, qualitative values and intellectual ideas – the content is primary held *in speech and writing*. Making the claim that the dominant mode of intellectual inquiry for a formal design discipline is speech and writing could be considered audacious. However, there is clear evidence to support this claim (Tomes et al 1998; Kazmierczak 2003; Dong 2007; Goldschmidt and Sever 2011).

From an external, non-architectural theoretical point of view, we can consider the Cognitive Linguistic position that language is a point of access to cognition (Lakoff and Johnson 1980, 1999; Croft and Cruse 2004; Geeraerts et al. 2006; Gibbs 2008; Kovecses 2010). It would follow that the common modality to discuss conceptual ideas would be the one that provided the most direct access to those ideas. As the intellectual content of architecture has been discussed to be relationships between forms, space and socio-cultural concerns, that content is more clearly expressed linguistically. In support of this position would be the centuries of text-based theoretical, methodological, critical and value-based treatises found in the discipline. These texts contain deeply embedded values and thinking structures of architecture in a form designed to be shared between individuals and generations – usually for the purpose of teaching other architects rather than the general public. If images, photographs or drawings are present within theoretical or critical texts, they are only as accent pieces and used to support something more fully examined through language. The above claim does not imply that all architectural ideas are found in writing, only that linguistically (or textually) based evidences have an important role for exploring and communicating the conceptual side of architecture. This observation might be sufficient to make the claim that, when addressing deep disciplinary ideas, it is not physical building or visual media (drawings, renderings, models) which hold the core values of the discipline but talking and writing through the genre of architectural theory. Language allows the creation of a “coherent frame” through which multiple voices can be aggregated and engaged by an architectural designer (Dong 2007: 11).

The architectural discipline understands text as a site of equivalence for exploring architectural ideas and values (Forty 2004) and has had a long history of importance within architecture (Kruft 1994). One only has to scratch the surface of the architectural community to reveal the importance of text-based communication. Architects have used this mechanism

to produce and reproduce treatises and folios intended to share philosophical positions about the distribution of the built environment. The results directly affect the practice of architecture. During the Renaissance, for example, the five architectural column Orders of Tuscan, Doric, Ionic, Corinthian and Composite style were canonized by this process as part of the development of post-Renaissance classicism (Carpo 2001: 6). The advent of the practical architectural pattern books of the late Renaissance and Enlightenment, such as those by Filarete (1464), Serlio (1537), and Vignola (1562), not only opened up architectural knowledge to laypeople but also reinforced standardization of approach. While the Filarete, Serlio and Vignola books are no longer studied in architecture, other historical treatises still have a powerful effect on shaping the intellectual culture of the discipline. Historic books such as Vitruvius' *de Architectura* (first century AD/1914), Alberti's *On the Art of Building in Ten Books* (1486/1991), Palladio's *The Four Books of Architecture* (1570/1997), Laugier's *Essay on Architecture* (1753/1977), Durand's *Précis of the lectures on architecture* (1802/2000), Ruskin's *The Stones of Venice* (1886) and Morris' *News from nowhere* (1891) are still read, discussed and used to measure contemporary ideas. In current discussions of architecture, the foundation of the theoretical culture is set by the Modernist and proto-Modernist architectural writings such as those by Behne (1926/1996), Berlage (1996), Le Corbusier (1971, 1986), Giedion (1941/1971), Gropius (1965, 1974), Semper (1860/2004), Sullivan (1918/2012), Wagner (1902/1988), and Wright (1953, 1992). These examples are introduced to stress the effect of text-based knowledge on the direction of disciplinary priorities and physical buildings. While the physical projects of many of these architects are case studies of exceptional examples of built architecture, their writings contain a more nuanced and complex expression of the intellectual culture from which the building was formed. Writing expresses the architect's values, philosophy, approach and belief in the role of architecture as a part of cultural progress and is presented as a mode of communication

that expresses architectural ideas more clearly and more widely than what can be expressed by built work.

Dedicated theorists within architecture make even larger claims to the role of text through the use of the terms language, words or talk, declaring that “it is only by working through the words that meaning can be tapped [...] Theory (design-talk) is mediation between architectural concept-words and their manifestation in practice” (Johnson 1994: 78). As such, it is language that mediates between what one is thinking and what one builds, even to the point that the definition of theory is considered to be “talking”. My own position is concerned with the cognitive commitment which should align information held in linguistic models of communication and the type of information that guides the development of architecture if we accept that there is “fundamental unity and interaction among all cognitive faculties including perception, attention, categorization, conceptualization, affect, memory, reasoning, and language” (Dirven and Ruiz de Mendoza 2010: 14). Text, speech, drawing and building are modalities of expression that can explore certain types of information but are all concerned with the same conceptual territory constrained by a discipline and use the same cognitive processes structured by human embodied experiences (Johnson 1987, 2007) and metaphorical reasoning (Forceville and Urios-Aparisi 2009). Each of these modalities has the ability to more clearly engage certain types of information and while language might be less efficient at describing the physical nature of built space than drawing or physical construction (Tversky and Pu 1998), it is much better at documenting, codifying and transferring the more ephemeral socio-cultural ideas and meaning which make up the conceptual content of architecture.

2.4 The presence of metaphors in architecture

We do need to be careful to separate the role of text as a holder of architectural meaning from views of text (or language) as a metaphor for architecture. Indeed, while the latter is a prevalent position in the discipline, the metaphorical nature of the relationship is often in denial. The major versions of the language metaphor come from avant-garde architectural tendencies which attempted to establish a linguistic model for architecture (Gandelsonas 1998; Eisenman 1999; Eisenman 2004) and positivist methodological approaches found in computer and mathematic tendencies that understand all design as being able to be reduced to known qualities and then reassembled via a formula *like* grammar (Alexander 1964; Mitchell 1990; Coyne and Snodgrass 1992; Johnson 1992; di Mari and Yoo 2012). In these cases, the relationship between text and architecture is not seen as a metaphor but as literal.

Representing avant-garde theory in architecture over a 50-year career, Eisenman positions himself as supporting the conceptual nature of architecture but, aligning with the position of Evans addressed above, declared that “‘real architecture’ only exists in the drawings. The ‘real building’ exists outside the drawings. The difference here is that ‘architecture’ and ‘building’ are not the same” (Eisenman as quoted by Ansari 2013). While Eisenman was very interested in the role of language and text for architecture, he was not concerned with understanding text as a tool within architecture, but used it as an analogy (Belogolovsky 2016). Developments in the architectural theory of the 1970s highlighted the relationship between linguistics, semiotics and architecture, as opposed to iconography and social theory (Eisenman 2004). In this development, building is seen as text, the built environment can be read in the same way as a book (Henry 1990), and architectural discourse contains many terms that refer to this conceptualization such as *palimpsest*, *articulation*, *composition*, and *narrative*.

For those architects who consider architecture akin to language, there is a direct mapping between linguistic and architectural concepts as well as between text and drawing as being parallel expressions of language (Herbert 1988). The consideration of architecture as language does present two ideas that are not completely in alignment. First, architecture is considered to have an alphabet, lexicon, grammar, syntax, and style *in the same way* that language does (i.e. through literature and writing). These architectural elements can be seen as a “language of primary units that are combined according to the rules of logic to form meaningful structures” (Snodgrass and Coyne 2006: 48). Second, architecture is seen as operating in the sphere of language in its communicative capacity, so to be in conversation or dialogue with a user (Crowhurst 1974; Coyne and Snodgrass 1995; Harries 1998). In this way, architectural expressions could be considered to be a type of speech that transferred meaning through symbols (Donougho 1987; Whyte 2006), with architecture as a “species of writing – each raised stone was a letter, each capital on a column bore a meaning, and the letters and words, spelt out of wood and stone, were records of the community” (Cousins 1994: 65). For architects, it is a literal relationship (i.e. there is no incongruence) and can be contrasted with the linguist who would consider the mapping between language and building as a metaphor relating two ideas from different domains of knowledge (i.e. buildings are *not* text, they are buildings).

Today, architecture is still called a formal language (Coyne and Snodgrass 1995, 2006; Salinger 2014) even though it lacks some important attributes of language, such as discursiveness through the absence of a direct relationship between spatial sequence and a fixed time-based delivery as well as multidimensionality of focus (Seligmann and Seligmann 1977; Whyte 2006). The fallacy in the belief that architecture is literally a language is pointed out by Evans (1997). Countering the idea that architecture is text and/or language, Evans (1997: 154) states that “[a]ll things with conceptual dimension are like language, as all grey

things are like elephants. A great deal in architecture may be language-like without being language". This statement does not contradict the belief that architecture and language are related, but makes clear that the relationship is metaphorical rather than literal because while architecture bears meaning, there is not a direct mapping from language grammar and syntax structure to architectural elements (Whyte 2006: 166-167). Architecture does not have the imperative to communicate information precisely or efficiently nor is this type of communication required for the results of architecture to be successful (Risch 2008).

While language is one of the most prevalent and persistent metaphors in architecture and has been historically codified into the discipline over centuries, there are other recognized metaphors used in the discussion of architecture. These are clearly present in both historical and contemporary writing by architectural theorists and designers (Collins 1971; Seligmann and Seligmann 1977; Alberti 1486/1991; Forty 2000; Hearn 2003; Muller 2009; Fez-Barrington 2011; Libeskind 2012; O'Donnell 2015) and can be considered "root metaphors" (Johnson 1992: 145). When metaphors are present in design as knowingly applied, productive elements, they are used as generative sources of inspiration in a design method to help align philosophical positions and to bring purpose to architectural form. Metaphor can be seen as highly influential to architectural design to the point that a change in metaphor tends to result in a change in the final product (Casakin 2011, 2013). While architectural metaphors differ slightly in source domain from general design metaphors, the presence of metaphor in all design fields can be claimed to be due to the issues of indeterminacy of design orientations and their ability to bring clarity to complex situations (Melles 2008). More interesting for this dissertation is the claim that the use and presence of metaphor changes the type of priorities of the designer through altering their conceptual parameters, meaning that the introduction of new metaphors into architecture changes the cultural of design (Watson 1984; Muller 2009). This can be seen in the Modernist

architectural statements “less is more” and “form follows functions” introduced as part of a changing cultural position for architecture in the early 20th century (Casakin 2007). These metaphors were used to frame the entire approach to architectural design and refocused the type of information that designers used to judge the success of their work.

In architecture, the current dominant source domains are BIOLOGY, GEOLOGY, MECHANICS and LINGUISTICS as developed through 19th century theory and setting the foundation of 20th century thinking (Collins 1971; Hearn 2003). Metaphors, however, can be found in the earliest architectural writings which were dominated by concepts of the body (Vitruvius 1914; McEwan 2003) and general historical sources in design identified as “disegno/dessin, nature, ornament, order/geometry, and visual grammar and expression” (Johnson 1992: 146). Each of these sources aligned with particular ways of thinking about architectural design and the composition of the building, operating as a “design trigger” or sources for innovation (Collins 1965/2003: 149-158; Caballero 2006: 16-18; Plowright 2014: 107-30). In this way, one of the roles that is particular to metaphor is a framing position as part of a design method. Looking at architectural propositions in the 20th century, we find the following metaphors used to define various ideological approaches towards design:

that a house is a mollusc shell (Organic Architecture), that it is a machine (Functionalism), that it is an ocean liner in dry dock (International Style), that it is a permanent construction exhibit (New Brutalism), that it is a prosthetic device (Archigram), that it is a Sony retail outlet (Anti-Architecture); that architecture is a learning machine for impoverished medical students (Metabolism); that architecture is reified social engineering – that architecture is language. (Seligmann and Seligmann 1977: 23)

As a framing device, the metaphor acts to orientate the design to philosophical and cultural attitudes in order to help produce novel outcomes with, hopefully, a degree of relevance to cultural trends. For example, when the architect Sant’Elia (1888-1916) produced highly futuristic images of buildings in his *Città nuova*, it “showed how the metaphor of the machine could produce a totally unprecedented image for high-rise towers and train terminals” (Hearn

2003: 191). Rather than the building simply displaying the attributes of a machine, the sleek outer surfaces could be interpreted as shell cases that would contain *inferred* machine-like inner workings. Culturally, it represented a hypothetical future society by projecting technological progress but it also spoke to the values and bias of the designer themselves.

The applied use of metaphor is generally seen as positive but, as a communication and framing device, it can also hinder the design process depending on choice of source domain and relevance to the current situation to which it is applied (Coyne and Snodgrass 1992). For the architect, as the metaphor operates as a dominant tactic by which the design approach is conceived, it also mediates, highlights and *obscures* aspects of the environment in which the design exists (Melles 2008: 92). This means that as part of a design method, the choice of metaphor presupposed the possibility of reaction as well as the criteria used to judge success. The choice can eliminate other possibilities, changes the type of information considered, change the way context is considered and, through these actions, introduce different priorities that might not be well aligned to needs (Melles 2008: 99). For instance, as shown in historical studies, some metaphorical source domains were chosen by architects to relate to larger ideas that were valued by that architect. Thus, source terms from the MACHINES domain implied a directness of approach, efficiency, expression of rational epistemology and followed a function-based philosophy of Positivism rather than historical imagery (Gelernter 1995). Biological metaphor sources such as ORGANISMS referenced organic processes, biomimicry, a general version of the human body and nature. Sources from GEOLOGY engage aspects of landscape as well as crystalline formations, abstract structures, and geometry while LINGUISTICS is used to map concepts from semantic, semiotic and syntactical aspects of architectural design and meaning. These metaphors can be categorized by their larger epistemological tendencies of information orientation such as rationalism, romanticism,

positivism and so on, which are, in turn, claimed by some theorists to also be metaphorical transfers (Coyne and Snodgrass 1995).

2.4.1 The historical change in the use of metaphor in architecture

It is important to understand that the explicit use of metaphors in architecture has changed through the last several centuries with certain metaphors becoming more prominent in architectural writing via agreement with cultural contexts. Starting in the Renaissance, the use of linguistic sources as a metaphor in architectural writing was reinforced by the social pressures to include Latin based literary references (called Latinity¹) as a mark of status, intellectual credentials and the development of patronage (Clarke and Crossley 2000: 3). At this point in historical writing, linguistic metaphors were not simply used for their explanatory ability but also for social positioning. However, probably one of the oldest metaphors in architecture is the one that uses the human body for buildings (McEwan 2003). We find this metaphor present in Vitruvius during the Roman period (1st Century A.D.) and in Alberti in the Italian Renaissance (15th century). Vitruvius (1914) established symmetry as a principle of good architecture, ‘mapping’ that quality from the human body onto buildings. He considered both architecture as a disciplinary idea and the building *to be* literally a body, addressing the same issues of health and protection (from heat, sun, wind, temperature) as any biological entity would need (Vitruvius 1914: 19; McEwan 2003: 58). The body metaphor also brought a value system along with it that included wholeness and coherence,

¹ Latinity is the use of a style or words that is clearly Latin in origin. The purpose of using recognizable Latin source material in this period was to elevate the status of the work as it marked the scholarly or intellectual credentials of the author – i.e. it was a political rather than an academic gesture.

which made architecture analogous with closed system based on homogeneity, centrality and symmetry (Till 2007).

Alberti extended aspects of the human body as a source of meaning, directly connecting body references to building elements. He considered features of roofs to be "bones, muscles, infill panelling, skin, and crust" (Alberti 1486/1991: 79) and used the same biological terms for vaults, stating that "with every type of vault, we should imitate Nature throughout, that is, bind together the bones and interweave flesh with nerves running along every possible section" (1988: 86). Beyond the human body, there are other organic references including those to *shells, flesh, carcass, spine, bowels* and so on (Caballero 2006: 18). In fact, the body and its containing category, the organic, is considered to the most prevalent metaphors in the history of architecture, connecting building design to nature (Hvattum 2006; Di Palma 2006). Nature was important as a source domain because the metaphor gave architecture both its purpose and its authority. Nature stood in the Renaissance not as only inspiration to help orientation design but as a knowledge category that had access to universal truths. Simply put, it was the metaphor of nature that allowed architecture to claim an alignment of human action with cosmic purpose and timelessness creating a path for architecture to align with concepts of God (McClung 1981: 280).

The human body was a dominant reference into the Renaissance and early Enlightenment but by the Industrial Revolution, it was eclipsed by concepts of BIOLOGY and MACHINES – with the choice of one over the other often based on larger belief systems rather than the particular instance of use (Moloney 2011). While biology might be considered as extending from the existing metaphor of the body, there is a difference between the two concepts. The use of anatomical terminology before the Industrial Revolution tended towards equating buildings to body elements and body schemas (arms, legs, head, heart, feet on ground, heart as central etc.) and this included a parallel view of CITY AS BODY. The metaphor

could go so far, as McClung (1981: 283) illustrates through a literary reference, that a building's "medieval arrangement of apartments (hall with kitchens to one end and private quarters to the other) is imposed upon a point-by-point correspondence of the castle to the human body." However, once the pursuit of scientific knowledge became rooted in Western society through the Enlightenment, the biological metaphor shifted in several different directions. For the body itself, there was a move from "a sole description of bodily organs in terms of their physical appearance and position in the body, to focus on the functions performed by those organs within the whole" (Caballero 2006: 18).

The growth in biological knowledge, especially in evolution and cellular growth, also changed the type of information expressed through the metaphor. The dominant understanding shifted from the body as an anthropomorphic mapping between the environment and human physicality to instead focus on the body as a biological organism which stressed systems and natural laws (De Palma 2006). The organic metaphor was used in this way as part of early architectural Modernism, which connected biological principles to concepts of project completeness and solidity. In doing so, the architect could present a building as a final expression of natural, dynamic forces interacting with a context which produced a form that simply emerged and, therefore, could not be questioned for its meaning (McClung 1981: 281; Hvattum 2006: 497). It also stressed issues of health and illness found in formal representation that ranged from early Modernist concepts of purity, hygiene, cleanliness (Till 2007; Muller 2009) to late 20th-century fixations on *scars*, *scabs* and *parasites* (Caballero 2006; Kanekar 2010), using these to associate redemptive qualities with design when applied to the environment.

The consideration of the organic as an emergent, evolutionary system indicated a shift away from the body as a topographical object to the body as a complex manifestation of relationships based on context, a move from appearances (attributes) to systems (relations).

The machine as a metaphor could be said to occupy the same territory as the organic in representing forces as well as operating as a metaphor *for* the organic. For example, Viollet-le-Duc wrote about the example of mechanical innovation occurring through the transfer of biology. Looking at the different bone length in the hind legs of stags, reindeers or elks, he explained that the relationship between the femur, tibia and calcuneum (heel) allowed for quick powerful action such as leaping over large obstacles. Using the biological source domains of anatomy and kinesiology, he transferred the *relationship* between the bones of the hind legs to designing a machine that would make a quick and power tension (Hearn 1990: 227). Other architects used biology and the organic as a source domain to address universal laws and to attempt to avoid issues of human fashion and temporary styles (Proctor 2006) as well to stress concepts of emergence and authorless design (Hvattum 2006). However, these particular dominant source domains did also reinforce a functional bias stressing “biotechnical determinism” which aligned architectural design as a science, an idea that is a metaphor in contrast to ARCHITECTURE AS POETRY (Moloney 2011: 213).

Many architects do not apply biological or mechanistic sources to shape their design projects directly but align one or the other of these two domains as a dichotomous ideological position which frames the way they approach design as a larger idea. For example, the influential early 20th century Modernist architect, Le Corbusier, committed his practice of architecture to be understood through the metaphor of the machine. Another architect from the same time period, Eileen Grey, contrasted her own architectural approach from that of Le Corbusier by opposing his value for the machine with her belief that organics and biology were more relevant and held a higher value as a way of understanding design (Ballantyne 2011). Rather than simply adopting a different source domain through which shaped her design process, Grey presented machines and organics as ideological opposites in a belief system. She considered the house to be an organic extension of the human body and that a

"house is not a machine à habiter [machine for living in]. It is man's shell, his continuation, his spreading out, his spiritual emanation. Not only its sculptural harmony, but its whole organization, every aspect of the whole work combined, come together to make it human in the most profound sense" (Grey as quoted in Ballantyne 2011: 45). Interestingly, although biology and machines are presented as opposite domains by designers – who have used them to express beliefs towards types of information used as source material – in terms of methodology, they may be seen as interchangeable as both address common needs. The difference in choosing one versus the other is postulated to be that mechanistic sources are used when something is constructed to a plan whereas organic sources are used when the design is considered to emerge from its surroundings (Collins 1965/2003: 152). To say it in a slightly different way, machine metaphors are applied when the form is a result of external forces whereas the organic is used when the form is the result of internal processes (Hvattum 2006). Considering the organic from the point of view of functional processes, the machine becomes a useful metaphor of explanation as can be seen in the Viollet-le-Duc example above (Hearn 1990).

2.4.2 Other aspects of metaphor in architecture and design

Most of the discussion within architectural writing focuses on metaphor as a tool in design to aid the shaping of objects and spaces, but it is also acknowledged that many metaphors found in architecture are not explicitly used as part of that process. Many of these are still related to the dominant domains of the BODY, MECHANIZATION, ORGANICS, and LANGUAGE but have become conventionalized. For example, the architectural term for movement in a building, *circulation*, was transferred from human anatomy referring to the mapping the movement of blood to the movement of bodies. This can be considered as a naturalization of concepts related to explicit application of the metaphor BUILDING IS A (HUMAN) BODY (Forty 2000).

Other body terms conventionalized in architectural jargon include *skin* to mean the surface of a building, *ribs* as an expression of structure, *bowels* to refer to deeply situated interior spaces, or *spine* to address a linear type of circulation that connects many spaces (Caballero 2006).

Besides conventionalization, there is also an issue of normalization – where the metaphor is no longer understood as a metaphor even though it is being used as such. The normalization of metaphors raises a question of whether metaphor can be identified in discourse through incongruence. One of the most famous framing metaphors in current architectural discourse is the classic statement referenced earlier by the architect Le Corbusier, "A house is a machine for living [une maison est une machine-à-habiter]" (1986: 95)², as noted above. This statement occurred as part of the rise of Modernism in the 1920's when the machine was the major framing metaphor for the development of human environment. As a metaphor, it allowed Le Corbusier to consider values to guide designs for which the machine was a best-in-class representation of the underlying ideas. The statement does not mean that the building has the physical characteristics of a machine, unlike Sant'Elia's (1988) visually driven representation of machine-like buildings. Instead, architecture should operate in the same way machines do – i.e. involved notions of

² The context of Cobusier's statement was the rise of industrialized production in other spheres of applied design and the increased focus on health as an outcome in the built environment. For Corbusier, the type of mass production seen in airplane and car production needed to enter the architectural discipline, combined with an Enlightenment rationality. However, the house was tied up with centuries of tradition and, as Corbusier explains, "If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the "House- Machine," the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful" (Corbusier 1986: 6-7).

performance, efficiency, functionality, assembly of parts, etc. However, given the complexity of contemporary building systems as well as the new technical awareness of forces affecting building form that were occurring around the time of the inception of Modernism (e.g. air movement and solar gain), it is also possible to consider the house as literally a machine (i.e. not as a metaphor). Corbusier considered the factors of architectural design to be governed by operational factors such as “[b]aths, sun, hot-water, cold-water, warmth at will, conservation of food, hygiene, beauty in the sense of good proportion” (Le Corbusier 1986: 95). The house was designed as a machine that would use these factors in its formation *in the same way* that an airplane would use thrust, air flow, seating capacity and so on.

For Corbusier, what made something a machine was the separating of performance from stylistic conventions through the designer’s use of environmental principles and assembly processes as part of a modern rational approach. The machine, such as a steamship or car, was not a metaphor for building (visual) but an expression of a process, an example of lessons of decision making in design (Le Corbusier 1986: 112-113). Corbusier did use metaphors as a way for explaining the concept of architectural design. He exclaimed, in his usual hyperbolic manner, that "A building is like a soap bubble. This bubble is perfect and harmonious if the breath has been evenly distributed and regulated from the inside. The exterior is the result of an interior" (Le Corbusier 1986: 181). In this case, the metaphor of buildings as a soap bubble refers to functionalism, for which the manifestation of the exterior of the building is solely a product of the forces of the interior in the same way that a bubble is created through the pressure of the captured air. Many architects, such as Corbusier and Frank Lloyd Wright, viewed the products of their designs as technological artefacts, whether they were a building or an armchair, making these objects to be members of the domain of MACHINES and considering the relationship to be literal rather than metaphorical (Wright

1953: 159). Other architects have interpreted the building-as-machine as metaphorical since a house is not a machine; it is a house.

In addition to these conventionalized terms and normalized concepts, architecture has been shown to have a strong relationship to visual mappings between domains, i.e. what is referred to in the cognitive literature as *image metaphor* (Caballero 2006). The visualization of design forms (Oxman 2002) and the use of visually based metaphors is not only found in architecture, but is shared by other design disciplines such as graphic design, Human-Computer Interaction design (henceforth HCI) and information graphics – with the metaphoric content of information graphics operating as a communication tool and considered as an equivalent, but alternative, form of linguistic metaphor (Risch 2008). Image metaphors can be claimed to be used as sign systems in interpretation rather than just an aspect of methodology, although it is acknowledged that the purpose of architecture is not primarily to be a depictive vehicle but non-representational and experiential (Bafna 2008). It does raise the awareness that metaphors are used in multiple ways as part of design, both as an aid in design processes and as signifiers of intellectual content in interpretation.

When design is considered as a meta-discipline and basic human activity, metaphor is presented as a heuristic tool to aid creativity and for the creation of innovative products (Casakin 2007). Metaphors are considered as a cognitive strategy that allows “problem solvers to enlarge the universe of possible solutions, affecting the way they perceive and structure knowledge in their minds when dealing with a problem. Therefore, the power of metaphors is essential to reflect, understand, and solve a problem from new and unconventional perspectives” (Casakin 2013: 1261). This positions metaphor as a critical tool in the construction of meaning in new situations, working to reveal or suppress aspects of the environment and experience (Melles 2008: 92). During the design process, the suggestion is that there is a “play of metaphors” that consistently open other possibilities through their

entailments which “prompt actions that change the design situation and our understanding” (Coyne et al. 1994: 114). It is this action of using associated ideas to understanding design situations that makes the claim for metaphor as a heuristic tool. However, the heuristic nature of metaphor isolates its use to that of the process of design, which stresses the ability to formulate conclusions rather than an aspect of interpretation through conventionalized knowledge.

Contemporary discussion of metaphor can be found in all the design practices but metaphor use and application is affected by both the design discipline as well as the pedagogical and ideological position of the context (Coyne et al. 1994: 120). As such, we have to be careful not to conflate the use of metaphor in one area of design as generic to all areas of design. This is because not all design disciplines accept metaphor application, integrate it explicitly into methods, or requires its engagement as part of the product of design (De Souza 2005). Design fields such as multimedia and experiential design have started to accept semiotic-cognitive intentions behind design methods but this is possibly due to the type of information they handle, which is scripted and explicit (Kazmierczak 2003). Other design disciplines, architecture included, do not operate as explicit communication outlets and the role of semantics and rhetoric can easily be suppressed. There is a claim in architecture that it is one of the few ‘arts’ which can be safely ignored as it forms a background to human existence rather than requiring contemplation (Ballantyne 2011). Where metaphor is knowingly addressed by members of the discipline, it is as the two previously stated positions: heuristic tool for innovation and image metaphor related to formal concept and building shape.

The absence of more extensive discussions of metaphor in the design disciplines is interesting as metaphor has been claimed to be the *core* of the design process (Coyne 2005). In addition, it is suggested that design is generally understood through the metaphor of

problem-solving by referring to design processes through source domains that support the action of removing layers as a way of uncovering truths or to rationalize. These metaphors can include *dissection*, *physical uncovering*, and *moving from surface to depths*. While not being used as a novel metaphor as part of a design method, these metaphors are being used to understand design itself. Design studies recognizes metaphor and analogy as resources used as part of ideation in the design process, but the terms are used inconsistently and, sometimes interchangeably. Often, analogy is considered as a metaphor based on relational similarity (Coyne and Snodgrass 1992; Oxman 1999, 2002), yet other times, metaphor is considered as a special case of analogy with visual variants of both drawing a line between spatial and abstract knowledge (Risch 2008).

2.4.3 Why conceptual metaphor matters to architecture

While architects have acknowledged the general presence of metaphor as part of design theory, and have used it as a way of orientating design positions through the recognized source categories of LINGUISTICS, GEOLOGY, ORGANISMS, BIOLOGY, and MECHANICS, there is little understanding of metaphor's deeper role in architectural cognition and its effect on architectural values. Architecture, as a member of a larger group of design disciplines, places value on tacit information transfer over clear process, suppressing cause and effect relationships of design outcomes as communication vectors (Logan 2007). Metaphor is valued as a generator or an orientation tool for a design starting point which will 'inspire' a reaction when explicit non-disciplinary information is engaged (Goldschmidt and Sever 2011). However, there is little evidence of knowledge considering the technical aspects of metaphors in architectural theory including a lack of acknowledgement of the existence of conventionalized metaphors, primary metaphors or even basic image schemas. Some theorists have made the claim that it "is a none-too-commonly-known fact that in Western culture the

understanding of architecture is metaphoric in that it is rarely known for itself" (Johnson 1994: 429), raising the importance of understanding metaphorical operations in architecture. Yet, this is combined with ambiguity to how metaphorical statements and expressions are considered in architecture, with the possibility of metaphorical concepts interpreted as literal by the designer but analogical by the audience; or symbolic rather than metaphorical. What is clear is that metaphor has been connected with issues of method and meaning in architecture for many centuries, whether acknowledged or latent in the texts of architectural theory. Clearly, metaphor matters to architecture.

While this dissertation is focused on evidence from text, there have always been examples of conceptual metaphors influencing the choice of building form and spatial layouts as part of cultural values. The Greeks knew how to build an arch but barely used it in the construction of their buildings while the Romans had the technical ability to build with beams, post-and-lintels or arches, but used the arch almost exclusively and prominently in their buildings. While the reason for this was never stated by these cultures, we could reflect of the presence and influence of the primary metaphor UP IS IMPORTANT and the related STATUS IS VERTICAL ELEVATION (Grady 1997: 212). For the Romans, the arch was composed of the stacking of masonry blocks that culminated in a keystone and the visual expression of the stacked masonry was "an effective expression of rising status" (Onians 1992: 203). As a metaphor underlying cultural values, STATUS IS VERTICAL ELEVATION governed many design decisions for the Romans from the relative height of podiums for sculptures communicating the importance of the person represented to the number of stairs in temples. Roman temples were always designed with stairs and, like the arch and the sculptures, the further up one travels to reach the podium, the more important the temple. Stairs were not only connected to the height metaphor but also to a metaphor for advancement in life where the conceptual metaphor LIFE IS A JOURNEY appears to have a role. Often the Emperor, either through the

location of a residence or a surrogate statue, would be placed at the end of a linear hall preceded by stairs that represented status by linear movement and relative height (Onians 1992: 203). In English culture, the column became important as an architectural element in both language and physical building. The metaphorical transfer is based on the metaphor SOCIETY IS A BUILDING where people and institutions are columns which support the structure of society as a roof. The concept develops into an expression of free standing columns in the houses of merchants and nobility (Onians 1992: 204). It is in this way that metaphor affects physical form choices as part of cultural expression, although architects would consider these interpretations to be symbolic even though the presence of primary conceptual metaphors is clearly present.

When architecture is considered to be mostly an intellectual act, the building itself can be seen as metaphorical. Evans (1997) would go even further and consider the building to be a metaphor for the drawing, and the drawing as the modality of architectural exploration. While Evans did insist on direct access to the work and had a bias against language, mistrusting it as a "verbal tide eroding vision, bedeviling our ability to see without language to guide our eyes" (Evans 1997: 155), his concern with the direct manipulation of the media that holds architectural ideas is valid. The latter point, the beguiling taint of language, is one that reinforces the mind-body fallacy that considers the senses, language and thinking as separate, isolated events rather than being all part of the cognitive commitment. Evan's position does draw attention to the persistent activity of transferring information across domains in architecture, stressing "the peculiar disadvantage under which architects labour, never working directly with the object of their thought, always working at it through some intervening medium, almost always the drawing" and how conceptually far away "a drawing is to a building" (Evans 1996: 156). Rather than accomplishing what he would wish – architecture to be concerned with drawing as the primary medium for exploring its ideas – it

is useful to stress how fundamental the process of transferring knowledge across domains is for architects. In both drawings and buildings there is a transfer of concepts across domains of experience where the final meaning can only be inferred and is not literal. A building does not express but is interpreted as an act of human cognition.

2.4.4 A problem of domains in architectural metaphors

There are several issues within the discipline when the understanding the relationship between conceptual metaphors and architecture is addressed. Many types of cognitive operations are lumped together by architects with the term analogy, including metaphors, metonymies, symbolic inferences and figurative statements. Under the consideration of “functional analogies”, which include "living organisms, machines, and bodily functions, such as human taste and speech" (Collins 1965/2003: 146), the revival of past styles of architecture, or historicism, is identified as a process of analogical mapping. The major use of such mappings was to determine the surface characteristics and presentation of a building, usually by focusing on the transfer of similarities through imagery (Downing 1992). The concept is closely aligned with the metaphor that considers ARCHITECTURE AS LINGUISTICS using a mapping between language syntax and architectural forms and ornamentation. In this case, the metaphor is based on concepts of history and time, presenting historical building styles, such as Gothic, Romanesque, Classical and Egyptian, as isolated source domains that are then mapped to contemporary buildings so that “architecture as a metaphor dominated [...] even architecture itself (Karatani 1995: xxxii). The major source for architectural meaning from the 1750s to the 1920s was, then, through the use of historical building characteristics understood as source domains mapped to the target domain of contemporary representations (Collins 1965/2003: 61-127). This position would understand each stylistic

expression of a building as its own source domain focused on representational values rather than background knowledge for the organization of concepts.

Another issue is presented by a classic metaphorical statement known to architects – the Renaissance expression that considered “a City [to] be no more than a great House, and, on the other Hand, a House be a little City” (Alberti 1486/1755: 62). If we consider the house and the city as examples of different scale objects in the same source domain of the BUILT ENVIRONMENT, there would be a violation of a fundamental principle of metaphor as mappings between different source domains. However, if the house is in the source domain of BUILDING and the city is in the source domain of URBAN, then the mapping is valid. However, there is another concern, namely that of the principle of asymmetrical directionality (Lakoff and Johnson 1980), that is, the notion that metaphors are unidirectional mappings from source to target domains, where the reverse mapping would simply not work or make sense. A basic example of directionality can be considered through the example of “it is meaningful to refer to a person as warm but meaningless to refer to a cup of tea as affectionate, meaningful to refer to the foundations of a theory but meaningless to refer to the postulates of a building” (Grady 2007a: 191). Yet, it is meaningful (and useful) to understand urban composition through the mapping of housing concepts “such as the Courtyard, the Hall, the Parlour, the Portico, and the like” (Alberti 1486/1755: 62) while the house could be considered through the principles of urban design (corridors as roads, public squares and space, zoning of activity, and so on). Alberti clearly considered the analogy as valid in both directions when considering both buildings and cities being made of ordered parts based in human needs. Contemporary text reinforces the association of scale as a city can be considered “[...] at any one location a giant room as well as an ocean of endless surfaces” (Lerup 2001: 55). Depending on how source domains are defined, the statement is either

clearly metaphorical following the rules of CMT for source to target mappings but violating the asymmetrical directionality theory.

2.4.5 Architectural thinking and conventionalized conceptual metaphors

Architects use metaphor constantly in their writing, speech and project development beyond the recognized image metaphors (Caballero 2006) used to explain the shape of buildings or similarity mappings used to frame design approaches that create coherence. In addition to the traditional understanding of metaphor, there are evidences of more latent metaphor use in architecture. If language is a manifestation of deeper cognitive structures (Lakoff and Johnson 1980, 1999; Lakoff 1987; Croft and Cruse 2004), then it would be expected to find metaphor involved beyond explicit use as a design tool. Indeed, this is the case and can be shown if we look at a sample of text from architectural theory writing – especially a piece from an author attempting to separate metaphors from architecture. Evans (1997) was suspicious of any relationship between language and architecture and was particularly critical of other architects who were very publicly pursuing language as a source domain for architectural meaning, such as Eisenman (1998, 1999, 2004). In a critique of an exhibition by Eisenman, Evans wrote:

The written words of architectural criticism are as deeply implicated in the forms of architecture as visible figures are in those of language. This should not be construed as acceding to Eisenman's claim that his work is like writing. It is not a likeness, it is an interaction that is being pointed out: a vast and essential traffic between two distinct but interdependent states. The implication of fictional movement can be suggested in writing and experienced in building. That one requires the other does not prove that one is like the other. We could do without morphological fictions and make architecture refer only to things that belong in the recognizable world of dependable physical qualities, but we do not and it does not. 'Punctured volume', 'compressed planes', 'scattered fenestration', 'frozen movement', 'interpenetrating spaces', 'agitated surface': it is the verbs turned into adjectives that do it. Perhaps, then, it is true that we transport the sense we make of our own active participation in the world into architecture on the lack of language. (Evans 1997: 138)

Our interest in this excerpt is in the six phrases Evans interpreted as a stylistic convention – what he notes as “verbs turned into adjectives”. These are:

- (8) punctured volume
- (9) compressed planes
- (10) scattered fenestration
- (11) frozen movement
- (12) interpenetrating spaces
- (13) agitated surface

While the morphing between these parts of speech might be true from a purely linguistic point of view, from a cognitive perspective these word pairs are based on conceptual metaphor structures which activate otherwise passive forms with human interpretative content. If we examine each of the six pairs for literal congruence, there are very clear conceptual associations present. We can consider (8) and (12) as similar, both referring to physical actions of penetration using the image schema of PUNCTURE. Volumes in architecture are not literally “punctured” as the construction processes and scales simply do not allow this to occur. For spaces to “interpenetrate”, the two volumes would have to consider a single element (i.e. the atmosphere/air) as conceptually separate. Planes and volumes are interpreted as entities and then given a relationship to each other through human cognition. This engages the primary conceptual metaphors of EVENTS ARE ACTIONS – a conceptual metaphor at the core of any activation of a static object (Lakoff and Johnson 1980; Grady 1997). The associated cognitive process allows the conceptual translation of something that is inert and static into something that acts upon the surrounding environment. However, (12) also activates a metaphor GAS (SPACE) IS A SOLID as it is necessary to understand something that does not have solid mass, such as air, as being an object. The expression (9) creates a sense of pressure between the planes, but the “compression” is not a physical change the density of the air, an increase in pressure (measured in kPa (PSI)), a

change in gravitational forces or any real change in the physical environment. It is metaphorical and *interpretative*.

As we move through the list, the arrangement of windows in a building façade (10) has no literal value until it is interpreted as “scattered”, speaking to a lack of order and rationality or a sense of formal whimsy using the metaphor FORM IS MOTION. Considering example (11), movement cannot be frozen – the concept is an oxymoron – but movement can be implied using static objects also through FORM IS MOTION. Finally, example (13) once again refers to FORM IS MOTION as a physically inert surface is given conceptual action through being interpreted as “agitated”. More than just simply linguistic expressions, these six examples instantiate to cognitive metaphors building upon image schemas of CONTAINMENT, BALANCE, FORCE, and IDENTITY. Grady (2007b) would consider the motivational aspect of the word couples, classifying them as correlational metaphors while other traditions in cognitive linguistics and cognitive semantics would understand the terms as generic-level concept-to-concept metaphors (Lakoff and Turner 1989). Unlike architects, none of these traditions would consider the language as disconnected from experience nor as an artificial projection of fiction onto the built environment – an attitude that requires the suspension of human cognition in human physical experience.

While we might consider Evans’s focus on adjectivized verbs as particular to the discussion between himself and Eisenman, this is not an isolated occurrence. When discussing the work of Frank Gehry, an important designer in the late 20th century, another architectural theorist and historian considered that

[i]n Gehry’s house, the *juxtaposition* of the unfinished wood studs with *highly articulated* white cladded surfaces, however, could *be associated* with the aesthetic sensibilities implied in the idea of *both-and* discussed by Robert Venturi. Nevertheless, *under Gehry’s hand*, the thematic dualities such as inside/ outside or old/new *do not end in* either/or resolutions. His own house *marks a departure* from what one might call architecture’s *interiority* for a way of thinking in which architecture *is perceived as* 'modelling' [emphasis added].

(Hartoonian 2006: 113)

Many of the terms introduced in the sentence above do not directly engage concepts of structure, environmental protection or shelter. Instead, objects are given agency and put into complex relationships through "juxtaposition", other surfaces are personified and have "sensibilities", while enclosed space is an "interiority". These conventionalized instances of conceptual metaphor include examples of THINKING IS MOVEMENT ("marks a departure"), INFLUENCE IS TOUCHING ("under Gehry's hand") and THINKING IS SEEING ("architecture is perceived as 'modelling'"). The terms directly associated with building elements in the sentence pick up on common themes found in other contemporary architectural writing and, while reinforcing the discussion above of architecture as an intellectual act, also show clear evidence of conventionalized metaphors operating to develop and explore architectural content.

Considering architecture from the perspective of conceptual metaphors, we do not have a "lack of language", as Evans suggests, nor are we creating "morphological fictions" (Evans 1997: 138). Instead, we, as humans, have a cognitive involvement with our environment that shapes our use of language and our interpretation of space. As such, understanding language used for communication – discourse – as based in metaphorical reasoning allows access to human cognitive space and value structures. The claim that "human reasoning is largely metaphorical and imaginative" stresses not just the need "to determine the role of metaphor in our cognition, but also how we use metaphor to communicate" (Caballero 2006: 43). A major tool for examining architectural values can, then, be found in basic theory of CMT. As the creation of meaning in architecture arrives through a human body interpreting the physical and visual environment, it should also be directly tied to embodiment. All this means that metaphor should play a critical role in the formation of architectural knowledge, the projection of meaning onto architectural

environments as well as the interpretation of those environments. In addition, and on a general level, studying metaphor in discourse might reveal how conceptual patterns form some of the foundational mechanisms of thinking through the interaction of human bodily experience with our surroundings. On a disciplinary level, studying metaphor in architectural discourse should address the underlying priorities and values of the architectural community.

3. DEFINING AND CLASSIFYING METAPHOR

3.1 What is a Metaphor?

Before developments in Cognitive Linguistics and metaphor studies, the general understanding of metaphor was as a “a device of the poetic imagination and the rhetorical flourish” (Lakoff and Johnson 1980: 3) considered as an unnecessary embellishment in literature and speech. In this classic understanding of linguistic metaphor, the metaphor is identified by words which are not used in their everyday sense but it is only a matter of language. However, it turns out that this popular assumption is false and the generalizations that govern linguistic and poetic metaphor are found in thoughts rather than words (Lakoff 1993: 202-203). Metaphor has been shown to be a persuasive cognitive operation that has “ubiquity in metaphor in both everyday and specialized language” including abstract thought, emotions and aesthetics (Gibbs 2008: 3).

As a cognitive operation, a metaphor is a “mapping across conceptual domains” (Lakoff and Johnson 1999: 47) where knowledge from the first domain is used as a way to understand the second domain (Kövecses 2010: 4). A domain is a bounded cluster of concepts related to a body of knowledge or experience (Fillmore 1982/2006; Lakoff 1987; Clausner and Croft 1999). The mapping is not exclusive to only certain types of conceptual domains nor does it involve a singular or solitary concept independent of a domain. Rather, the relationship is between entire domains of knowledge in the formula TARGET DOMAIN IS SOURCE DOMAIN (Croft and Cruse 2004: 195). The definition of a metaphor, then, pivots on

the relationship between two domains of knowledge where one domain, the SOURCE, is used as a way to understand, elaborate or extend the second domain or the TARGET. Grady (2007a: 190) provides a discourse example of a metaphor from a US State Representative webpage:

- (14) The blueprints drafted last week will ensure that the *ship* of the Commonwealth truly remains one for the ages.... The House Budget ... will allow the state to withstand even the *stormiest weather*....

In this example, the political structure of the state of Massachusetts is being discussed as if it were a ship as a physical object interacting with the environment (“ship”, “stormiest weather”). As things like political organizations and budgets are abstractions and are obviously not ships nor can be directly affected by weather, this is an incongruent statement. The metaphor maps between the source domain of SHIPS AND NAVIGATION to the target domain of POLITICS AND STATES, as Grady defines the domains.

The incongruence created between the source and target domains is a key factor in metaphor as a conceptual dissonance is created between the literal meaning of the linguistic expression and its contextual meaning (Goatly 1997; Caballero 2006; Pragglejaz Group 2007; Cameron 2008, 2010; Kimmel 2012). It is context which “shapes metaphor use and understanding” (Gibbs 2008: 3) and incongruence does not simply exist between the two domains as isolated concepts. In fact, as Grady (2007a: 188) notes, “it is nearly impossible, though, to conceive of metaphor without taking into account the connections between lexical semantics, usage, and our understanding and perceptions of the world.” A basic definition of a conceptual metaphor, thus, is the involvement of two domains of knowledge where the source domain is applied out of context with its literal meaning.

One thing to keep in mind is that metaphor as a cognitive operation is diverse as well as expansive and this dissertation maintains a broad definition as a way to capture the extent of metaphor use in a disciplinary discourse. Many research scopes within metaphor studies

and Cognitive Linguistics necessarily restrict the parameters of metaphor to isolate a particular aspect for study. CMT, for instance, is focused on metaphor as something that “allows conventional mental imagery from sensorimotor domains to be used for domains of subjective experience” (Lakoff and Johnson 1999: 45) and prioritizes non-similarity mappings based on sensori-motor schema as a study of embodied cognition. However, based on the definition above, a metaphor can be understood as *any* transfer between domains of knowledge expressing dissonance between literal and situated meaning – whether defined as similarity, comparison, class-inclusion, resonance, correlation, inference or some other association. The involvement of two domains in contextual incongruence is the definitive difference between when a concept has entered the realm of the metaphor and when it is some other associated aspect of the cognitive structure. This makes the relationship between knowledge domains as a key aspect to differentiating metaphor from other cognitive operations such as metonymy or polysemy and the presence of incongruence as a key aspect to separate metaphor from simile.

The introduction brought up concerns of source and target identification and the ability to clearly state a frame of knowledge of a concept or term. When considering the definition of metaphor above, the ability to clearly identify domains of knowledge would seem to be a critical issue. Some of the issues of source and target domain identification can be addressed by extending the analysis of conceptual metaphor to categorization and taxonomic information such as decompositional layering (primary scenes, primary metaphors), the nature of the mapping system (sensori-motor/cultural, conventionalized/novel), experiential motivations (resemblance/correlational) and associated schemas (image schemas, superschemas, rich schema). As Grady (1997: 8) notes, “naming the two domains which are linked by metaphor is often not enough to predict the nature of the mapping between them”, especially if the research concern is focused on the systematic use

of certain metaphors or fundamental values as evidenced through metaphorical expressions. The issue is possible irrelevancy between the domain coding and the semantic intentions (i.e. we can classify metaphors by general source and target domains but it does not really tell us anything). These parameters are discussed in the sections 3.2 and 3.3 below.

To summarize, the term *metaphor* as used in this dissertation follows the traditions of contemporary metaphor research and means the cognitive process of “a cross-domain mapping in the conceptual system” (Lakoff 1993: 203). When *metaphorical expression* is used, it refers to the linguistic evidence from a sentence or sentence fragment that makes up a cohesive and bounded conceptual metaphor. The ability to identify a metaphor is an important issue in metaphor studies and, as such, a brief review of the differences between metaphor and other conceptual operations such as simile, metonymy and polysemic terms is first presented in 3.2 below. The clear boundaries of conceptual metaphor and its resultant identification in a corpus presented in this chapter, while the theory is applied through methodology and examples in Chapter 4.

3.2 Other cognitive concepts similar to metaphor

As a metaphor is clearly defined as a mapping transfer between two distinct and separate domains of knowledge which creates incongruence in a situated context, it is possible to differentiate metaphor from other conceptual structures which are similar (i.e. also map between concepts and involve domains). It is necessary to briefly cover to these related concepts as identifying cognitive operations in a corpus often involves complex evidence. Consistent with the definition of metaphor, the two most closely related cognitive concepts are *simile* as a literal comparison between two objects in different domains expressed in a specific linguistic form and *metonymy* as an interdomain cognitive mapping operation.

There is often confusion between the concepts of simile and metaphor as they both involve mappings between domains of knowledge. As a linguistic event, a simile is a comparison statement which associates two unlike things using the prepositions *like* and *as* to make a statement of intentional similarity. However, it is important to understand that a simile is both a literary structure and a cognitive operation. As a cognitive operation, a simile sets up a comparison between two concepts which refers to specific-level references and is interpreted as literal, i.e. there is no incongruence present in the comparison between domains. For example, if a person is considered by the simile “to be like a shark”, it is a reference to the specific predatory fish rather than the type or category of predators or larger domain of ocean life. There is no confusion in the statement that the person is a shark and there is a lack of incongruence created as the expression is to be understood literally (Glucksburg 2008: 71). When mapping across domains, either something *is like* something else, or it *is* something else (Partington 2006: 293). The former is considered a simile while the latter a metaphor.

This position, thus, considers metaphor and simile as distinctly different cognitive operations and does not define simile simply as a type of resemblance metaphor (Gentner and Bowdle 2008) nor that metaphors are a type of implicit simile (Kövecses 2010: ix). The role of incongruence and literalness in domain mapping allows a better understanding of the difference between metaphors and simile. While all expressions that take the form “X is like y” can be considered linguistic similes, they are not always cognitive similes as the expression must be able to be interpreted literally for a simile to exist. This means some expressions using “like” or “as” will sometimes be metaphors while others will be similes depending on context and discourse intention, as can be seen in the following examples provided by Croft and Cruse (2004: 211):

- (15) a. My house is like yours. (simile)

- b. *My house is yours.
- (16) a. Nectarines are like peaches. (metaphor)
- b. *Nectarines are peaches.

The examples above are written in both linguistic simile form (a) and linguistic metaphor form (b). The linguistic form can be misleading as regardless to either grammatical structure, the first example (15) is a cognitive simile while the second example (16) is a cognitive metaphor. In (15), there are many situations in which “my house” could be considered literally as “your house” if a person operated in the two houses by considering the physical spaces emotionally and socially equivalent (i.e. I am in my friend’s house but literally treat it as my own taking food from the refrigerator, lounging in comfort, etc). There is a comparison between two objects but a lack of incongruence. In the second example (16), nectarines are clearly not peaches and there is no context in which a nectarine could be a peach, producing incongruence that identifies this as a metaphor. Thus, the difference between the two cognitive operations of metaphor and simile is that a metaphor produces incongruence when knowledge from two domains are related where a simile is a literal comparison.

A second related cognitive operation is metonymy. Metonymy has had much more attention in Cognitive Linguistic studies and there is debate surrounding the exact difference between the two concepts of metaphor and metonymy including a wide range of differing opinion (Barnden 2010). Both metaphor and metonymy are cognitive operations that involved a mapping between associations. An accepted definition of metonymy is as “a cognitive process in which one conceptual entity, the vehicle, provides mental access to another conceptual entity, the target, within the same cognitive model” (Radden and Kövecses 1999: 21). Consider, for instance, the following example provided by Kövecses (2010):

- (17) I’m reading *Shakespeare*.

There is obviously incongruence present in the expression as a person (Shakespeare) is being considered as a book or literary work but both the source and target are within the same cognitive frame or domain. Rather than a metaphor, this is a metonymy using THE PRODUCER FOR THE PRODUCT (THE AUTHOR FOR THE WORK). In general, metonymy creates mappings where one aspect of a concept stands in for another such as part for whole, individual for class, or entity for attribute (Croft and Cruse 2004; Hilpert 2006). There is no incongruence present in the mapping as the reference is within a single cognitive model rather than creating associations between different cognitive models (i.e. domains). As such, identifying metaphor through literal incongruence of units to context also allows the separation between metaphors from metonymies.

To summarize, the tradition within cognitive linguistics has presented metaphor as a mapping between domains while metonymy is a mapping within a domain (Panther and Thornburg 2007: 238). While this study is not focused on metonymy, there is a need to clearly differentiate between the two cognitive actions so not to conflate metonymy with metaphor as part of the discourse analysis.

3.3 Metaphor dimensionality

Development in CMT has positioned conceptual metaphors not simply as a conventionalized and simple association between a single source and a single target but a rich and layered conceptual structure that builds from persistent, abstracted concepts such as image schemas (Johnson 1987, 2005, 2007; Lakoff 1987; Clausner and Croft 1999; Dodge and Lakoff 2005; Gibbs 2005), superschemas (Grady 2005) and primary metaphors (Grady 1997, 2005). These concepts act as foundational elements on which conceptual metaphors are constructed and, thus, are important aspects of metaphoric systems when considering their structure and dimensionality. The concepts engage the systematicity of metaphors, a central concept for

organizational structure and something that should be addressed before discussing metaphor dimensionality through schemas and primary metaphors (Lakoff and Johnson 1980).

Systematicity has been used in different ways by metaphor scholars. The use of the term focuses on reinforcing coherence in cognitive structures and can be divided into *internal* and *external* varieties of systematicity. Internal systematicity is defined as the operation by which all linguistic expressions can be grouped under a conceptual metaphor as coherent instances of that concept rather than isolated statements. In this way, we get “I’m feeling up” and “my spirits rose” as expressions of UP IS HAPPY or the many linguistic expressions of the conceptual metaphor LOVE IS A JOURNEY such as “Look *how far we've come*. It’s been *a long, bumpy road*. We can’t *turn back* now. We’re at a *crossroads*. We may have to *go our separate ways*. The relationship isn’t *going anywhere*. We’re *spinning our wheels*. Our relationship is *off the track*. The marriage is *on the rocks*. We may have to *bail out* of this relationship” (Lakoff 1993: 206). In contrast, external systematicity describes the relationship between several conceptual metaphors that share either a source or a target domain. For example, the concept of UP provides an orientation to concepts such as GOOD, HAPPY, HEALTH, ALIVE, CONTROL and STATUS. As a source domain shared by various target domains, the concept UP is coherent across all usages as it consistently provides a positive connotation whether general well-being or social positioning (Lakoff and Johnson 1980: 18). As such, a metaphor such as GOOD IS UP has external systematicity with CONTROL IS UP, ALIVE IS UP and so on. External systematicity is also known as *structural coherence* as it maps across concepts and provides the *structure* for that mapping. External systematicity suggests that the use of metaphoric information will be coherent with the way knowledge is structured in a society and that all instances of the meaning of a term will be in alignment with other meanings using the same term. The original theory comes from the connection of sensorimotor based orientational metaphors applied to cultural applications with the claim

that any reference to *more* or *bigger* will align with notions of *up* and less or smaller with *down* (Lakoff and Johnson 1980: 22). External systematicity is considered to be hierarchical with some values consistently prioritized over others based on contextual relationships, such as when an expression such as "the crime rate is going up" is mapped automatically to MORE IS UP rather than GOOD IS UP as crime is culturally regarded to be negative so is incompatible (and non-coherent) with up being a positive value.

The principle of systematicity has been extended to address not only the internal and external coherence of cognitive systems but also to engage which aspects of source domain information are mapped as well as "a tendency to cluster into families of metaphors sharing common source and target domains" (Wallington 2010, 209). The theory suggests that there is some constraint on our conceptual mapping systems and that "people do not import random facts from base to target, but instead project inferences that complete the common system of relations" (Gentner et al. 2001: 200-201). Systematicity in conceptual metaphor predicts that domain information has an *informational hierarchy* where some aspects of the domain are more salient in some situations than others (Gentner et al. 1988: 172).

While systematicity focuses on interrelational hierarchy of concepts involved in metaphorical structure, it is also important to address ontological hierarchy as the latter provides the dimensional information which is involved in the former. Ontological hierarchy of conceptual metaphors is presented in CMT through the proposals of rich dimensionality of domain structure built from schemas (image, super) and primary metaphors into conceptual and then linguistic metaphors. It is the underlying structures which allow for the complex assembly of domain information involved in systematic mapping. Where systematicity reinforces which aspects of a domain is mapped (operations) and target/source identification represents the domains present (cognitive framing), schemas and primary metaphors provide the material which is *to be mapped* (structural dimensionality). When addressing discourse

intentions, it is useful to examine the type of concepts which are linked and how they might be constrained as part of a layered, structural relationship rather than focusing too strongly on the source-target relationship.

3.3.1 Image schemas

The introduction of image schemas as a fundamental cognitive operation suggests that presence of a fully embodied, experiential cognitive system (Johnson 1987, 2005, 2007; Lakoff 1987). Image schemas are important to understand metaphor structure and dimensionality in cognitive patterns since, as currently theorized, they are the most basic concepts relating to our experience which cannot be reduced or decomposed into any smaller elements. Technically, image schemas have traditionally been defined as “dynamic analog mental representations of spatial relations and movements in space” (Gibbs 2005: 115), extending the sensual experience into cognitive operations (Dewell 2005). Early explorations into this concept stressed the nature of these representations as grounded in force dynamics, body movements and orientation which then are spatialized (Mandler 2005). A more general definition positions image schemas as “recurring patterns of organism-environment interactions that exist in the felt qualities of our experience, understanding, and thought” (Johnson 2005: 31). However, as Hampe (2005) points out, even though these definitions exist, image schemas are not well understood or even well defined.

The term *image* will need to be qualified as it has been applied in two different senses in Cognitive Linguistic literature. The first sense of image refers to mental representations of experiences developed through sense modalities. It is this sense which is used in reference to content in primary metaphors as well as forms the basis of the theory of image schema. For example, schemas used as sources for conceptual metaphors, such as HEAVY, UP, BRIGHT, WARMTH, and PROXIMITY, all have image content as we can clearly associate these concepts

with basic sensory experiences although they come from different sense modalities (Grady 1997: 28). The importance of this association cannot be underestimated as it forms the premise “[...] that we organize our understanding of the world by classifying and categorizing reality according to our primary experiences” (Caballero 2006: 33). The second sense of image is strictly confined to *visual* modalities of experience connected to the understanding *image metaphors* rather than image schema or source content of primary metaphors.

3.3.2 Primary metaphors

Building on image schemas as understandings of lived sensori-spatial experience, primary metaphors have been proposed (Grady 1997) as a significant link in translating sensory experiences into subjective understandings. Primary metaphors bridge between image schemas and more complex metaphorical constructions by the proposal of superschemas (Grady 2005) which organizes image schemas into generic categories – i.e. UP is an image schema but it is part of SCALAR PROPERTY superschema. A primary metaphor, then, uses the superschema category as part of the source-target mapping. In this way, primary metaphors share the same structure of conceptual metaphors with a source and target mapping but use experiential associations instead of domains of knowledge as part of that source-target association. An example of a primary metaphor would be the metaphorical sentence “Your theory is *constructed* out of cheap *stucco*” instantiating the structural metaphor BUILDINGS ARE THEORIES (Lakoff and Johnson 1980: 110). Grady (1997) showed how this structural metaphor did not stop at BUILDINGS ARE THEORIES but could be decomposed into the more general primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE. In the same way that there are many types of chairs in the category of furniture, as a primary metaphor, (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE is associated with more than just metaphors using the BUILDING source domain. In fact, any conceptual

metaphor that draws upon a physical structure to conceptualize abstract organization would be found under this primary metaphor. Other linguistic examples of this primary metaphor included:

- (18) they *tore* the theory to *shreds*
- (19) she was able to *weave* the notion of attachment into her theory
- (20) he spent a lifetime *crafting* his theory of memory

In these examples, while THEORY is still the target domain, the source domain in (18) and (19) is FABRICS or TEXTILES while the source domain in (20) would be a physical hand-based craft such as WOODWORKING. While FABRICS, BUILDINGS and HANDICRAFTS seem to be rather unrelated at first glance, they share the same primary metaphor as BUILDINGS ARE THEORIES. The inferential import in each of these examples share a common conceptual principle: the part of the source domain involved in the metaphorical mapping is based on the physical (dis)assembly of human artefacts with complex physical structures made of many parts or involved actions. It is only this aspect of the source domains along with its system of relations that are transferred and used to understand complex abstract ideas (i.e. external systematicity).

Metaphorical expressions can be complex and often when an expression is decomposed into conceptual and primary metaphors, the result is several primary metaphors along with multiple schemas combining to create the inference pattern. Evidence of this effect was noted by Grady (1997) when he showed that THEORIES ARE BUILDINGS could not only be decomposed into the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE but also included the second independent primary metaphor VIABILITY IS ERECTNESS. A further example can be seen in this example:

- (21) The novel and the poem, though each an act of communication, are *windows* to a reality (Benedikt 1987: 8)

The example (21) has the source domain BUILDINGS (or BUILDING ELEMENTS) and is an example of the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE as the metaphor uses an aspect of the physical environment to structure our knowledge of abstract ideas – in this case the specific reference is “windows”. However, the single primary metaphor is not enough to infer the meaning of the statement and there are other correspondences involved. While the conceptual space of a poem or novel is considered as a physical object, the selection of a window as the physical object introduces a second inference which is not about *structure* but *view*. The metaphor operates through associating (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE to a second primary metaphor CONSIDERING IS LOOKING AT as a corollary of KNOWING/UNDERSTANDING IS SEEING (Grady 1997: 296). It is through the presence of both primary metaphors that meaning is inferred by this sentence.

The introduction of primary metaphors into CMT addresses several issues when looking at conceptual metaphor data. First, as noted above and previous chapters, there are often issues identifying domains precisely as domains can be interpreted differently by different researchers or there seems to be several domains involved in source content. As Grady notes, “Many primary metaphors cannot be said to arise from experiences in some one particular domain. For instance, if there is a basic mapping between acquiring desired objects and achieving goals, as a wealth of data indicates, such an association could arise in any number of situations, from fishing to reaching for a favorite toy” (Grady 1997: 71). The theory of primary metaphor starts to address the difficulty when the concepts involved in the mapping were identified as experiential image concepts (OBJECT, BALANCE, EQUILIBRIUM, and PROXIMITY) and superschema (SCALAR PROPERTY, SCALAR BINARY RELATION, BOUNDED PUNCTUAL EVENT, UNBOUNDED ENTITY) rather than clearly defined domain objects. Second, primary metaphors are a continued development

in addressing differences in the nature of the mapping system of metaphors, reinforcing the depth and complexity of conceptual metaphors which are built on the experiential motivation of correlational information rather than understanding of metaphor as an act of similarity through the Aristotelian tradition. Abstracting the conceptual structure to the primary metaphor level allows for a greater understanding of how conceptual metaphors, and thus the human conceptual process, are interrelated by underlying structures. Often a single primary metaphor can be found supporting several conceptual metaphors which then appear as many seemingly diverse linguistic expressions – expressions that do not at first appear to be related.

When decomposition is used to analyse metaphors, stressing the layered and hierarchical relationship of several metaphors, the focus prioritizes evidence of human universals through correlational motivations based in embodied experiences rather than relations or attributes between domain objects (Grady 1997: 139). However, it is possible that this focus could suppress those mappings in which meaning resides in more culturally driven content. The issue is one of discourse motivation and whether abstracted mappings such as primary metaphors and image schemas are actively engaged in creating meaning through the application of universal human experiences (Zinken et al. 2008: 15). As the purpose of this dissertation is to examine latent priorities associated with meaning in the architectural target domain through conceptual metaphor, the attempt would be not to presuppose or prioritize universal, sensori-motor elements of human existence as it seems unlikely that the cultural or situated content of the metaphors could be lightly ignored.

3.4 Metaphor classification

The significant attention on conceptual metaphor in the past couple of decades has led to several proposals for categorizing types of metaphors. These classifications often occur in binary couplings such as conventionalized versus novel (Lakoff and Johnson 1980; Gibbs

2006; Hanks 2006; Grady 2007a); compound versus primitive (Gibbs 2006); complex versus primary (Grady 1997); or sensorimotor versus enculturated (Johnson 1987, 2007; Hellsten 2002; Zinken et al. 2008;). In addition to these larger categories, further classification is found within CMT starting with the original ontological, orientational, and structural taxonomies proposed by Lakoff and Johnson (1980) to later typologies of correlational and resemblance (Grady 2007b), image/imagistic (Lakoff and Turner 1989; Caballero 2006), and structural and non-structural (Ruiz de Mendoza Ibáñez and Pérez Hernández 2011).

Simply because two domains of knowledge are involved in the construction of a concept does not mean that there is uniformity or universality to metaphors – hence the need for taxonomies. As metaphor is a mapping system, the identification of patterns in the information and structure of domain knowledge allows insights into human cognition as well as values that are held at a more local level, be it political entities, language groups or discourse communities. The relationship between these classification systems seems complex, yet each taxonomy is representative of a different focus on organizing principle, namely whether the organizing principle is based on (1) the nature of the source domain, (2) the degree of genericity, or (3) the nature of the mapping system (Ruiz de Mendoza Ibáñez and Pérez Hernández 2011: 169-180). Of course, each of these parameters then define a different taxonomy.

We can start to understand some of the issues in conceptual metaphor construction and classification by looking at the following examples of architectural text from a corpus:

- (22) it also *irons out* the things that would give the particular places their distinct character. (Ballantyne 2011: 48)
- (23) He seeks *to bring* things into relationship, including with us, and also *to bring them into balance*, such as architecture with nature, and technology with history. (Buchanan 2012: 15)

Both examples above are considered to be metaphors when using an identification standard of literal incongruence between two domains of knowledge as (22) spatial qualities cannot be physically manipulated and (23) relationships are not physical objects. As noted previously, the recognition of incongruence is possible due to associating concepts into domains and then considering if those domains also share associations. For CMT, this translates into a traditional approach to classify conceptual metaphor by focusing on basic level source and target domains (Lakoff and Johnson 1980).

One of the criticisms of CMT comes from the stress metaphor identification places on domains and suggests that between the overlapping nature of source domains, researcher bias, and “ad hoc compartmentalization on the data” (Haser 2005: 245), source domains can be challenged as being arbitrary. In the case of the above examples, conceptual metaphors can be identified as having the following mappings: (22) SPATIAL QUALITIES ARE FABRIC and (23) IDEAS ARE OBJECTS. However, the issue of clear source identification can be seen from just these two examples having sources that are difficult to determine precisely or seem vague but with stronger relationships to image schemas.

When considering the use of “irons” In (22), it can be questioned if the source domain is FABRIC as the target of the action flattened, DOMESTIC ACTIVITIES as the act of ironing, or SMOOTHING as a physical event of making things clear which ironing is a representative example (which also then includes a mapping between vision and ideas such as TO SEE CLEARLY IS TO UNDERSTAND). The latter would be the choice if considering semantic and situated content, but the first two could also be considered valid source domains depending on the researcher. The next example, (23), raises similar questions but rather than multiple source domains being identified, there is a lack of specificity to this source. “Architecture”, “nature”, “technology” and “history” are considered as objects that can be manipulated by a human – i.e. they can be carried, positioned and put “into relationship”. Yet, it is unclear if

this is specific domain knowledge as the concepts recognized in this quotation, OBJECT, BALANCE, EQUILIBRIUM, and PROXIMITY, have been proposed to be image schemas that operate as part of the building blocks of all domains of knowledge rather than domains (Johnson 1987; Lakoff 1987; Croft and Cruse 2004; St. Amant et al. 2006; Hurtienne and Blessing 2007).

The point of this discussion is to illustrate that sometimes simply identifying source domains does not provide salient information by which to understand metaphor use or make claims of how metaphor structures cognition. The same argument can be applied to target domains with the consideration of the domain shifting based on perspective. Rather than simply looking at sources and targets, conceptual metaphors can be understood through taxonomy systems and there are three major classifications that are identified in the literature. The first taxonomic system identifies metaphors on whether they are based in cultural or sensorimotor knowledge while the second uses the categories of conventionality versus novelty in the awareness to classify metaphors. The third taxonomic system is based on the nature of the mapping system, identifying metaphors as either being motivated by mappings based in resemblance between domains or through correlational association between concepts grounded in human experiences.

3.4.1 Cultural versus sensorimotor

The linguistic expressions of conceptual metaphors found in discourse are of varying complexity, often associated with larger semantic frames, organized by higher order associations and containing compound schema, domain and inference patterns. Because we are socio-cultural beings, often these mechanisms are cultural, reflecting historic and socially constructed knowledge driven by human associations rather than only physical, experiential knowledge (Geeraerts 2006a: 5). Sometimes cultural knowledge is used to activate

experiential knowledge. The concern of CMT in defining human universal cognitive operations (i.e. sensori-motor) has connected conceptual schemas to cognitive models through a division into “commonplace models” and “cultural models” (Lakoff and Turner 1989: 67). Commonplace models place metaphor acquisition through non-semiotic experience via sensorimotor knowledge, while cultural models stress learned knowledge.

Cultural models allow access to knowledge developed about things that we have not experienced directly but acquire through association with others, connected to large background systems identifiable to distinct domains or frames which are then bound to context through situatedness (Croft and Cruse 2004: 58; Kimmel 2005). As such, cultural knowledge is any knowledge assigned a value and signifying meaning through socially based conventions rather than being experienced *directly through the sense of the body or sensory perception*. We use many terms in as part of a metaphor expression which have not be directly experienced by the person crafting the statement, such as:

- (24) Airports, provisional accommodation for those going elsewhere, inhabited by assemblies united only by the imminence of their dissolution, have turned into consumption *gulag* (Koolhaas 2002: 187)

When Rem Koolhaas refers to airports as being *gulags* in (24), the expression maps the experience of being at an airport through understanding it as a type of prison where the forced labour is buying things. The recipient of the expression might have never been to a prison but the concept is understood through cultural knowledge. This reference involves more specific cultural information as it is not just the general condition of a prison being referenced (i.e. unable to leave) but a “*gulag*”. The term refers to a particularly harsh Soviet prison work camp system and carries contemporary connotations of being not only incarcerated but geographically isolated in severe environmental conditions and oppressed under a despotic

regime³. The current use of the term is only cultural and not directly experienced as the term has its historical roots in the Soviet government agency that administered forced labour camps, a system which ceased to exist formally in the 1960s.

Other cultural references might be more embedded in our understanding than a historical reference to a prison system. The days of the week or the concept of labour are also cultural ideas, existing as constructs that have been developed between people and societies (Lakoff and Johnson 1980: 65). While we can understand spatialized information of our environment such as UP and DOWN through direct experience, many objects in our environment are only identifiable through cultural knowledge where meaning is constructed through social interaction. To consider how something that seems a natural part of the world is culturally constructed, we only have to ask what makes something a hill but not a mound or a mountain; or why a body of water is a lake but not a pond or a sea. The boundaries between these environmental terms are understood through cultural standards using human-defined boundaries. I may use the term “monkey” or “pig” as source content in a metaphor while never having interacted or observed either directly. Rather, my knowledge of these animals as used in communication comes from social norms of how the animal is understood and represented by others. The same goes for wolves, which are known to avoid humans but are modelled culturally to be vicious, predatory and overly aggressive towards people (Lakoff and Turner 1989: 66).

³ The term *gulug* is an acronym of the Soviet agency Главное управление лагерей, *Glavnoye Upravleniye LAGerej* or “Main Camp Administration” that administered force-labour camps under Joseph Stalin from the 1930s to the 1950s English (Applebaum 2003). The camps were isolated and scattered geographically, but also included a high mortality rate which provides context for the normative semantic use of the term in a metaphor.

The importance of situated knowledge returns us to an earlier question about the role of image schemas in motivating metaphorical expressions and their interaction with cultural content, especially considering evidence of the presence of primary metaphors. Grady (1997) has proposed primary source content as a related concept to image schemas, although he recognizes that image schemas have included concepts that are “highly dependent on culture, geography and history” (188), making their role as persistent and universal source (i.e. evolutionary) material questionable as defined in current theory. However, there is not currently a good understanding of the relationship between image schemas and cultural constructs. Grady uses the example of pine scent, which has imagistic content and is not decomposable. However, it is also not universal nor biologically coded. As such, while pine scent might be a basic concept, CMT scholars accepting primary metaphors and concern for primary source information would find the cultural association of this schema problematic (Grady 1997). Scholars in cognitive anthropology and discourse studies applying conceptual metaphor as a research tool refer to cultural schemas operating alongside image schemas (Quinn 1991; Kimmel 2004; Cameron et al. 2009). Cultural schemas operate in the same way as image schemas but rather than being universal coding of body knowledge, they are “shared social and cultural knowledge in the group” (Cameron et al. 2009: 71). The introduction of cultural schemas questions how they are associated with primary metaphors, if we are to consider the primary metaphor as structured associations of image schemas via groupings of superschemas and primary scenes.

In addition, a theory of discourse metaphor has been recently proposed (Zinken 2007; Zinken et al. 2008), defined as “a relatively stable metaphorical projection that functions as a key framing device within a particular discourse over a certain period of time” (364). A discourse metaphor addresses metaphorical expressions that use cultural source domains and seem to be an extension of the proposal of cultural schema. They start to examine the

relationship between metaphors and patterns of conceptualization in order to engage the question: “which metaphors (if any) are culture-specific, or narrowly distributed across cultures, and which ones (if any) are universal or broadly distributed?” (Grady 2007a: 204)

The assumption has been that primary metaphors are broadly distributed and universally conceptualized building on generic human operations of image schemas. However, it is possible to identify proposed primary metaphors that are based in cultural content rather than sensorimotor expressions such BELONGING IS HAVING ROOTS, CLONES ARE COPIES, NATION-STATES ARE HOUSES (Zinken et al. 2008: 15). Each of these examples use knowledge constructed from cultural association differing from the previous examples of (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE and VIABILITY IS ERECTNESS (Grady 1997: 45). In contrast to the creation of an entire new category of primary metaphor and defining a new set of schemas, it is also possible to claim that image schemas, and perhaps primary metaphors depending on the relationship of schemas to scenes, can be considered socio-culturally grounded based on situated evidence although this is only apparent when considering their use through context (Kimmel 2005: 286).

Considering this, we can ask if all expressed metaphors using cultural knowledge still build on more general sensorimotor foundations. It raises the question of the relationship between cognitive metaphors, primary metaphors, image schema and cultural schema when considering if the communication value of the expression is found at the schema association with the cultural expression as a frugal vehicle or if the meaning is inaccessible without the cultural association (i.e. an absence of sensorimotor schemas). This becomes an important question considering methodology of a research project surveying evidences of qualitative value in a discipline through conceptual metaphor. It also stresses the importance of situated knowledge in the interpretation of metaphors found in corpus examples. The classification of metaphors based on cultural and sensorimotor sources has been recognized within CMT since

its inception, with the focus of the theory developing attention towards the exploration of universal embodied principles through sensorimotor content (Lakoff and Johnson 1980; Lakoff 1987; Johnson 1987, 2007; Gibbs 2004, 2006, 2008). However, this approach has tended to study evidences of metaphor isolated from context, while other metaphor research, also building on CMT, is more concerned with how metaphors are used to infer meaning in human cultural structures (Charteris-Black 2004, Cameron et al. 2009; Cameron 2010; Cameron and Maslen 2010; Kimmel 2008a, 2008c, 2010, 2012, 2013). This latter group of studies do not negate theories of image schemas or primary metaphors but seek to engage a more nuanced view of the application of both. While it is beyond the scope of this current research to engage some of these important and pressing questions, the differing role between sensorimotor and cultural knowledge needs to be integrated into the methodology of the project. It is also necessary to acknowledge the complex relationship that occurs between biological and social knowledge, suggesting that it might be difficult to isolate one from the other if examining situated data.

3.4.2 Conventional versus novel

One of the revelations presented in the seminal work *Metaphors We Live By* (Lakoff and Johnson 1980) was the fact that we use metaphors in linguistic expressions constantly but fail to recognize the concepts *as* metaphors. This is because the expressions have become so conventionalized that the association of two domains of knowledge is not identified. The distinction between metaphors that are used deliberately in communication and those that are conventionalized due to cognitive significance grounded in human experience is one of the core distinctions in CMT, with the theory being focused on evidences of embodied processes. It was the recognition of the conventionalization of linguistic metaphor that lead to the understanding of these expressions as evidences of underlying conceptual metaphors and the

systematicity of these concepts. This does not mean, however, that novel metaphors generated on an ad hoc basis are not part of the same conceptual structure as conventionalized metaphors, although most of the attention addressing the difference between novel and conventionalized metaphors is focused on mental processing rather than conceptual structure (Bowdle and Gentner 2005; Kintsch 2008; Giora 2008; Cameron et al. 2009).

Early CMT theory classified novel metaphors as being different to conceptual metaphors, dividing metaphoric expressions into conventionalized *conceptual* metaphors and novel or ad hoc metaphors, which included *image* and *imaginative* metaphors (the latter was also called *creative* and *new* metaphors) (Lakoff and Johnson 1980: 53, 139; Lakoff and Turner 1989: 99; Lakoff 1993: 229). In addition, image metaphors were considered a subspecies of imaginative metaphors, distinguished from conceptual metaphors by stressing visual-to-visual correlations rather than more abstract domain-to-domain information (Caballero 2006: 66). Image metaphors are considered to be structurally simple, novel (one-shot) and lacked the systematicity of the former, mapping “only one image onto one other image” (Lakoff 1993: 229). However, whether all image metaphors are unconventional, one-dimensional and based on resemblance is in question. The shallow interpretation of image metaphors has been challenged using the discourse context of architecture where inferential richness can be found and the clear distinction between conceptual and visual knowledge is absent (Caballero 2006).

Later revisions to CMT included image metaphor as part of three subcategories of novel metaphors, addressing the earlier separation between conceptual and non-conceptual expressions. CMT now acknowledges that both conventionalized and novel metaphors are conceptual in nature with novel metaphors using the same cognitive systems as conventionalized metaphors (Lakoff 2008: 25). Novel metaphors can be subcategorized to be

either (1) a unique instance of an existing conceptual metaphor, (2) a completely novel metaphor based on systematic mapping, or (3) an image metaphor where there are no mappings of rich knowledge.

One of the major difference between novel and conventionalized metaphor has been said to be the situated nature of the former as novel metaphors “involve domains that are construed in context” rather than being previously coded (Croft and Cruse 2004: 209). The examples above suggest that that the relationship is more complex than this and discussion in this dissertation will attempt to show that conceptual metaphors require discourse context to construe relevance of domain present regardless if they are novel or conventionalized. However, one aspect we can question in the relationship between novel and conventionalized metaphors is if the novel metaphors are the source for the conventionalized metaphor – i.e. do metaphors become conventionalized through repeated use? This proposal has been extended through the *Career of Metaphor* theory with the further claim that “[n]ovel metaphors are processed as structural alignments between the concrete or literal representations of the base and target, but as repeated comparisons are made, the metaphorical meaning is gradually abstracted and comes to be associated with the base term” (Gentner et al. 2001: 228). The difference between novel and conventional metaphorical instances has been theorized to rest on whether the base term has been associated with a domain-general category or not. As there is no salient feature codified through cultural use, the inference of the metaphor can only be through comparison (Bowdle and Gentner 2005: 198). At the same time, some metaphors could be considered more metaphorical based on the semantic resonance of terms and distance between source and target concepts. This would allow metaphors to be classified through gradations rather than absolute categories of novel and conventional (Hanks 2006).

3.4.3 Resemblances and correlations

The final taxonomic system based is based on the motivation typology of conceptual metaphors. The classic theory of metaphor is derived from an Aristotelian perspective and presents metaphor as comparisons between two things through similarity. The metaphoric expression is often found in the form of a simile (X is like Y) and directly associates similarities between source and target domains. As discussed above, there is a difference between a cognitive mapping that results in a simile and one that produces a metaphor. Similarity theory posits that metaphors are created through the commonality between two concepts in two different domains of knowledge. The similarity theory has been rejected by conceptual metaphor theorists (Lakoff and Turner 1989: 198; Grady 2007b: 324) as well as design theorists (Coyne and Snodgrass 1992: 65) based on metaphoric analysis. The analysis suggests that metaphor is not driven by similarity but instead creates similarity through the construction of the metaphor.

The major issue when considering similarity as the operative function of a metaphor is the suggestion that *all* metaphors are driven by similarity as a type of comparison rather than a rejection of similarity as being part of metaphorical structure. As such, the key error in this theory has been shown to be two-fold. First, not all metaphors are constructed through similarity as there are many examples of metaphors that exist in different forms and have different motivations. As Grady (2007b: 324) notes “it is difficult to see how a metaphor like HAPPY IS UP (Lakoff and Johnson: 1980), as in ‘She is in high spirits,’ could be based on an objective similarity between mood and vertical elevation. Nor is coldness ‘similar’ to lack of emotion, as Searle acknowledged. Yet these concepts are metaphorically equated.” It is just not possible to define the large body of metaphors based on associating embodied experiences as a mapping between similarities. The second issue is the stress that similarity theory puts on the literalness of the mapping. As a metaphor is a mapping between domains

that produces incongruence and similarity theory is based on a literal mapping that links commonalities between domains, there is a conflict in definition. As we have discussed above, this would make similarity theory the operation behind a cognitive simile but not a conceptual metaphor.

Rather than similarity theory to describe the motivational structure of conceptual metaphors, metaphors have been shown to operate through two types of domain relationships (Grady 2007b). These are whether the metaphor is structured through *experiential correlations* or if it is based on comparison through *resemblances* (Grady 2007b). The difference between resemblance and correlational metaphors is provided by a network model of concept hierarchy.

The resemblance hypothesis suggests that metaphors using comparative information come in two forms – either relational content which forms the basis of a theory of analogy (Gentner et al. 2001) and includes GENERIC-IS-SPECIFIC mappings (Grady 2007b), or attribute content which forms the basis of image metaphors (Lakoff and Turner 1989). The outcome of both mapping systems is a metaphor as there is a transfer of knowledge using comparison across domains of knowledge that produces incongruence. However, there is a clear difference in how the domain information is associated, what type of information is used to drive the expression, the conventionalization of the metaphor and whether it involves cultural content. To illustrate how metaphors can be motivated by either attributes or relations as a type of resemblances, we can examine the following metaphorical expressions that use the same source domain of NAUTICALITY with the associated concepts of *ships*, *sails*, *prows* and other nautical terms.

- (25) A tall office tower and a lower residential building overlooking the Royal Botanical Gardens both have *sail-like* curving (Buchanan 2012: 5)
- (26) The final work, I believe, should eschew these principals completely,

offering itself rather *as does the “bow” or prow of a ship to a christening ceremony* (Kwinter 2008: 173)

The first example (25) uses attribute information to create a resemblance mapping between SAILING SHIPS and BUILDINGS. The primary mapping in the metaphor focuses on the gentle curve of a sail formed by the pushing of wind to make a shape relationship with the form of the building as an *image metaphor*. This type of metaphor has been considered to have special status (Lakoff and Turner 1989: 90), but Caballero (2006) has made a strong case for the systematic role of image metaphors in architectural discourse and as a tool in architectural design, opposing the normative point of view that these variants are non-productive and “fleeting cases of metaphor” (3). Examining image metaphor from the point of view of resemblance mappings shows it to be clearly an aspect of metaphors using attribute mappings to link domains.

While the first example uses the attributes of shape, the next example (26) also maps from the source domain of NAUTICALITY (as the more expansive interpretation of domain category) but uses very different type of domain information. Rather than attribute or image information to construct the metaphor, the “bow” of the ship is presented in a scenario in which the relations between objects in one domain are used to explain a new context in a different domain (ARCHITECTURAL PROJECT). The bow as an object is important because it plays a particular role in the scenario that the expression describes rather than its shape or image content. As the metaphor uses relational information, this would be considered by some scholars to be an analogy as a type of metaphor (Gentner et al. 2001). An analogy is thus defined as a resemblance metaphor that builds similarity through the mapping of relations between two domains. Resemblance metaphors allow for a single salient feature to structure the mapping whether based in relations or attributes.

Many of the metaphors of interest to CMT do not depend on comparison mappings with either attribute or relational content but are created through associating experiential knowledge (i.e. spatial movement, spatial location, equilibrium, or force dynamics) with more abstract target domains such as feelings, time, finances or life events (Lakoff and Johnson 1980; Lakoff 1993; Johnson 1987; Lakoff 1987; Grady 2007b). These are defined as correlation metaphors as they use “specific, recurring experience types, and [...] have direct experiential motivation” (Grady 2007b: 331). As Grady (2007b: 325) suggests, correlation metaphor “are best accounted for in terms of co-occurrence, rather than resemblance” as there are no shared features or association which can explain the metaphorical association. In the next example, which also uses the source domain of NAUTICALITY, there is no direct mapping between the domains but instead an association of two concepts which are not logically connected.

(27) Beneath the Kimbell’s porch vaults we are drawn up—inhaling,
sailing—with them (Benedikt 1987: 56)

In the expression above, it would be difficult to understand the metaphor as motivated by resemblance as there is no comparison present by the viewer being “drawn up—inhaling, *sailing*—” in a relationship with the repeated shape of the barrel vaults of the museum. The building does not physically look like a sailboat and there are no mappings of attributes of keels, sails, bows, smooth hulls, or sleek lines. Nor does the building move at all, let alone in the same type of smooth motion with the sense of being pushed through the force of wind as relations between elements in the source domain. Instead, the metaphor uses a type of information that is about “the role of our perceptions and representational schemas” rather than facts about the world (Grady 2007b: 325). The sailing qualifies the *type* of interpretation of motion and the reference of FORCE DYNAMIC image schemas operating through the cognitive engagement of the viewer with the environment (i.e. a correlation between concepts

rather than a resemblance). In this case, the viewer is conceptually pulled along through the visual rhythm of the physical structure (what architects would call the formal nature of the space) activating the primary metaphor FORM IS MOTION, a fairly standard mapping in architecture (Caballero 2006: 121). There is no logical relationship between the shape of objects and the interpretation of motion when considering a literal similarity, nor is there any resemblance information present. Instead, we have a pre-existing correlation between the interpretation of form and the projection of motion.

3.5 Summary

The discussion in this chapter highlights the structure and dimensionality of conceptual metaphors. The taxonomy systems are not independent but simply different ways of classifying metaphors. Every metaphor can be assessed to whether it is a novel occurrence or a conventionalized expression, whether it uses sensori-motor information or applies cultural knowledge, and if the mapping is based on resemblance information or correlations between domains without a conflict between taxonomies. Rather, there are patterns between the categories as many metaphors using cultural knowledge are based on underlying conceptual or primary metaphors using sensori-motor content or a novel metaphor might be an instance of a conventionalized metaphor. In addition, correlational metaphors are, by nature, highly conventionalized and have a tendency to be driven by sensori-motor schemas as they often resolve from experiential body knowledge rather than cultural constructions.

A discussion of classifying mapping systems leads to three observations regarding the relationship between the three taxonomy systems in a discourse context. First, it is clear that correlational and relation-based resemblance metaphors trend towards more complex and layered content while resemblances with attribute content appear to be the least dimensionally complex. This does not mean that attribute resemblances are irrelevant or less

effective in a discourse scenario, only that they are less structurally complex. Second, it seems impossible to separate metaphoric meaning from the situated context as there is a substantial loss of nuanced meaning in doing so. Third, while primary metaphors are clearly present, the source domain at the linguistic level is still important as it holds nuanced information to how the metaphor is employed and should be interpreted. Following the claims by Lakoff and Johnson who suggest that the “fundamental values in a culture will be coherent with the metaphorical structure of the most fundamental concepts in the culture” (Lakoff and Johnson 1980: 22), there is clear evidence that different forms of discourse have differing metaphor use and metaphor use will be a principle form of evidence of the ideological position of the participant in those discourses (Partington 2006: 268).

4. RESEARCH APPROACH AND METHOD

The aim of this dissertation is to explore the intellectual territory of architecture by engaging metaphor as a key component for codifying disciplinary positions and beliefs through metaphor's role "to evaluate events, people and their behaviour" (Partington 2006: 271). In order to do this, it is necessary to construct both a corpus of relevant texts as well as a method by which metaphors are identified and coded in that corpus. As discussed in previous chapters, metaphor has been shown to be historically and substantially involved in setting positions and approaches in architectural design. Most metaphors acknowledged by architects are those used as tools in the design process, found in various text sources from architectural monographs and building reviews to philosophical explorations and manifestos. More than just convenient devices to help explain building forms or linguistic flourishes, metaphor on a discourse and genre level has been shown to be able to reveal a community's worldview, underlying values by which decisions are made and define the focus of a genre's conventions (Caballero 2006). The purpose of this study is to construct a more nuanced understanding of the role of metaphor as it is engaged in architecture.

4.1 Constructing a corpus

The corpus under analysis consists of thirty articles by individual authors totalling 207,898 words. The articles belong to the genre of architectural theory as defined by Forty (2000). Article length varies from 2000 to 26,000 words with length considered less important than

focus. The study is concerned with synchronic analysis of contemporary architectural culture rather than a diachronic study of changes in that culture. Accordingly, all the articles are contained within a contemporary period between 1984 and 2013 and include topics that are representative of current values within the discipline.

The genre of architectural theory was chosen because of its qualitative importance in architectural discourse. The genre maintains the role of defining, recording, transferring and expanding the intellectual territory of the discipline of architecture. Architectural theory has been a persistent genre within architecture throughout its development in Western culture, spanning back to Roman architect Marcus Vitruvius Pollio in the 1st Century BC. However, there is a clear difference in how theory is approached by architects in contemporary culture with a rough demarcation point being 1968 as a temporal marker to indicate a cultural shift to Postmodern tendencies. The change in post-1968 architectural theory is the exploration and integration of non-architectural sources to construct values and informational priorities within architecture, including content from sociology, philosophy, politics, gender theory and literary criticism (Johnson 1994; Gelernter 1995; Nesbit 1996; Leach 1997; Jencks 2000). Overall, architectural theory is acknowledged to be affected by what are considered “external forces” such as the “historical, cultural, political and economic” (Sykes 2010: 26). While individual theorists attempt to expand architectural discourse through these extra-disciplinary explorations, in order to have relevance to the discipline (i.e. to be architectural), the inquires need to be grounded back into conceptual and physical situations of the human built environment.

It is important to note that architectural theory is written for, and by, architects who are either practitioners or academics. The title *architect* does not simply mean someone who is authorized by a licensing body to practice professional architecture but an individual who has developed enough deep disciplinary knowledge to engage in architectural ideas through

either physical or intellectual expressions. The genre has been noted to have many dimensions and multiple foci, stressing a perspectivalist position where architectural knowledge simply emerges from the interests of individuals, generating a discipline that considers a correct theory to simply be one that depends of the reader's "context and interests" (Fisher 2015). While individual claims to personal territory run rampant in architectural theory, the ultimate purpose is to allow "authors in the tradition [...] to] seek to account for what they and others do, and should do, in architecture" (Fisher 2015). As the genre has developed naturally and has historical continuity as well as being produced by those within the discipline, architectural theory represents what can be considered a natural discourse in the discipline of architecture.

The construction of a corpus that represents a contemporary sample of the genre of architectural theory involves taking into account a number of issues. First, following the observation that architectural theory has tendencies towards diverse and often conflicting viewpoints, architectural theory writing in the 20th and 21st century involves over a "100 trends and [...] and 60 movements, many of them 'isms' -- Futurism, Purism, Expressionism, Brutalism or Metabolism" (Jencks 2000). Many of these are seemingly disconnected, idiosyncratic and short-lived, although all of them are part of the larger cultural movements of Modernist or Postmodernist, the former addressing Utopian and Positivist attitudes and the latter taking many heterogeneous and eclectic positions (Gelernter 1995). Post-1945 architectural theory, and becoming more prominent in post-1968 architectural theory, philosophy, literary and cultural theory became more important as sources of knowledge within the discourse. These approaches included integrating concepts from phenomenology, environmentalism, semiotics, Marxism, literary theory, Chomskyian linguistics, information theory, and digital theories into architectural theory (Gelernter 1995; Nesbitt 1996; Fisher 2015). Some of extra-disciplinary forays were based on the metaphor ARCHITECTURE IS A

LANGUAGE (semiotics, linguistics, literary theory), while others were based on aligning architecture with philosophical positions or ideologies. In addition, many of these positions seem to be in opposition with each other, questioning whether a shared discourse is possible in architecture (Jencks 2000). However, in post-1990s architectural theory, many of clearly non-architectural ideas have been explicitly abandoned (Sykes 2010) although their influence can still be identified in current trends. Post-1990 architecture contains the dominant themes of typology, historicism, phenomenology, environmentalism, critical regionalism (authenticity), tectonics, Realism or hyper-realism (Dutch school), digital technology (blob architecture, parametricism), politics (capitalist iconistic) and feminism through gendered space (Nesbitt 1996; Sykes 2010; Fisher 2015).

Second, while there is exceedingly diverse heterogeneity of the ideas represented, there is excessive homogeneity in ethnic and gender representation in the genre. In any discipline, there are a limited number of individuals who represent important ideas and core attitudes. In architecture, it is considered that there “are probably no more than two dozen broadly influential intellectual leaders in the relatively small subculture of American architecture” (Saunders 2007: vii). This small population of influencers in contemporary architectural intellectual culture is centred around English-speaking countries and dominated by English language discussion – with the primary centres of discourse being the United States and the United Kingdom. While the small number of influential individuals and the regional focus might not be surprising, the result is an imbalance and substantial lack of diversity in the representation of both ethnicity and gender. Even considering the post-Colonial nature of Western countries and the globalized movement of individuals, architectural theory appears to lack significant representation by writings of non-white individuals. This is combined with an historical exclusion of female participants in the discipline regardless to ethnicity. The issue is noted by critics and historians, recognizing that

in many periods the field of architecture have been dominated by men (Jencks 2000). When looking at a survey of the intellectual territory of architectural theory that forms the current context, a span of years between 1900 and 2010, Jencks (2000), found “there are very few women among the 400 protean creators I have gathered from other writers.” Almost all prominent English-speaking architects involved in international architecture are ethnically white and male.

Third, the relative small number of thought leaders in the discipline might suggest that a corpus of representational work would be easily identifiable within architecture. Although it is possible to document influential work when looking from a bit of historical distance (Kruft 1994; Lefavre and Tzonis 2004) or even recent decades (Nesbitt 1996; Hays 1998, 2000), it is difficult to identify critically influential work in near-recent practice. This issue is exasperated in the genre of architectural theory by the insular and compartmentalized nature of the discipline, the way knowledge is transferred (direct instruction) and the tacit, situated nature of that knowledge. When these facts are combined with the wide range of ideas based on diverse ideological positions and the relative absence of standardized dissemination outlets, such as the lack of a strong formal research culture through journals, there is relative obscurity to core of contemporary architectural theory unless one is deeply embedded within the discipline. This is even more difficult if the corpus is to be considered representative of genuine disciplinary expressions as intellectual content in architecture (writing) is as likely to be influenced by philosophy, social or cultural theory than by architectural theory (Leach 1997). As a discipline, this is not problematic as many of these writings involve ideas that are translatable to issues of people in space (i.e. architectural content) and are important as tools to extend critical reasoning within the discipline. However, these extra-disciplinary texts are not part of the genre of architectural theory and do not represent the particular cognitive involvement of the architect with their subject.

Taking into account the aforementioned issues, the corpus under analysis consists of thirty articles written by individuals with deep architectural knowledge and focused on theoretical concepts grounded in architectural ideas. The common thread between the articles was the author's focus on discussing conceptual ideas and intellectual positions in relation to the built environment through the discussion of built projects and forms so to ensure architectural content. While it is impossible to fully isolate architectural thinking from cultural and technological discussions (architecture is ultimately about culture, politics, materiality, and the manipulation of form through human artifice), the requirement of the presence of the built environment operated as an indicator to ensure the focus was directly on architectural ideas. This focus allowed for the corpus to contain a variety of ideological positions rather than being focused on any one ideological strand with articles representing diverse ideologies such as post-functionalism, feminism, phenomenology, post-criticism, critical theory, new pragmatism, hyper-realism and environmentalism. This ensured a diversity in the range of ideas involved while ensuring the selected texts were part of the genre of architectural theory.

Since English is the dominant language in the architectural theory genre, the texts in the corpus are written by authors who were native English speakers or authors using English as a second language but having high proficiency. There is no intention of the study to make claims on any other language group. Any article that was identified as a strong candidate for inclusion but was found to be translated into English was eliminated from consideration (e.g. Pallasmaa 2005; Zumthor 2010). This was due to the issue that word and metaphor choice would have been filtered through a translator rather than being a natural expression of an architect. As such, it would be difficult to determine if the metaphorical expression was conventionalized as a way of thinking by a member of the discipline or whether it was a choice of a non-expert translator.

The corpus represents authors from a global culture of architecture with eleven countries of origins, although the majority of the authors are American (12 authors) or British (7 authors). The corpus is not diverse in either racial identification (all Caucasian) and gender (3 female authors). The authors in the corpus were selected with consideration for their current prominence in the intellectual architectural community, indicating that they are a representative sample of the way architects think. Thirty authors, and therefore thirty articles, were considered to be a sufficient sample size in relation to the relatively low number of influential authors in the architectural theory genre.

To ensure that the corpus was representative of deep disciplinary attitudes and current ways of speaking and thinking about architecture, the corpus articles were reviewed for time frame and intended audience. A general ideological shift that effected the entire discipline of architecture is traceable to the early 1990s, aligned with an upturn in economic prosperity and moves by industrialized nations towards globalization (Ibelings 2002; Saunders 2007). Accordingly, most of the articles of the corpus fall in a chronological range between 1992 and 2013. Articles older than 1990 (from 1984, 1986, 1987) were considered as still highly significant examples of architectural knowledge and part of the epoch shift referenced above. As the study does not address diachronic shifts in architecture through the study of metaphor, the isolation of the corpus to a clear period allowed for a reasonable assumption of coherence towards context.

Finally, the articles selected for the corpus are written for other members of the architectural discipline rather than the general public. This is important to ensure that the identified metaphors are part of deep disciplinary discourse rather than explanatory elements between architects and laypersons. In addition to confirming the nature of the article was addressing architectural theory and was originally written in English through the indicators above, all authors were assessed for their professional and disciplinary background. Only

authors who were educated as architectural theorists and historians with a professional architectural background (practitioner) or critics with deep applied disciplinary knowledge were included in the corpus. As noted, many influential texts in architecture are written by cultural theorists, philosophers or historians. These have been excluded from the corpus as these authors would not be representative of the disciplinary use of language to represent deep disciplinary ideas.

4.2 Metaphor identification

The research method for metaphor identification used in this dissertation follows the experientialist tradition of CMT (Lakoff and Johnson 1980; Lakoff and Turner 1989) with adaptations from cognitive theories of metaphor through genre and corpus studies (Geeraerts 2006b; Stefanowitsch 2006; Stefanowitsch and Gries 2006; Caballero 2006; Deignan 2006, 2008; Cameron and Maslen 2010; Kimmel 2012). The approach uses the identification of literal incongruence within a sentence or sentence fragment as a general procedure of metaphor identification, with the understanding that there will still be variation in interpretation when analysing for words in discourse (Pragglejaz Group 2007: 13). In alignment with the aim of this dissertation as a broad study of architecture through metaphor, it is important to include as wide a range of metaphor as possible rather than to limit the study to an aspect of conceptual metaphor such as only conventionalized expressions or only metaphors using sensori-motor motivations. Any expression that matches the theoretical threshold of literal incongruence between concepts occupying two domains of knowledge is identified as a metaphor regardless to syntactic form or user intention.

The comprehensive identification of conceptual metaphor in discourse is not straightforward and there are instances of ambiguity created through conventionalization, normalization and polysemy in a disciplinary context (Pragglejaz Group 2007: 3). This is due

to contextual forces in the shaping of meaning as natural communication which challenges the clear containment of a metaphorical expression as either a set formula (“X is Y”) or an isolated incident. The issue cannot be disregarded in a corpus approach. Along with sources of ambiguity listed above, other factors complicate the interpretation of what is metaphoric language such as if the expression is a metaphor or part of another type of literary expression with associated cognitive structure like a simile, metonymy, a proverb or an idiom. In these cases, the question is if a metonymy is part of a larger metaphorical structure, if an idiom is also a metaphor should it includes domain association, or if a proverb using metonymical information is further classified as a metaphor. As these are currently grey areas based on research bias, it is important to make the methodology for metaphor identification clear and appropriate for the goals of the research intention (Low 2008; Cienki and Müller 2008) and to address issues of how metaphors are identified, classified, and reduced to systematic concepts (Gibbs 2006: 12).

When studying a professional community, which maintains a robust and distinctive disciplinary discourse (i.e. the way architects talk to each other is known as “archispeak”⁴), one of the issues in identifying metaphors is how certain terms are understood by that community. Many times, expressions which would be identified as metaphorical by individuals external to the community are considered as polysemic and not recognized as a metaphor within that discourse group. This issue is brought clearly to point by Caballero (2006: 67-68) who lists variations such as 1) professional terms as fossilized collocations, 2)

⁴ Archispeak is considered by the layperson to be a collection of technical sounding and esoteric words used by architects to make themselves sound smarter, as documented by the Urban Dictionary (<http://www.urbandictionary.com/define.php?term=archispeak>). However, the terms used by architects follow the same characteristics as any other discipline – deeply coded and precise terminology that relate to specific content of architectural thinking.

professional terms using previously metaphorical content as literal expressions, and 3) the conventionalization of professional jargon. These three points stress situations when expressions with metaphorical content are considered as non-metaphorical by the discourse community. The reverse is also true where an expression or concept is identified as metaphorical by the discourse community but violates the structure of what analysts would consider to be a metaphor (i.e. A BUILDING IS A BUILDING as discussed in Chapter 8). In such a context, relying on a community's ability to recognize a metaphoric expression can be problematic for the clear identification of conceptual metaphors. The disciplinary issues of metaphor identification join previously noted issues in separating metaphor from other related cognitive structures such as simile and metonymy. A metaphor is defined as a mapping between two concepts which occupy different domains of knowledge where the association of the source term in the context of the target term produces incongruence between the literal meaning of that term or concept and the context in which it is used. The overall focus remains on the expression rather than breaking a sentence into lexical units and testing each unit for its basic meaning as isolated elements as suggested, for instance, by Pragglejaz Group (2007). As such, it is the intention of the sentence or sentence fragment in a discourse context which drives the identification of metaphor through the presence of incongruence (Cameron and Maslen 2010). The identified metaphors are understood to be discourse examples of metaphorical expressions which are the basis of analysing the presence of conceptual metaphors through decomposition. This approach allows for a clear identification of metaphors even when involving disciplinary discourse issues of fossilized collocations, normalization and professional jargon as well as a separation between metaphor and related conceptual expressions of simile, metonymy, and polysemic terms.

4.2.1 Scope of metaphor identification

Metaphors found in discourse take many forms and there is often ambiguity to the exact boundary between metaphor and other closely aligned cognitive concepts. There are also questions whether to include novel metaphors along with conventionalized or isolate metaphors to only those motivated by sensori-motor experiences. As such a clear approach to identifying metaphor is especially important in corpus studies as a great number of syntactical forms exist and many of these forms might not be immediately recognized as conceptual metaphors (Goatly 1997). In the cases when words have become both conventionalized and normalized, metaphor identification is a balance between the basic meaning of the term and its incongruence in the discourse context, stressing overall expressions over individual word units. There is no distinction made at the basic identification level between different taxonomies of metaphor as the study includes all syntactical forms or domain associations using secondary tagging to separate metaphors based on domain content, motivation and the nature of the mapping system. The following examples illustrate the range of metaphors captured by the methodology but also the precision which is present.

(28) sections *rot*, are no longer viable, but remain *joined to the flesh* of the main body via *gangrenous* passages (Koolhaas 2002: 180)

The example above produces incongruence between the context of the expression and the basic meaning of the terms used. The “sections” that rot refer to changes in program and building use in an urban context, creating a novel metaphor based on the conventionalized metaphor BUILDINGS ARE (HUMAN) BODIES. The metaphorical context of the body is extended through three metaphorical expressions within the same sentence using the same underlying context. Regardless, the identification of this expression as a metaphor is straightforward but it is important to understand that there is a difference between a novel expression of a new

metaphor and a expression metaphor extending a known metaphor. These passages above are novel versions of a conventionalized metaphor. The next example is also a novel metaphor but captures a unique expression of a new metaphor using attribute information.

- (29) Ungers proposed to articulate the new settlement in the form of a *barcode* organized perpendicularly to the proposed vehicular artery (Aureli 2011: 210)

The metaphor in (29) is identified through the incongruence created between urban development and a piece of retail infrastructure of “a barcode”. The metaphor that is created – URBAN DEVELOPMENT IS A BARCODE – is a unique instance of a new novel metaphor used as an image-to-image mapping to communicate a pattern of urban development, in this case a series of parallel strips of different widths but equal lengths. When a novel metaphor is generated via an ad hoc situation based on attributes of shape, material or surface characteristics, it is defined as an image metaphor. Image metaphors transfer a particular and narrow sense of meaning and do not include mappings of rich or extended knowledge. This does not make them irrelevant or fleeting (Lakoff and Turner 1989) as they perform important discourse functions (Caballero 2006). As such, they are included in as part of the metaphor analysis.

In addition to including metaphors classified as novel and conventionalized, metaphors with both resemblance and correlational motivations are included in this study. The following quotation from the corpus is a simple example of identifying a resemblance mapping that uses attribute information:

- (30) the wall’s plaster finish is the rumpled, dull gray of *some unfortunate pachyderm* (Cadwell 2007: 20)

In this example, a wall of a building is being understood through a reference to the skin of an elephant based on the texture and colour of a wall surface. There are obviously two domains of knowledge present along with a nonliteral mapping between the elephant and the building.

The metaphoric expression is based on a visual mapping to create a novel expression based on attributes rather than using relational information. At the same time, the mapping of elephant skin to building wall is based on an underlying conventionalized, conceptual metaphor of ENCLOSURES ARE SKIN which is, in turn, part of a hierarchically lower metaphor BUILDINGS ARE ORGANISMS. This is an example of an image metaphor using visually orientated information that transfers the attributes of an object in one domain to an object in another to create meaning (Lakoff and Turner 1989). At the same time, it is also an example of a novel expression of a resemblance metaphor that is built on a conventionalized mapping of a correlational metaphor. To eliminate either novel or attribute resemblance metaphors from the study would be to miss the presence of other types of metaphors.

An example of another type of metaphor recognized by the presented theory is a correlational mapping using associations between knowledge domains which is not logically determinable by considering similarities.

(31) the *unfolding* of the space *in* time. (Allen 2000: 107)

In the example above, there is clearly a metaphor present as the domains of SPACE and TIME being associated with the domain of OBJECTS and SPACE is manipulated through the application of ACTIONS. There is also incongruence present as neither space or time are objects, it is not literally possible for one to be inside the other nor is it literally possible to physically unfold when there is no physical form. However, there is also no comparison through similarity found within the expression as space is not understood by comparison to something and time does not resemble anything else. The only way to understand the expression in the context is through previously formed associations between concepts and experiences as a highly conventionalized, correlational metaphor. Space is directly associated with the properties of objects through the conceptual metaphor SPACE IS AN OBJECT and then extended through the action of unfolding. Time, as a human conceptual theory, is

conventionalized through the conceptual metaphor TIME IS A CONTAINER, where a container is also an object. The basic difference between resemblance and correlational metaphors is that while “Resemblance metaphors may involve correspondences between concepts of the same type, [...] correlation metaphors link concepts of different types” (Grady 2007b: 331).

4.2.2 Polysemic, fossilized collocations and normalized terminology

One of the most difficult and least clear aspects of metaphor identification in discourse occurs when words are polysemic, or have developed to have two conventionalized and highly normalized meanings. Some researchers have argued that polysemes are derivative of metaphor (Goatly 1997) and theories of conceptual metaphor consider that a polyseme can only have one basic meaning (Lakoff and Johnson 1980). As such, while the second meaning of a term is considered normalized, it is incongruent with the basic meaning and, therefore, metaphorical. This seems good in theory but is not always clear in practice. If we look at a fair simple word such as *walk*, the basic definition is to move at a regular and slow pace. Yet the term is polysemic as can be seen from these examples:

- (32) All this solicits the viewer to *walk* through the building (Hays 1984: 22)
- (33) there is something thrilling about taking a *walk* (Lavin 2011: 65)
- (34) Even the *walk's* concrete retaining wall (Cadwell 2007: 33)

The term “walk” is being used in three different senses through the examples above and each has a different meaning. It is found as (32) the basic definition to move a human body through space slowly, (33) the understanding of that slow movement as a closed event in time and (34) as a physical object in the landscape. However, while polysemic, none of the expressions above would be considered as metaphorical in the method applied to this study. The use of *walk* as a noun in (33) could be metonymic as the event is standing in for the

action with image schematic content through containment. It would not be considered as metaphoric as there is no incongruence and the mapping is within the same cognitive model. The same is true for the use of walk in (34) when the action is being mapped to the object on which the action takes place.

There are situations when walk is used in its basic sense yet is metaphorical, such as in the next example:

- (35) the postmodern architects *walk* us through their immaculate and ever-so-precisely lit and photographed domestic spaces (Wigley 1998: 6)

In this expression, there is a mapping between the physical action of walking and the abstract situation created in the expression. The walk is not physical but describing the action of looking through a magazine filled with photographs of buildings. There is a metaphorical relationship between turning pages and moving through space as part of a JOURNEY framework. Obviously, this is a metaphor with the reference to walk as a way to transfer a sense of moving slowly through something rather than referencing the physical act of putting one foot in front of the other. The identification of metaphor for polysemic terms relies of the same procedure as all other occurrences of metaphor – the mapping between two cognitive domains and the literal incongruence of a term’s basic meaning in the discourse context.

Polysemic terms are a result of the conventionalization of language, a process that creates complications when identifying metaphors in a disciplinary discourse context. In addition to issues identifying when a polysemic term is metaphorical, often professional disciplinary terms are used as fossilized collocations and have taken on a standard and colloquial meanings. These habitual word combinations feel right to members of the discourse community and create no sense of incongruence in their contextual use. An analysis, however, might consider the terms to be either literal or metaphorical depending on their context. As an example, we can examine a collocation using the expression “made to”:

- (36) little attempt was *made to* arrange the parts of the building into independently functioning set (Evans 1997: 70)
- (37) glass skin could not be *made to* disappear (Allen 2000: 116)

While the basic meaning of *make* refers to a process of fabrication, the term takes on secondary meanings of exerting one's will onto other people or the environment as an act of producing an outcome. It is this secondary meaning which is used in the collocation *made to* which carries a disciplinary meaning aligned with the action of design. It is standard for architects to exert their will onto the environment and objects as this is the basic process of architectural design. The first example (36) uses the expression in this way, applying the process of fabrication to the design of a building. This is a collocation but not a metaphor as there is no incongruence since the expression is referring to the literal arrangement of parts. The second example (37) is also a collocation but the elements of the expression are incongruous with each other and, therefore, a metaphor. In architecture, "made to disappear" does not mean to remove it from its location. Rather, the disciplinary meaning is to reduce the visual impact of the form through design decisions (material, shape, orientation, location) so it is not as noticeable or dominant in the visual field. The expression activates a metaphor that maps between visual and physical domains.

In addition to fossilized collocations, many metaphorical terms used by architects have been normalized as professional terminology so they are not recognized as such by either the speaker or listener but are obviously metaphors. Many of these terms are references to human bodies being mapped to buildings such as *skin, bowels, spine, face, heart* and *ribs* (Caballero 2006), leading to examples like the following:

- (38) where the resin-impregnated wood *skin* bends and crimps to support internal activities. (Somol 1999: 69)

The use of "skin" in the example above is not acknowledged by the architect as being a metaphor yet the term is clearly mapping between organic bodies (human) and the form of a

building. In addition to the close mapping between bodies and buildings, many machine and mechanization terminology can also be found in this pattern of normalization. Buildings and architectural concepts are understood by architects literally as machines, as the following example illustrates.

- (39) The integration of the concept of violence into the architectural *mechanism* (Tschumi 1994: 12)

As part of architectural discourse, “mechanism” has been normalized to the point that it is questionable if the term is being used literally or metaphorically in the discourse community. However, both (38) and (39), would be identified as a metaphor in the method pursued in this study regardless to not being recognized as metaphors by the speakers. The terms have been conventionalized as a standard expression, but also normalized so they do not trigger any incongruence in the sentence for the speaker as part of this discourse community (i.e. the term has become polysemic for this group). For the analyst, there is clearly incongruence between the basic meaning and the application in the professional discourse so this study would classify both examples as metaphors.

The normalization process also applies to professional jargon and ways that architects conceive of interacting with, and interpreting, the environment. While the examples above addressing the normalization of professional terminology are contained to resemble metaphors useful for the similarity created between the concepts, when looking at the conventionalization of professional jargon, the focus is on correlational metaphors. The difference can be seen through the following examples:

- (40) the floor *wraps* the sides of the wall to establish a waterline. (Cadwell 2007: 25)
- (41) The genius of the scheme begins with its graceless massing. A pavilion *crashes* into a large box (Kipnis 2013: 138)

As part of naturalized discourse in architecture, neither of these highly conventionalized expressions would be considered metaphorical by the architects. Yet, both examples project an interpretation into the environment which does not exist as a literal experience. There is also a clear mapping between source domains of actions and a target domain of an inert built environment. It is not possible for the floor in (40) to wrap the walls when considering the basic meaning of the term which involves the covering of an object in thin, flexible material, usually by the human hand. In (41), the projection of dynamic action between two aspects of a building is clearly incongruent with the physical reality (i.e. the buildings do not move). While non-metaphorical for architecture, both expressions and the type of conventionalized jargon they represent would be considered to be metaphorical by this study.

4.2.3 Metaphors with simile form

For this study, the distinction between metaphor and simile is important as a cognitive structure rather than as a linguistic form. The mechanism for determining a simile is, therefore, not the “X is like Y” syntactical form but rather the identification of literalness or incongruence. If incongruence occurs, then regardless to its form, the expression is a metaphor. Hence, an expression in a simile structure is determined to be either a simile or a metaphor depending on the discourse meaning and conceptual intention rather than its figurative structure.

This section presents a series of expressions which have a simile form but are sometimes metaphors as a way to illustrate the cognitive differences between the two operations. The first example below is a figurative simile but a conceptual metaphor:

- (42) *Like a bicycle pedal*, when pressure is brought down upon the terminal ends, the whole building starts to revolve and spin. (Hedjuk as quoted by Allen 2000: 104)

In the passage above, the expression “a building is like a bicycle pedal” is being used to explain the relationship between a diagonal ramp and the building it intersects in a simile form. However, while the expression takes the figurative form of a simile, it is really a metaphor. The key to understanding the difference between metaphor and simile comes from the context rather than the syntactical form and the point of using the comparison is to introduce the concept of rotation into the environment. If the target domain was something that could literally rotate, as in “that crank is like a bicycle pedal”, this would be a simile as there is a literal comparison occurring. However, the target in this expression is a ramp and a building, neither of which have the capacity to rotate or move in any way. As such, the comparison produces incongruence through the projection of an action which is not possible and then using a comparison to reinforce that action. The underlying conceptual metaphor is BUILDINGS ARE MACHINES using physical forces salient in the rotation of pedals (torque, pressure and rotation). However, the movement is nonliteral and therefore this is a metaphor even though it uses a simile structure.

The next example is a little more complex and requires a closer reading of discourse context to understand that it is a metaphor rather than a simile even though the expression uses the conjunction “as” to create an explicit comparison between the landscape and a canvas.

(43) the whole physical and mental landscape has become *as canvas to an artist* (Benedikt 1987: 14)

If the terms are considered individually, they retain their basic meanings – canvases are still canvases and artists are still artists – which would immediately suggest a literalness and the absence of incongruence at the linguistic unit level in the expression. As there is no incongruence at the individual term level, some metaphor identification methods would not consider this expression to be metaphorical (i.e. Pragglejaz Group 2007). This understanding

might also be supported when looking at the larger discourse content as there is some ambiguity to whether the expression is using literal meaning. The role of the artist is being mapped to those who produce media of the landscape such as “directors and actors and musicians, politicians, columnists, photographers, anchor-men and ad-men”. It is possible for each of these professions to be considered to be artists in a non-metaphorical way. However, when we consider the focus of the expression, the landscape, there is clearly incongruence present as the landscape is considered to be a canvas (which it is clearly not) and the process of creating a landscape is literally different to that of painting a canvas. The introduction of canvas modifies the understanding of the artist from a general category to a painter as a particular type of artist. So, while the individual words are being used literally, the overall expression produces incongruence as landscapes are not canvases and directors are not painters. The expression would be defined as a metaphor rather than a simile.

Not all expressions using a simile structure can be defined as being metaphors. The expression below is both a figurative simile and a cognitive simile.

(44) [architecture] should be found useful and beautiful, *like a tree*
(Benedikt 1987: 52)

In this expression, architecture is being compared to a tree and the expression creates meaning through literalness of this comparison. A tree is useful and considered to be beautiful and, *in the same way*, architecture should also be useful and beautiful. While there is an association between concepts in different domains (ARCHITECTURE and TREES) there is not any incongruence. Architecture is not expected to grow, produce seeds or nuts, have roots or branches, become nourished from the environment, and so on. As the mapping is one based on literal association, this expression is clearly a simile. In order to reinforce why this is a simile rather than a metaphor, the terms can be changed while the conceptual form of the expression is retained. Rather than “useful”, “beauty” and “trees” we can insert attribute

information to produce an expression such as “architecture should be red like fire engines are red”. In this comparison, the similarity that is generated is literal comparison rather than metaphorical, referring to a transfer of the same properties between domains.

Similes can also be found supporting metaphors while maintaining distinctiveness between the two conceptual structures. The following expression is an example of a metaphor that is enriched with similes but is not a simile itself:

- (45) architecture *is linked* to events in the same way that the guard is linked to the prisoner, the police to the criminal, the doctor to the patient
(Tschumi 1994: 2)

The example above contains one metaphor (“architecture is linked to events”) and three similes (examples of literal linkages) where the similes are used to reinforce the meaning of the metaphor but are independent to it. The metaphor is a direct association between concepts rather than taking a simile form as in the previous examples. The direct association produces an incongruent relationship between “architecture” and “events” as it considers them to be physical phenomena using the conceptual metaphor PROXIMITY IS DEGREE OF RELATIONSHIP. The three similes do extend the metaphor into novel territory and suggest a refinement of the understanding of architecture and events as phenomena since all three of the similes use domains base in human professions – guards and prisoners, police and criminals and doctors and patients. These augment the preceding metaphor to present the architectural discipline and generic events as people through (BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA which extends into INANIMATE PHENOMENA ARE PEOPLE. As part of the metaphorical analysis of this dissertation, only the first part of this example is a metaphor and the more refined meaning is captured through other tagging categories.

4.2.4 Metaphors using metonymic elements

Metonymies are not metaphors although they are both based in the creation of incongruence by identifying one thing as something else. The difference between the two cognitive operations is in the relationship to domain knowledge. While metaphor create incongruence between elements of different domains, metonymies produce incongruence through inter-domain mapping. The basic operation of metonymy can be seen in the following example:

(46) But space in Loos' *architecture* (Colomina 1992: 92)

In this example, the author uses the term “architecture” to stand in for several other larger collections of associated ideas in a part-for-whole metonymy. The context in which this expression might be used includes 1) the building designed by the architect, 2) the ideas that are contained within the building, 3) the office that is associated with the architect 4) the project that the architect or office produced, 5) the larger collection of projects that form a theme in the architectural work, or 6) the process and methods of design developed by this architect. In this example, architecture is being mapped to other concepts but these concepts are all bounded within the same cognitive frame or domain indicating that this is a metonymy but not a metaphor.

Metonymy can often be found participating as an element within a metaphorical expression. The example below uses a part-for-whole metonymy as part of a metaphor:

(47) in this sense that the *Carpenter Center* moves radically beyond *Dom-ino*. (Allen 2000: 118)

The “Carpenter Center” and “Dom-ino” are both individual-for-class metonymies where the name of the building stands in for architectural ideas that it contains in as a physical form⁵.

⁵ The Carpenter Center is a literal building, the Carpenter Center for Visual Arts at Harvard University design by Le Corbusier in 1965. The term is being used in this passage not to refer to the actually building but to the

While there is a mapping between the physical building and abstract ideas, these are not metaphors as both are in the same cognitive model or domain. The expression does create a metaphorical relationship between the two metonymies. When the first metonymy (Carpenter Center) “moves radically beyond” the second metonymy (Dom-ino), SPATIAL MOTION and LOCATION are being used to correlate to the gradient of progress in building development and sets the two metonymies as bounded abstractions in the metaphor PROGRESS IS FORWARD.

Separating metonymic expressions from metaphorical ones is straightforward in most cases of whole-for-part, part-for-whole, individual-for-class and class-for-individual metonymies, as exemplified by the next two examples.

(48) I am aware of the difficult task I am imposing upon *Gehry* (Hartoonian 2006: 117)

(49) Here *Gehry* combines the image of an American ranch-house, a single freestanding object in the midst of landscape, with spatial sensibilities derived from modern architecture. (Hartoonian 2006: 111-112)

In the two passages above, the term “Gehry” is a part-for-whole metonymy with the name of the architect standing in for the work (both abstract and physical) of a large group of people in the architect’s architectural practice. However, the first example uses the metonymy as part of a metaphorical expression while the second example is only a metonymy. In (48), the sentence sets up an incongruence by mapping a physical action (imposing a task) onto the metonymy “Gehry” making the expression is a metaphor. In the next example (49), the same metonymy “Gehry” is present but without any incongruence or mapping between domains.

conceptual design position that generated the form of the building. The Dom-ino is a basic structural framework for a building typology also designed by Le Corbusier. Although it is already a conceptual position, the term is being used to refer to the conceptual ideas that formed the model rather than the model itself.

The expression can be interpreted as a literal statement with all terms using their basic meaning making this second example only a metonymy and not a metaphor by the method of this study.

4.2.5 Finding boundaries of metaphorical expressions

Once a metaphor has been determined to be present in an expression, it is important to determine the extent of its boundary in a systematic way. In metaphor research using corpora, it is recognized that at “the level of discourse, identification problems can relate more to agreeing on boundaries than on word meaning; does one, for example, include the literal target (“they”) as well as the source terms (“pigged out”) as the “metaphoric expression” in a text?” (Low 2008; 220). Some methods restrict metaphor identification to the “lexical unit” level (Pragglejaz Group 2007: 2) which is either a single word or a compound expression where the meaning cannot be understood by either word alone (i.e. a collocation). Yet, as discussed above, the approach taken in this study considers the term activating the conceptual metaphor as integrated to its immediate context and the larger discourse meaning. It is important to extend the consideration of a metaphor beyond a single term as the incongruence which determines an expression’s metaphoricity is often found at a higher level and often even between expressions. However, some limits and consistency are necessary while the ambiguity in metaphor identification encourages questions of determining the extent of a single metaphorical expression – whether it is restricted to the metaphorical term, the term and its target, the term and all immediately adjacent text or the entire sentence which the term is found.

As this study is focuses on natural language in a disciplinary discourse context through corpora research, the boundary of a metaphorical expression is considered through the containment of an idea that includes a term activating literal incongruence combined with

a single target domain and *at least one* source domain. As such, the expression will have a single dominant metaphor as indicated by the presence of the single target domain which is used to verify the boundary of the unit of study. An example of the definition of boundaries can be seen by using the following example:

- (50) Its path *moves* the spectator through the building, *opens* interior up to exterior, and *connects* the building to the *life* of the campus. (Allen 2000: 103).

While (50) is a single sentence, it includes multiple terms that create incongruence between their meaning and context. These terms are “moves”, “opens”, “connects” and “life”. When the expression is analysed for completeness of ideas, there are four clear segments of the sentence which would be considered as metaphorical expressions containing a conceptual metaphor. These are:

- (51) [the ramp] *moves* the spectator through the building,
(52) [the ramp] *opens* interior up to exterior,
(53) [the ramp] *connects* the building
(54) the *life* of the campus.

Although the entire sentence is about a ramp through a building, each segment represents a contained idea with a single target domain and a primary source domain. If there were clearly two different target domains, the expression would be considered again with the goal of separating it into two expressions. The boundaries of the metaphor are determined by including all terms needed to understand the contextual meaning rather than just the activating term, capturing all syntactically dependent terms relevant to its contextual understanding. In (51), “its path” is a metonymy for the ramp and is used to stress movement along the path (circulation element) rather than just the path itself (as an object). The next two expressions, (52) and (53), also infer the target domain of a ramp and how it operates as an architectural element. The final expression (54) is a contained mapping that uses a

metonymy of the university campus to stand in for all the activities, people and structures that it contains but associates it with the source domain of biological organisms making this a discrete metaphor.

It is not always simple to determine the boundary of a metaphorical expression when looking at discourse examples. In the following example, this issue can be illustrated further:

(55) *Utopia's ghost haunts the presumed interior of a discourse* (Martin 2010: 151)

The term “ghost” in the above example is obviously activating a metaphor as “utopia” is a conceptual idea which would need to be a sentient organism that was once alive to be ascribed a “ghost” after its death. Hence, the metaphorical expression could be considered as “Utopia’s ghost” and no more. Yet, the ghost is involved in an activity of haunting and to leave this from the expression would eliminate important information, so the expression could be “Utopia’s ghost haunts”. Still, the ghost is haunting a particular location which is also important and clearly part of the meaning of the expression so the metaphor could encompass the entire sentence. However, the final part of the sentence is also metaphorical as a discourse would need to be a container in order to have an “interior”. The question is whether this is one expression or two closely associated expressions. If we consider the example from the point of view of source and target domains there are two clear boundaries in the sentence:

(56) Utopia’s ghost

(57) interior of a discourse

Each of the segments above have a clear target domain, the concept of UTOPIA in (56) and the concept of a DISCOURSE in (57). Both of these target domains have associated source domains, a GHOST and a CONTAINER, respectively. The “haunting” that joins the two expressions is a linking term and leads us to the next section and a discussion of metaphor

clusters and extended metaphors (also known as megametaphors). In a discourse situation, metaphor use engages in complex relationships on both a structural and semantic level.

4.2.6 Clusters and megametaphors

It has been well documented by discourse scholars that metaphors in speech and writing are not evenly distributed but have a tendency to cluster in texts (Cameron 2008; Low 2008). The clustering operates at multiple scales of discourse and can be related to the rhetorical purposes of their users. When a point is being stressed, an explanation provided, or a concept needs to be clearly communicated, “explanations of a topic that requires the use of metaphor are likely to produce multiple instances of the same and connected metaphors” (Cameron 2008: 200). This suggests that clusters are associated through a shared target domain which is dominant throughout the grouping. However, rhetorical focus is also important for the identification of a cluster with discourse coherence a critical factor.

A cluster is defined in this study as a series of sequential metaphors (more than two) associated with a single rhetorical intention rather than a single domain. The follow passage exemplifies the approach:

- (58) Drifting in the foundation’s little gallery, I was transported: how and to where I did not know, but I knew that I was . . . elsewhere. It was later still that I came to understand how Scarpa cast this spell: how he liquefied materials and how, in doing so, he sometimes gave rise to an all-embracing spatial affect that unmoors us from the earth, leaving us to swim in a liquid ambience. (Cadwell 2007: 5)

In the passage above, the extended sentence involves the following nine distinct metaphorical expressions:

- (59) *Drifting in the foundation’s little gallery*”
(60) I was *transported*:

- (61) Scarpa *cast* this *spell*:
- (62) how he *liquefied* materials
- (63) he sometimes *gave rise*
- (64) an *all-embracing* spatial affect
- (65) that *unmoors* us from the earth,
- (66) leaving us *to swim*
- (67) in a *liquid* ambience

Each of the individual expressions above have a clear source and target domain when considered in discourse context, meeting the requirements of how metaphors are identified (c.f. Section 4.2.1). There are many different types of metaphors present in the list from acknowledged ad hoc examples (“drifting”, “liquefied”, “unmoors”, “leaving us to swim”, “liquid ambience”) to normalized expressions (“cast this spell”, “I was transported”), conventionalized, sensori-motor expressions (“gave rise”), and conventionalized body actions (“all-embracing”). However, this is considered to be a cluster for two reasons. First, the metaphors are in immediate adjacency with each other. Second, regardless to differences in source, target and classification, all the metaphors in this group focus on a particular rhetorical effect. In this case, the passage is a critical aspect of the article as it sets the theme for the following discussion – namely, how the building is interpreted through overlaying regional context (Venice, water) with architect’s intentions (craft, materiality).

While the cluster in (58) occurs within a single, extended sentence, the sequential ordering of metaphors can also happen between sentences and involve more clearly defined metaphors, as in the next example.

- (68) West Berlin had become *an island*, a city-state enclosed by a perimeter wall and surrounded by a hostile territory. Because of this *captivity*, West Berlin had not *recuperated* from its postwar crisis. The city still contained vast tracts of empty space in which buildings seemed to be isolated *islands* and, in the 1970s, its population was declining (Aureli 2011: 177).

The bounding of the metaphors involved in the passage above is considered a cluster because it is an associated set of sequential metaphorical expressions that are associated around a single idea. In this example, the metaphors are spread between several sentences and involve three distinct source domains. The target domain remains focused on Berlin as urban space and links three metaphors: BERLIN IS A LANDSCAPE (“island”), BERLIN IS A BODY (“recuperated”) and BERLIN IS A PRISONER (“captivity”). When considered together, there is a clear intention by the author to consider Berlin simultaneously as both a body and an aspect of the natural environment without a lack of discourse coherence as the overall cluster stresses issues of isolation, identify and health.

Not to be confused with a metaphor cluster, an extended or megametaphor is an underlying conceptual metaphor that can be used to explain surface phenomenon of other metaphor choices but is not necessarily identifiable in any particular metaphorical expression (Kövecses 2010: 57-59). Rather, its presence is indicated by the summation of several metaphorical expressions. Clusters are a likely place to identify a megametaphor, linked to the rhetoric purpose of the overall cluster. In (68) above, there is a conceptual megametaphor ISOLATION IS NEGATIVE present, inferred through how the three metaphors noted above interact with each other. It could also be theorized that PROXIMITY IS RELATIONSHIP is also present as a megametaphor, although the discourse intention takes a stronger position to the effects of isolation in urban form.

A megametaphor can also join a series of individual metaphors found in different paragraphs and sections of the text rather than consecutively located in a cluster. These metaphors associated with a megametaphor often reinforce a theme or major position by the author or speaker. If we return to the cluster of metaphors found in (58), a megametaphor of (WELL-DETAILED) BUILDINGS ARE ANOTHER WORLD is present and ties the examples between (59) – (67) together. This underlying metaphor uses a mapping based in SOLIDS ARE LIQUIDS

to stress the difference between normal experience of the built environment (this world) and the experience of a highly refined, architectural example of the built environment (another world).

Megametaphors present a difficulty for this study because while the research focuses on a genre of discourse, the dissertation is not pursuing discourse analysis. However, megametaphors are only identifiable when considering a larger discourse context rather than isolating research data to the level of individual metaphorical expression. The study acknowledges the existence and importance of megametaphor but pursues their identification through quantitative data found in a hierarchical coding system employing decomposition as a primary tool. In this, there is an expressed attitude that structural and qualitative relationships can be documented, mapped and categorized through an analytical operation of decomposition (Grady 1997), including the presence of megametaphors.

4.3 Metaphor Coding

Contemporary metaphor research has shown the importance of schema that operate along with primary metaphor to create scaffolds for conceptual structures (Groatly 1997; Gibbs 2005; Johnson 2005; Grady 1997, 2008). A metaphorical statement indicates a conceptual metaphor which then can be decomposed into more basic units and the discussion on clusters and megametaphor above suggest that discourse context manipulate complex relationships of inference. As such, the pattern of these fundamental elements could be illuminating in regards to a discourse community. For example, we can consider hierarchical complexity in an expression that seems fairly straightforward such as:

(69) Railway stations unfold like iron butterflies (Koolhaas 2002: 187)

There would be little difficulty to obtain consensus amongst analysts that this expression has a simile identifier present (“like”) and is relatively simple to encode. The metaphor activated

through the expression is a novel metaphor that would be considered imagistic with a building type (“railway stations”) being compared to the shape of “butterfly” wings. This suggests the metaphor BUILDINGS ARE BUTTERFLIES activated by the term “butterfly” as a point of incongruence (i.e. buildings are not literally butterflies even if the butterfly were made of iron). However, if this was the case, the expression would be considered a simile rather than a metaphor. As such, the example would be abandoned or not decomposed further, losing critical aspects of its meaning and use. As Caballero (2006: 25) has pointed out, visual metaphors used in architecture may activate both an image and conceptual frame. If the meaning of the sentence is examined, the purpose of the expression is not to compare railway stations to butterflies, but to use the image information as gesture of motion activated by “unfolds”. The incongruence is created not by railway stations considered as a butterfly but by the fact that railway stations do not have the capacity of motion – the image of the butterfly is in the service to the primary meaning of the sentence based on the primary metaphor FORM IS MOTION. As such, the expression is a metaphor rather than a simile since the action which is suggested by the opening of a butterfly wing is not a literal comparison.

While the sentence presented in the example above seems simple at first observation, a closer look might suggest that we could have several expressions rather than one. There is clearly only a single target domain of “railway stations” but the following statements might be extracted:

- (70) Railway stations are like butterflies
- (71) Railway stations are iron
- (72) Butterflies are like iron
- (73) Railway stations unfold

While the statements above each isolate an aspect of the expression, there are problems considering them individually as metaphorical expressions as per the discussion above (c.f. 4.2.1). The clearest statement is (70) but we have already discussed how this contains only

surface information that is modifying a deeper metaphor. The next construction (71) is not a metaphor as the statement is literally true – railway stations can be made out of iron. We might consider “iron butterflies” to be a metaphor such as in the simile form represented in (72). However, the metaphorical status of this statement is problematic as it is not possible to understand the scope of the mapping as either comparison or correlational information if restricting the expression to only these terms. This suggests that “iron” is only a supportive aspect of a larger expression, an interpretation supported to the understanding of iron as part of an architectural discourse. While it might be literally true that buildings can be made out of iron, it is not a current technology but a 19th century innovation in structural design of large buildings (i.e. the introduction of cast iron and wrought iron). Contemporary buildings use steel rather than iron as architects would know. This suggests that the term “iron” is present in this expression only as a modifier to introduce an historical aspect that is non-critical to the overall metaphor. The final possible expression (73) is also not a metaphor in this form as there is no clear incongruence present. The statement could be a literal with a building developed with a mechanical roof that does, in fact, unfold. There is nothing in the immediate discourse context that would allow the statement to be understood as either literally or metaphorically without further information. The boundary of the metaphorical expression is correct as presented in (69) but reducing the expression to only the most obvious metaphor (“railway stations are butterflies”) eliminates many aspects of the cognitive content operating in the expression. At the same time, removing the butterfly as a source domain to stress only the unfolding also removes important information. The question is how to code the expression to capture all of the important information that would be used for metaphor analysis.

The first step is to use compositional coding to identify the source and target domains separately, a process that allows this aspect of the metaphor to be associated with different

elements in a hierarchical coding system (Kimmel 2008b). The original practice of CMT was to produce a single conceptual metaphor that includes both source and target domains in a fixed expression. To use a classic example, an expression such as “Is that the foundation for your theory?” would produce the conceptual metaphor THEORIES ARE BUILDINGS. When coding a large corpus of several thousand metaphors, this would create an unwieldy amount of one-off metaphors that seem unique and mask systematic relationships. It is more efficient to compositionally code the metaphors with independent source and target tags along with any explicit references to particular source elements. This still meets the objective to describe a metaphor through the relationship between the wider source and target domains as well as the type of information transferred (Lakoff and Johnson 1980; Goatly 1997). In the case of (69) this would produce the following tags:

- Target: BUILDINGS
- Source: INSECTS
- Source elements: butterfly or butterfly wings

Once coded, the metaphor can be recompiled as BUILDINGS ARE BUTTERFLIES by simply considering the association between source, target and referenced element. However, while the metaphorical expression is clearly using these source domains, these codes do not capture the dominant purpose of the metaphorical expression – the gesture of form understood as motion through unfolding. In order to do this, a second metaphor has to be coded and related to the first. This suggests that an important aspect of the coding is not only the most visible metaphorical relationship coded to source and target domains but also associated metaphors used in the construction of the discourse meaning.

As discussed previously, the coding of a conceptual metaphor should include whether the metaphor is based on cultural or sensori-motor knowledge, whether it is conventionalized or novel, and if it is based in resemblance or correlational information. These factors have

been shown to be important aspects of understanding metaphors (c.f. Chapter 3, Section 3.4). If an expression includes more than one conceptual metaphor, these descriptions would need to be applied to each identified metaphor independently. For example, in the case of the (69), there are two metaphors present attached to this single expression – namely BUILDINGS ARE BUTTERFLIES and FORM IS MOTION that need to be coded separately while still being related to each other and the expression. BUILDINGS ARE BUTTERFLIES is a novel metaphor generated for this particular situation, includes image information and does not suggest a standard way that buildings are understood. Instead, it is using cultural knowledge (butterflies) that is based on mapping attribute resemblances between domains (salient feature of a butterfly’s form) as well as relational content (how a butterfly’s wings open). The second conceptual metaphor, FORM IS MOTION, is highly conventionalized operating on sensori-motor information where one domain of knowledge has been correlated to a second domain. There is no logical resemblance between a shape and a mode of motion unlike there is between the shape of the building and the shape of the butterfly or the relationship between the wings’ hinged form and the body of the butterfly. Yet, in the context of the expression, both metaphors working together produce an inference between the shape and relationship of a butterfly’s parts and the type of motion expressed through the form of the building, making both metaphors important for the purposes of coding and analysis.

While the metaphor analysis could be left at this level, conceptual metaphors can be decomposed into more generic structures that operate as primary metaphors (Grady 1997). This is the most abstracted level at which content of the metaphor still exists as an association between two domains of knowledge. In this study, primary metaphors are not predetermined, i.e. they are not initially based on assembling and then applying a list of primary metaphor as per Grady (1997). Instead, coding tags are developed ad hoc based on abstracting the conceptual metaphor to its most fundamental units while maintaining the relationship

between two domains. As shown by Grady (1997), a conceptual metaphor might include several primary metaphors and a metaphorical expression could include several conceptual metaphors, making a fairly complex hierarchical structure. However, by coding several levels of associated metaphorical structure, it is possible to start to see larger relationships between references at the expression level and underlying prioritization of knowledge groups, revealing more complex relationships. In the case of our example “Railway stations unfold like iron butterflies”, the two conceptual metaphors present can be decomposed further. The first, RAILWAY STATIONS ARE BUTTERFLIES, can be decomposed to a more generic BUILDINGS ARE ANIMALS, which in turn can be generalized further as OBJECTS ARE ORGANISMS. At the same time, the unfolding of the building is understood as an action that produces motion but is applied to an object, a railway station, which does not have literally have the ability to act without being acted upon. Thus, the conceptual metaphor FORM IS MOTION is associated with a primary metaphor that introduces agency into inanimate objects such as EVENTS ARE ACTIONS. Agency occurs due to the relationship between FORM IS MOTION and an association through this expression with the movement of animals through the butterfly.

The introduction of agency identifies another dimension of coding important for metaphor analysis, namely image schema. An AGENT has been proposed to be a concept under the image schema category of EXISTENCE (St. Amant et al. 2006), an aspect of constitutive construals (Croft and Cruse 2004) and a developmental gestalt (Mandler 1992). It joins many other concepts that are non-reducible, fully embodied and embedded in our cognitive system as fundamental patterns (Table 1). Image schemas have been sufficiently associated with conceptual metaphor to show their importance as a factor of analysis (c.f. Chapter 3, Section 3.1).

Table 1. Image schema codes and classification

Schema Category	Image Schema
BASIC	SUBSTANCE, OBJECT
SPACE	LOCATION, UP-DOWN, FRONT-BACK, LEFT-RIGHT, NEAR-FAR, VERTICAL ORIENTATION, CENTER-PERIPHERY, STRAIGHT, CONTACT
FORCE	COMPULSION, BLOCKAGE, DIVERSION, COUNTERFORCE, RESTRAINT, RESISTANCE, ATTRACTION, ENABLEMENT, REMOVAL OF RESTRAINT
CONTAINMENT	CONTAINER, IN-OUT, SURFACE, CONTENT, FULL-EMPTY
SPATIAL MOTION	MOMENTUM, PATH, ROTATION
BALANCE	BALANCE
IDENTITY	MATCHING, SUPERIMPOSITION, STRUCTURE-LACK OF STRUCTURE
MULTIPLICITY	MERGING, COLLECTION, SPLITTING, ITERATION, PART-WHOLE, LINKAGE, COUNT-MASS, COLLECTION
EXISTENCE	REMOVAL, CYCLE, CYCLIC CLIMAX, PROCESS, AGENT, GOAL, SOURCE, COVER
ATTRIBUTE	HEAVY-LIGHT, DARK-BRIGHT, BIG-SMALL, WARM-COLD, STRONG-WEAK, STRAIGHT-CROOKED, SMOOTH-ROUGH, HARD-SOFT, NEW-OLD, THIN-DENSE, LOUD-SILENT, LENGTH, SCALE

Image schema might be associated with any level of the metaphorical expression although there is an assumption that there is a direct relationship between image schema and conceptual metaphors, with schemas being building blocks between basic sensori-motor experiences and more complex metaphorical constructions. The notion of “unfold” as the primary activation term in (69) is image schematic as it uses a SPATIAL MOTION concept directly but applies it to a situation that contains incongruence. The presence of this image schema does not make the “butterfly” reference irrelevant but only implies that it provides nuanced information rather than core meaning. However, there is no image schema construct for a higher and specific organism such as an insect (OBJECT is the closest). Instead, the butterfly reference is attached to image schema content from the ATTRIBUTE and SURFACE categories, including SURFACE, LARGE-SMALL, PLANAR-VOLUMETRIC, and SYMMETRICAL-ASYMMETRICAL. From the image schema, we can understand that

the salient information is the sense of a form which is hinged, proportionally large and has symmetrical surfaces. Image schemas seem to have natural relationships with particular types of metaphors as can be seen in this example. The correlation between form and motion uses a SPATIAL MOTION image schema while the imagistic metaphor of the butterfly uses ATTRIBUTE content. Therefore, image schemas need to be coded to the conceptual and primary metaphors rather than to the level of the metaphorical expression.

Metaphors found in a corpus have a level of complexity far exceeding previous examples generated based on introspection (Lakoff and Johnson 1980, 1999; Kövecses 2006). One of the key ways that the conceptual depth of these expressions can be recorded is through a multi-tier, hierarchical analysis method. It is critical to use pre-existing and ad hoc coding, independence between metaphorical expressions and conceptual metaphors, compositional coding for source and target domains, and multiple coding dimensions per conceptual metaphor encompassing both image schemas and primary metaphors. As such, hierarchical coding allows for the exploration of source and target domain relationships, systematicity, metaphor decomposition, and structural complexity as well as starting to develop knowledge of shared conceptual content of the architectural discipline through its linguistic use of metaphors. It also allows for the identification of systematic categories and the ability to extend those categories based on real evidences rather than theoretical grounds as there are various options in grouping during analysis (Goatly 2007; Kimmel 2012).

4.4 Summary

This chapter has reviewed the methods deployed by this dissertation pertaining to metaphor identification, scope of metaphorical expressions and coding procedures. As metaphors found in discourse and the coding procedure are multi-dimensional and complex, it is worth reinforcing the overall procedure with another example.

(74) the duty (or the capacity) of architecture *to make yet another ‘knight’s move’ on the chessboard of modernity* (Martin 2010: 149)

The example above contains five metaphorical expressions in a cluster focused on the relationship between the metonymies of “architecture” and “modernity”. The decomposition and coding of the expressions are illustrated in Table 2.

Table 2. Decomposition of example 74

Metaphoric Expression	Metaphor	Conceptual Metaphor	Primary Metaphor	Image schema
“the duty (or the capacity) of architecture”	IDEAS ARE PEOPLE	IDEAS HAVE HUMAN AGENCY	(ABSTRACT) ORGANIZATION IS AN ENTITY	AGENCY
“‘knight’s move’”	ARCHITECTURAL EVENT IS MOVING AN OBJECT	THINKING IS MOVEMENT	EVENTS ARE ACTIONS	SOURCE-PATH-GOAL, OBSCURE
“chessboard of modernity”	MODERNITY IS A CHESSBOARD	IDEAS ARE OBJECTS	(ABSTRACT) ORGANIZATION IS A PHYSICAL OBJECT	OBJECT
“make yet another ‘knight’s move’ on the chessboard”	LIFE IS A GAME			
“architecture [...] on the chessboard of modernity”		ARCHITECTURE IS A PERSON, MODERNITY IS AN OBJECT	(ABSTRACT) ORGANIZATIONS HAVE RELATIONSHIPS	OBJECT, PROXIMITY

The metonymy of “architecture” is personified as an individual while the metonymy of “modernity” is objectified as a chessboard. The projection of human actions and the inference of a human body requires the primary metaphor IDEAS HAVE HUMAN AGENCY which is premised on (ABSTRACT) ORGANIZATION IS AN ENTITY and resolves into the less abstract IDEAS ARE PEOPLE. In order for “modernity” to be a chess board, a variation of the primary metaphor (ABSTRACT) ORGANIZATION IS PHYSICAL STRUCTURE is operating behind the conceptual metaphor. It would be more precise to consider the primary metaphor as (ABSTRACT) ORGANIZATION IS A PHYSICAL OBJECT which resolves into IDEAS ARE OBJECTS and becomes more specific at the next level of hierarchical expression with MODERNITY IS A

CHESSBOARD. Other conceptual metaphors present between the primary and expression levels would be LIFE IS A GAME as resolution of IDEAS ARE OBJECTS, and (ABSTRACT) ORGANIZATIONS HAVE RELATIONSHIPS through the mapping of objects and people onto concepts.

The importance of including hierarchical coding levels and classifications is clear when looking at such an example as it uses several cultural references to build the metaphorical expressions (“knight’s move”, “chessboard”, “architecture”, “modernity”, “duty”) while also having metaphors based on sensori-motor content (MOTION, AGENCY, OBJECT, PROXIMITY). Image schemas are also identifiable – the “knight’s move” while being novel and resemblance-based also operates through the association of SOURCE, PATH and GOAL schemas. As a “knight’s move” is a psychological idiom that refers to the L-movement of the chess piece as a movement pattern that is difficult to track, it also activates the attribute schemas of DISTINCT applied to the GOAL and OBSCURE applied to the SOURCE. Architecture is giving the ability to cause a response which activates AGENCY, listed as an image schema under the EXISTENCE category (Croft and Cruse, 2004; St. Amant et al., 2006; Hurtienne and Blessing, 2007) or PROCESS DYNAMICS (Risch 2008).

The series of metaphorical expressions are a cluster as the cultural content references to “duty”, “knight’s move”, “chessboard” and “modernity” are terms related to the knowledge of the game of chess which is being mapped to architecture as a discipline. The use of “knight’s move” extends the expression to simulate a larger scene by considering modernity as the chessboard at which “architecture” plays, using both relational information (the placement and movement of the playing piece) as well as attribute information (the shape and pattern of the surface that makes it a chess board) as the type of knowledge mapped. Correlational and resemblance metaphors are interwoven to support the overall discourse intentions and novel and conventionalized instances of metaphors are also co-present.

Considering the example above and the discussion in the past two chapters, it seems impossible to separate metaphoric meaning from the situated context as there is a substantial loss of nuanced meaning in doing so. The linguistic expression and its surrounding context holds important features to how the metaphor is employed and how it should be interpreted. There is also substantial interaction of many metaphorical taxonomies, hierarchical elements and multiple schemas within singular metaphorical expressions which can be captured by research methodology that maintains a firm scope but also flexibility.

5. METAPHORS IN THE ARCHITECTURAL CORPUS

The complexity evident in figurative language suggests the necessity to examine research results through qualitative analysis when using metaphor analysis to consider situated meaning. As noted in genre studies using metaphor, “numerical importance does not necessarily substantiate functional importance” (Caballero 2006: 86) and quantitative presence does not always lead to qualitative meaning. However, it is also useful to develop an overview of the data through quantitative analysis as it can identify major trends allowing a more focused qualitative examination of the data. Accordingly, this chapter reports quantitative results from the two subdomains of ARCHITECTURE, examines the types of image schemas in architecture, the presence of conceptual metaphor and looks at the classification of metaphorical occurrences in the data (novel/conventionalized, correlational/resemblance).

A total of 2,610 metaphorical expressions were identified in the corpus. Out of the total identified expressions, several large target domain groupings are easily recognized as shown in Table 3.

Table 3. Target domain distribution in corpus (by quantity)

Target Domain	Target Subdomain	Subtopic	No.	Percentage
ARCHITECTURE	ARCHITECTURE [PHYSICAL]	BUILDING (OBJECT)	265	10.2%
		BUILDING ELEMENTS	222	8.5%
		URBAN SPACE	176	6.7%
		BUILDING SPACES	114	4.4%
		Other	84	3.2%
		Architecture (P) Subtotal	861	33.0%

ARCHITECTURE [ABSTRACT]	ARCHITECTURAL CONCEPTS	282	10.8%
	ARCHITECTURAL THEORY	213	8.2%
	DESIGN PROCESS	147	5.6%
	ARCHITECTURE (DISCIPLINE)	113	4.3%
	Other	139	5.3%
	Architecture (A) Subtotal	894	34.2%
ABSTRACT IDEAS	CONCEPT (GENERAL)	191	7.3%
	CONCEPT (DISCRETE)	164	6.3%
	TIME	26	1.0%
	Other	37	1.4%
	Abstract Ideas Subtotal	418	16%
HUMAN EXPERIENCES AND INTERACTIONS	HUMAN EXPERIENCE	72	2.8%
	HUMAN DEVELOPMENT	38	1.5%
	HUMAN RELATIONSHIPS	28	1.1%
	HUMAN IDENTITY	19	0.7%
	Other	86	3.3%
	Human Subtotal	243	9.4%
CULTURAL CONSTRUCTS	LITERATURE AND WRITING	27	1.0%
	CULTURE (AS IDEA)	24	0.9%
	POLITICS	22	0.8%
	ART	22	0.8%
	Other	46	1.8%
	Cultural Constructs Subtotal	143	5.3%
NATURAL ENVIRONMENT	ATMOSPHERIC	16	0.6%
	OBJECTS	12	0.5%
	NATURE	5	0.2%
	Nature Subtotal	33	1.3%

The first target group, ARCHITECTURE, makes up 67.2% of all target domain references in the corpus (1,755 occurrences). While architecture can be identified as a general domain, there is a clear difference in the pattern of target information which suggests the presence of two subdomains that may be considered to be within or, better, belong to that general domain. The subdomains present in the metaphorical expressions are either 1) directly linked to expressions of physical spaces (ARCHITECTURE [PHYSICAL]) or 2) used to discuss architecture

as a conceptual idea and not *directly* linked to buildings or the built environment (ARCHITECTURE [ABSTRACT]).

The first subdomain group, ARCHITECTURE [PHYSICAL], contains 861 metaphorical expressions (33.0%) with a target domain that approaches architecture as a product, i.e. a built object in a physical environment. These include different aspects and scales of the built environment with references to:

- entire buildings (“the *house* prickles with paranoid alertness” [BUILDING IS A PERSON]),
- physical elements within buildings (“Each *column* has a short, tree-trunk base” [A COLUMN IS A TREE]),
- spaces that buildings contain (“*spaces* would tend to be defined and subsequently joined like the pieces of a quilt,” [SPACE IS A QUILT]), and
- statements that focus on the urban scale (“the *city's* status as a closed island within a hostile territory” [CITY IS AN ISLAND]).

Other less populated aspects of this target subdomain are references to the built environment but without focusing on buildings or aspects of buildings (“*Scarpa's bridge* beckons with its glistening teak rail” [BRIDGE IS A PERSON], “the *burrow* floats below the ground” [FORM IS MOTION]); references to architectural concepts through physical expressions such as a building's circulation or structure (“*Movement* is at once more local, atomized; and larger” [MOTION IS AN OBJECT]); metaphors that focus on issues of landscape (“*lawns* cover human manipulations like thick pelts, or even toupees” [GRASS IS FUR/HAIR]); and references that address building materials (“where *steel* abandons all *skeletal* pretense” [STEEL IS A PERSON, STRUCTURE IS A SKELETON]).

The second subdomain group, ARCHITECTURE [ABSTRACT], contains 894 occurrences of metaphor (34.2%) and includes references to:

- architectural concepts (“The *OMA scheme* unfolds with the quiet cunning of a John Le Carré novel” [A DESIGN PROPOSAL IS LITERATURE]),
- architectural theory (“*the meaning* must therefore be recovered by a disciplined

- reconstruction of the cultural situation” [THEORY IS AN OBJECT]),
- design processes (“[*Design*] rather operates via the experimental groping into design options not yet at hand” [ABSTRACT THINKING IS PHYSICAL ACTION, BOUNDED ABSTRACTIONS ARE PEOPLE]), and
 - architecture as a metonymy for ideas or members of the discipline with clear metaphorical content (“the aim was to wrest *architecture* from the ethereal and unquantifiable realms of art” [BOUNDED ABSTRACTIONS/ARCHITECTURE IS AN OBJECT, STATES ARE LOCATIONS]).

While all the ARCHITECTURE [ABSTRACT] target domains can be decomposed to (BOUNDED) ABSTRACTION as the underlying metaphorical domain, major difference between target domains of ARCHITECTURAL CONCEPTS and ARCHITECTURAL THEORY is that the latter stresses issues of meaning (“a *theory of order* threatened”, “The advocacy of branding is a sell-out in *architecture*, reducing its *meaning*”) while the former involves consideration of abstract ideas that are held within the projects such as function or occupation (“*project* erodes its presence”, “the *effect* shatters the horizon line”). The nature of this difference is difficult to code in a metaphor although it is present in the metaphorical expression as rhetorical purpose. In the same way, the target domain DESIGN PROCESSES differs from ARCHITECTURAL CONCEPTS by referencing abstract ideas that formed the project rather than abstract ideas about the project as a finished proposal. DESIGN PROCESSES also involves abstract references to tools that architects use to explore their discipline such as drawing elements (plan, section, elevation), models and diagrams as well as references to architectural criticism, urban theory, and cultural theory that has an architectural relationship (i.e. spatialized content).

The second major target domain grouping is ABSTRACT IDEAS and includes 418 occurrences (16%). This category includes references to abstract ideas that were not architectural nor had architectural associations. The most populated subdomains in this grouping include expressions activating concepts of thinking (“The *mental space* that we

have built for our thoughts then turns into a prison”) as well as particular and discrete ideas (“This *idea* was faithfully adhered to at the Bauhaus with its so-called laws of design”).

These two subdomains dominated the group by several orders of magnitude. The rest of the references consisted of target subdomains of references to time, space, inquires as an idea and geometry.

While architectural theory writing is generally focused on abstract notions and architectural concepts, as can be seen by the dominant target domains and subdomains listed above, there are other references to knowledge areas that span across articles in the corpus. The next most dominant targets group is HUMAN EXPERIENCE AND INTERACTIONS with 243 metaphors found in the corpus (9.4%). The presence of this target domain is not unexpected considering the responsibility architecture maintains as a socio-cultural discipline. Metaphors using this target domain stress the development of human culture mostly centred around concepts of progress (“as to *progress* towards an inspiring and viable vision of the future” [PROGRESS IS FORWARD]); human-to-human relationships (“bring the pedestrian street to life and help forge *community*” [STREETS ARE PEOPLE, RELATIONSHIPS ARE OBJECTS]); experiences that are constructed between humans (“that a piece of *domestic* drama is about to be enacted” [ROOMS ARE STAGES]) and expressions of identity (“how this relation plays a uniquely central role in constructing architecture’s understanding of itself” [BOUNDED ABSTRACTIONS ARE PEOPLE]).

The target domain of CULTURAL CONSTRUCTS contains 143 metaphors (5.3%). This target is a grouping of clearly defined subdomains such as literature, politics, art, cinema, advertising, fashion and music. Differing from human constructs which are primarily abstract (space, time, mathematics), the knowledge containers in this target group involves references to domains of cultural knowledge and expressions. Out of the domains in this group, the ones with the most occurrences include references to literature (“On *parchment scrolls* these

integers appear like perforated blocks, ruins, fallen walls” [TEXTS ARE BUILDINGS]), politics (“*Donald Rumsfeld’s* cynical comments on the surgical splitting of Europe into ‘old and new’” [POLITICAL ABSTRACTIONS ARE OBJECTS]) and art (“All *paintings* based on black grids are herded together in a single white room” [PAINTINGS ARE DOMESTIC ANIMALS]). This target grouping also involved several minor occurrences (in quantitative terms) isolated within single articles rather than being a shared concern across the corpus including discussions of cinema, advertising, economics and music.

The least populous target domain is mappings that use elements of the NATURAL ENVIRONMENT with 33 occurrences (1.3%). This include references to atmospheric effects, weather, generic objects and the concept of NATURE. Like the previous comment regarding the isolation of particular target domains to either a single or small group of articles rather than being found throughout the corpus, issues of atmosphere, that include air density, weather patterns and pollution, were constrained almost entirely to one article in the corpus (Lerup 2001). The discourse context is a critique of urban development and from this, there are expressions such as “the bag of *air* rules above, if it weren't for pollution” [ATMOSPHERE HAS SOCIAL HIERARCHY] and “*Pollution* fills the days when the weather rests” [POLLUTION IS AN OBJECT, TIME IS A CONTAINER, WEATHER IS AN ORGANISM]. Generic references to objects were limited to a few occurrences in the corpus (5 occurrences) such as “this work forgets a life for the *object* itself”. In most cases were the term “object” was used, it was standing in for the physical expression of architecture (metonymy). When the author states “Mies’s *objects* became unstable, non-hierarchical”, objects in this case are not generic but particular to the idea of architecture (i.e. the term *objects* refers to walls in a composition). General references to the idea of nature are also limited (5 instance) and based in metonymy and personification producing expressions that include “There nature has been defeated, erased,

or domesticated” [NATURE IS A PERSON, NATURE IS WRITTEN NOTATION, NATURE IS AN ANIMAL] and “Nature is patient, ever-productive, and disinterested” [NATURE IS A PERSON].

While the survey above covers all the target groupings of domains in the corpus, the focus for this study is only the first target domain, ARCHITECTURE. As noted in Chapter 2, a large aspect of architecture is not just about building science and the physical construction of buildings (*foundations, structure, doors, windows, keystone, etc.*) but also concerns thinking about how space is addressed by architects in a situated socio-cultural context as well as a disciplinary concern. The identification of target domains in the corpus illustrates approximately a 50% division between reference to architecture as physical buildings and references to architecture as abstract ideas (861 versus 894 occurrences, respectively, as reported above). It follows that it is necessary to cover both target subdomain groups separately at first considering if there might be some difference created by either the physical or abstract focus. Once this content has been reviewed, the image schema and primary metaphors present in the corpus are presented and the metaphors are considered through three classification categories.

5.1 Source domains of architectural target subdomains

Domains are broad conceptual containers and most source as well as target domains contain subdomains which identify priorities in the use of metaphors as part of discourse. As noted in the section above, ARCHITECTURE as a target domain is an inclusive approach to all aspects of the built human environment and there are two major subdomains – one focused on the physical and one focused on the abstract.

Table 4. Source domain distribution for ARCHITECTURE

Frame	Source Domain	Target: ARCHITECTURE [PHYSICAL]		Target: ARCHITECTURE [ABSTRACT]		Total	
		No.	Percent (of total occurrences)	No.	Percent (of total occurrences)	No.	Percent (of total occurrences)
HUMAN	ACTIVITY	335	19.2%	347	19.9%	682	39.1%
	ARTEFACTS	172	9.8%	131	7.5%	303	17.3%
	BODY	62	3.6%	67	3.8%	129	7.4%
NATURE	ACTIONS	93	5.3%	82	4.7%	175	10.0%
	ORGANISMS	34	1.9%	40	2.3%	74	4.2%
	LANDSCAPE	33	1.9%	19	1.1%	52	3.0%
	Other	32	1.9%	58	3.3%	90	5.2%
MOTION	MOTION	90	5.2%	81	4.6%	171	9.8%
	JOURNEY	5	0.3%	65	3.7%	70	4.0%
TOTAL		856	49.0%	890	51.0%	1746	100%

Examining the two architecture target subdomains in association with source domains as seen in Table 4 above, we find that not only do the quantity of metaphoric occurrences align but patterns in the source domains between these two targets are also consistent with a few clear differences.

Source domains are grouped into three major categories:

- 1) the domain of knowledge based in human concepts which includes the subdomains of:
 - a. HUMAN ACTIONS
 - i. actions (*give, dance, take, gesture, held, offer, linger, catch, grasp, unmask, disarm, balance, etc.*),
 - ii. social interaction (*call out, demand, accommodate, say, express, consider, obliging, nag at, etc.*),
 - iii. emotional capacities (*indifference, intimate, at pain, hysterical, paranoid, etc.*),
 - iv. reasoning (*cleverness, aspire, remember, disinterest, self-conscious, etc.*),
 - v. spatial comprehension (*far from, lies, looking back, striving forward, etc.*),
 - vi. social structures (*ennobled, pedigree, stateliness, abdicated, status*

etc.);

b. HUMAN ARTEFACTS

i. physical objects such as

1. machines (*machine, bicycle, device, engine, camera, mechanism, etc.*),
2. buildings (*theatre, ruin, prison, window, stage, kiosks, etc.*),
3. clothes (*coat, dress, apron, disguise, stitch, seam, pleat, etc.*),
4. weapons (*arrows, spearhead, tracer bullets, scatter bomb, etc.*).

ii. social structures such as

1. acting (*limelight, centerstage, actor, drama, overscripted, etc.*),
2. politics (*radicalized, colonized, ideologies, autocratic, rights, etc.*),
3. mythology (*enchant, ghost, demons, haunt, phantom, purgatory, etc.*),
4. writing and grammar (*underline, bracket, palimpsest, novel, narrative, etc.*),
5. games (*billiard balls, chessboard, crapshoot, board game, etc.*),
6. economics (*devaluating, point of sale, credit line, sell-out, etc.*);

c. HUMAN BODY including references to the body as a

- i. physical object (*face, body, skin, backbone, spine, ribs, etc.*),
- ii. health and disease (*recuperate, virus, aneurysm, revive, remedy, etc.*),
- iii. senses (*reverberate, noisily, silence, blind, stale, taste, etc.*),
- iv. organs (*heart, synapses, nerves, tissue, etc.*);

2) Concepts that have developed from engagement with NATURE and the natural environment, including:

a. ACTIONS that are not based on the human body including notions from

- i. environment (*penetrate, unfold, stretch, fracture, widen, collide, shatter, burst, peel, emerge, disengage, bulge, etc.*);
- ii. liquids (*erode, percolate, distil, imbue, permeate, evaporate, etc.*)
- iii. plants (*grow, rooted, uproot, graft, entwine, entangle, cross-fertilize, etc.*),
- iv. animals (*nesting, shedding, snuffle, swarm, etc.*),

b. animal characteristics (*birds, pachyderm, shells, water bugs, fish, butterfly,*

etc.)

- c. landscape (*archipelago, sea, river, island, mountain, etc.*),
- d. physical properties (*weighty, lightness, impid, softness, transparency, slippery, etc.*),
- e. environmental factors (*arid, windblown, in the light, a pall, wind, shadow, etc.*),

3) References to MOTION as an ACTION that involves change of location in space:

- a. movements (*rolling off, slippage, sliding, crosses, zip, dart, move, scrolls, shift, weave upwards, turn, loop, etc.*),
- b. body movement (*running, stagger, leapfrog, swim, step, spring free, tug forward, etc.*),
- c. air and water motion (*swirling, sailing, fluid movement, flowing, washes, etc.*),
- d. Journeys with a sense of beginnings and/or goals (*launch, approach, lead, entry, dead end, marks a departure, embark, passage, accompany, pay a visit, etc.*).

All three of these source domains are present in association with the target domains of ARCHITECTURE [PHYSICAL] and ARCHITECTURE [ABSTRACT] within a few percentage points of each other. There are some curious absences or underrepresentation in the corpus as well. While there are references to literature (*novels, characters, reading, palimpsest*), references to language as a metaphor does not have much presence in the corpus, which is interesting as architects consider this source to be one of the most relevant and applicable to architecture (see Chapter 2). There are other traditional source domains mostly absent from the corpus as well but would be expected to be present if, as many architects do, architecture is considered to parallel the fine arts. These are objects of knowledge from sources domains such as ART, SCULPTURE, POETRY, and, especially, MUSIC. A more nuanced examination of the present relationships is discussed in the next sections.

5.1.1 Source domains applied to the target ARCHITECTURE [PHYSICAL]

This section addresses the physical architecture target subdomain in more detail along with the relationship to source domains and resulting formulation as metaphors. Table 5 lists the quantitative order of source domains used to map into targets, gives a sense of priorities of source domains related to these target domains and allows an idea of which source domains are most commonly used in architecture when applying it to discussions of physical space.

The target domains with the largest presence in the corpus are those of BUILDINGS, BUILDING (PARTS), URBAN SPACE, and BUILDING (SPACE), making up 89% of all target domain references in this sub-grouping and clearly stressing the alignment of architectural ideas to buildings and cities when discussing physical manifestations. Metaphors applied to experiences of buildings, materials in context of buildings, and other building environment objects (*bridges, dams, infrastructure or landscape*) are in a clear minority. These target domains that refer to physical aspects of the environment have only 83 occurrences of metaphors compared to the 775 occurrences of references to buildings, building spaces, building elements and urban spaces. Overall, this makes sense as it confirms architecture's priorities aligning with that of physical buildings.

Table 5. Source domain distribution by quantity in ARCHITECTURE [PHYSICAL]⁶

Source Domain	Subdomain	Bldgs.	Bldg. (Parts)	Built Enviro. (urban space)	Bldg. (Space)	Bldg. (exp.)	Bldg. (mats.)	Built Enviro. (other)
HUMAN ACTIVITY (326 occurrences)	Actions (body)	46	38	20	21	5	1	4
	Social Interaction	40	32	12	12	4	3	2
	Thinking/reasoning	10	2	3	0	0	0	3

⁶ The following abbreviations are used in this and following tables. These are consistent with their practice in architecture: arch. (architecture), discip. (discipline), bldg. (building), bldgs. (buildings), enviro. (environment), exp. (experience), mats. (materials).

	Emotional capacities	9	1	1	5	1	0	2
	Actions (fabrication)	0	3	1	6	1	0	1
	Spatial properties	4	4	2	1	0	0	1
	Other	11	7	8	3	0	1	2
NATURE (193 occurrences)	Actions (enviro.)	24	32	15	14	3	0	5
	Landscape	2	2	25	4	0	0	0
	Organisms	9	14	6	2	1	0	2
	Physical properties	2	0	2	2	1	0	2
	Other	6	6	7	2	0	1	1
ARTEFACTS (175 occurrences)	Machines	18	1	10	5	0	0	1
	Objects	6	9	9	8	0	0	2
	Building/Room type	5	1	2	8	0	0	1
	Acting and theatre	8	2	2	3	0	0	0
	Clothes and fashion	10	3	0	3	0	0	0
	Other	10	15	18	5	3	1	2
MOTION (95 occurrences)	Motion (body)	13	9	4	0	2	0	1
	Motion (liquid)	4	7	7	4	2	2	2
	Motion (general)	2	13	5	0	2	0	2
	Motion (air)	1	5	0	0	0	0	2
	Motion (journeys)	3	1	1	0	0	0	0
HUMAN BODY (62 occurrences)	Body as object	13	9	4	3	1	0	1
	Health and illness	0	0	5	2	0	0	0
	Other	6	4	5	1	2	0	2

The most populous source domain in relation to expressions of physical architecture is HUMAN ACTIVITY (326 occurrences) followed by NATURE (193 occurrences), then ARTEFACTS (175 occurrences), MOTION (95 occurrences) and, finally, HUMAN BODY (62 occurrences). It is clear that not all subdomains have equal representation within larger source domains containers. The top five subdomains for each area of knowledge are listed in Table 5 unless the subdomain had limited representation. One example of limited representation is the source domain HUMAN BODY which was dominated by two subdomains – references to the body and its organs as objects, and references to health and sickness. The other topics in this area, including references to the senses (*sight*, *sound* and *taste*), medical processes and

biological relations (*father, sister, etc.*) generated only 13 occurrences across five source subdomains compared to 93 instances for the first two source subdomains. This pattern was common for all the source domains with two or three dominant categories and a series of minor occurrences and the most populous source subdomains have been isolated in Table 6.

Table 6. Summary of top occurrences of source domains to ARCHITECTURE [PHYSICAL]

Metaphorical Frame	Source domain	Source Subdomain	Target: ARCHITECTURE [PHYSICAL]	
			No.	Percent (of subdomain)
HUMAN	HUMAN ACTIVITY	Actions (body)	136	15.7%
HUMAN	HUMAN ACTIVITY	Social interaction	105	12.2%
NATURE		Actions (enviro.)	93	10.8%
HUMAN	ARTEFACTS	Machines	35	4.0%
NATURE		Organisms	34	3.9%
HUMAN	ARTEFACTS	Objects	34	3.9%
NATURE		Landscape	33	3.8%
HUMAN	HUMAN BODY	Human body	30	3.5%
MOTION		Motion (liquid)	29	3.4%
MOTION		Motion (human body)	29	3.4%
MOTION		Motion (general)	24	2.8%

The three most common sources are based on applying physical ACTIONS (either those of the HUMAN BODY or from the ENVIRONMENT) and SOCIAL INTERACTIONS to objects in the built environment. In fact, these three source categories are by far the most numerous by several factors of occurrence – they make up 38.7% of all metaphor sources applied to the physical aspects of architecture in a corpus with 58 source domains identified. The action/interaction source domains are followed distantly by physical references to MACHINES, ORGANISMS and the HUMAN BODY as an object. Between ORGANISMS and HUMAN BODY, aspects of the LANDSCAPE (*hill, mountain, lake, river, island*) and OBJECTS are found mapped to buildings and cities. Finally, MOTION is present and, if considered as a single domain rather than

divided into different senses of motion, would be just under ACTIONS (ENVIRONMENT) with a total of 82 occurrences. The most represented motion references are to movements based in the human body (*dance, shamble, squirm, spring, leap, swim*) and to liquids (*flow, cascade, ripple, swirling, rolling, float, turbulence*). If action, interaction, and motion are all considered as an aspect of human cognitive engagement with the environment, just under 50% (48.3%) of all metaphors in architecture use this type of information.

The mapping of ACTIONS and INTERACTIONS to architectural target domains can be illustrated through examining a few examples. The first is an example of actions based on the human body mapped to the space within a building.

(75) the pool *is pushed out* into the landscape (Eisenman 1986: 195)

In the passage above, a static object, a pool, is interpreted as having *been* pushed, creating a sense of physical activation where none exists. The target domain is clearly an aspect of physical buildings – a “pool” would be an element in higher-end residential design. The source domain is less clear as there is not any particular object, attribute or relationship being compared with the pool. However, there is clearly literal incongruence as the pool is not actually being pushed – it simply does not, nor cannot, move. Rather, the source domain projects an action into the built environment with the term “push” activating a sense of the human body engaging with objects. The metaphor is a correlational and maps visual interpretation of formal relationships to physical actions. While there is a sense of action, there is little sense of current movement and no presence of agency as the form is not either actively in motion (*running, slipping*) and no aspect of the environment is actually doing the pushing. There is the question of whom is the agent - the inference is that it is the architectural designer rather than the interaction between two elements in the environment. The metaphor is then referring to the design process rather than an interpretation of the physical building as the expression implies a previous state or normative form from which the

pool “is pushed”. The source and target domains together suggest a variation of the conceptual metaphor FORM IS ACTION, one that stresses spatial location, identity and normative appearance.

Actions are projected into the built environment in more active and complex ways as well, as can be seen by the follow passage:

(76) [the eye is directed towards] the interior, which *turns its back* on the outside world (Colomina 1992: 88)

The target domain in this example is not the building itself but the “interior” of the building both as a physical space and a conceptual idea. The source domain is the mapping of a body, most likely that of a human as the action is not simply physical but has social implications. As such, this metaphor activates the source domain of ACTIONS (BODY) rather than simply (HUMAN) BODY since it is an action of the body (*turning*) rather than a part of the body (*back*) which is important. The action exists in a social context and brings with it the social meaning of removing the attention of the gaze and, therefore, interest and the ability to interact. Two metaphors are present to allow for discourse meaning to be understood. First is the general metaphor (ARCHITECTURAL) SPACE IS A PERSON which introduces the mapping between interior space and a person using the more precise SPACE HAS A (HUMAN) BODY. The second conceptual metaphor is VISIBILITY IS RELATIONSHIP. This metaphor is the more important one in terms of meaning since movement and action, in this case, carries social meaning.

The examples above lead us into an examination of what metaphors are present in the source-target relationships. When we look at metaphors rather than just source domain information, the results reinforce the data above, but also provides a slightly different perspective (Table 7).

Table 7. Summary of top occurrences of metaphors to ARCHITECTURE [PHYSICAL]

Metaphor	Source domain	Schema	No.	Percent
OBJECTS ARE PEOPLE	HUMAN BODY	Personification	132	8.0%
FORM IS MOTION	MOTION	Spatial motion	55	3.3%
FORM IS ACTION	HUMAN ACTIVITY	Agency	54	3.3%
OBJECTS HAVE RELATIONSHIPS	HUMAN ACTIVITY	Personification	49	3.0%
OBJECTS INFLUENCE SURROUNDINGS	HUMAN ACTIVITY	Agency	42	2.5%
OBJECTS ARE ENTITIES	NATURE	Entity	40	2.4%
IDEAS ARE OBJECTS	NATURE	Object	39	2.4%
BUILDINGS ARE PEOPLE	HUMAN BODY	Personification	36	2.2%
CONNECTION IS POSITIVE	NATURE	Growth	29	1.8%
CONTROL IS GOOD	HUMAN ACTIVITY	Control	29	1.8%
ASSEMBLIES ARE PEOPLE	HUMAN BODY	Personification	25	1.5%
ENTITIES HAVE SOCIAL STANDING	HUMAN ACTIVITY	Personification	23	1.4%

The most common metaphors used to engage physical aspects of architecture (building, spaces, objects) are those based on the PERSONIFICATION schema (Lakoff and Johnson 1980; Lakoff and Turner 1989; Lakoff 1990). These metaphors project human abilities, perceptions, actions, interactions and emotions into the environment (OBJECTS ARE PEOPLE, OBJECTS HAVE RELATIONSHIPS, BUILDINGS ARE PEOPLE, ASSEMBLIES ARE PEOPLE, ENTITIES HAVE SOCIAL STANDING). The next most common metaphors are based in AGENCY – the ability to give inanimate objects the abilities to act on their surroundings but without any explicit human characteristics (FORM IS ACTION, OBJECTS INFLUENCE SURROUNDINGS). Finally, spatial motion is strongly present where the interpretation of form is given a sense of movement (FORM IS MOTION). While motion can be considered as a type of action, the analysis separated to two concepts using the factor of spatial displacement. Motion, therefore, is a type of action that pertains to change in spatial location. While concepts such as

PERSONIFICATION and AGENCY have been considered as ontological metaphors (Lakoff and Johnson 1980), the concepts are non-specific in their mappings and are “a feature shared by source and target” (Grady 2005: 49) on which metaphors are constructed. However, they are too topographically complex to be image schemas.

5.1.2 Source domains applied to the target ARCHITECTURE [ABSTRACT]

The other focus for architecture are the abstract ideas that allows it to be a discipline. When looking just at the knowledge areas that make up the ARCHITECTURE [ABSTRACT] subdomain of ARCHITECTURE, target subdomains are organized in three major groupings. The first grouping, consisting of the target categories CONCEPTUAL IDEAS and formalized THEORY, making up almost 60% of all identified metaphors (300 and 233 occurrences, respectively). Metaphors applied to the DESIGN PROCESS (147 occurrences) and discussions addressing ARCHITECTURE AS A DISCIPLINE (113 occurrences) are approximately 30% of all references. The final group, that of discussions of DISCIPLINARY TOOLS (41 occurrences), CRITICISM (37 occurrences) and URBAN THEORY (23 occurrences) round out the target domains with just over 11% of the total metaphors in this domain.

Table 8. Source domain distribution for ARCHITECTURE [ABSTRACT]

Source Domain (or metaphorical Frame)	Sub-domain	Arch. (concept)	Arch. Theory	Design process	Arch. (discip.)	Discip . tools	Criticism	Urban Theory
HUMAN ACTIVITY (349 occurrences)	Actions (body)	50	32	24	10	4	7	7
	Social Interaction	20	10	5	14	1	2	0
	Spatial properties	11	15	9	18	3	2	0
	Actions (sight based)	4	4	3	1	0	2	0
	War/Conflict	4	2	3	5	0	1	0
	Other	22	8	9	7	3	2	1
NATURE (199 occurrences)	Actions (enviro.)	29	24	14	5	4	4	2
	Organisms	21	10	3	4	0	1	1

	Physical properties	10	8	2	2	3	0	0
	Landscape	5	8	2	2	0	0	1
	Other	16	7	2	2	2	4	0
MOTION (146 occurrences)	Motion (journey)	18	20	18	4	2	2	1
	Motion (general)	11	10	20	4	4	0	2
	Motion (human body)	4	5	4	2	1	0	0
	Motion (liquid)	7	6	0	0	0	0	0
	Motion (air)	1	0	0	0	0	0	0
ARTEFACTS (131 occurrences)	Machines	10	5	4	3	3	3	1
	Objects	11	8	1	2	3	2	1
	Literature and writing	1	4	4	1	0	1	0
	Building/Room type	2	2	1	5	0	0	0
	Other	16	13	12	5	3	1	3
HUMAN BODY (65 occurrences)	Body as object	3	1	5	3	1	0	0
	Health and illness	8	7	3	4	1	1	1
	Other	7	9	3	5	1	1	1

Many of the same source domains as found in the ARCHITECTURE [PHYSICAL] domain are also present in metaphors using ARCHITECTURE [ABSTRACT] as a target domain (Table 8). Looking at source domains and totals across all target domains, the most populous source frame is HUMAN ACTIVITY with 349 occurrences. This group includes the dominate subdomains of ACTIONS (BODY) (*bring, dance, embrace, catch, strike, hold*) and SOCIAL INTERACTION (*seduce, flirt, exploit, faced, unite, heroic, conquer, accommodate, rapport*) which make up 64% of the overall category. References to SPATIAL PROPERTIES based on the understanding of activity of the human body in space has 58 occurrences. This subdomain operates as a primary container for schema concepts about spatial orientation (*up, back, front, ahead, deep, elevate, central, beyond*). Most of the other categories have a minor presence in the overall domain although the subdomain ACTIONS (FABRICATION) is the next largest with 21 occurrences. The ACTIONS (FABRICATION) subdomain refers to actions which are about making and assembling objects into other things – the use of the hands in a technical process

(*ironing, cement, wrought, joined, weave, shaped, wrench, tie, stitch, weave, link*). This source domain is not unexpected when addressing abstract ideas in a design discipline that focuses on projecting futures states of existence (i.e. buildings that architects design do not actually exist when then are designed). Much of the purpose of the discipline is about synthesizing ideas and putting them together in new wholes as an abstract extension of the physical action. The next most populous source subdomain is ACTIONS (SIGHT-BASED) which connects actions involving sight to conceptual ideas (*looking, seeing, blur, gaze, reveal, bring up, lucid, overlook*). The final source subdomain, WAR/CONFLICT, introduces concepts of military structure and actions to discussions of abstract ideas (*assault, deployment, defeat, battle, struggle, mobilized, invade, sabotage, arsenal*). Semino (2006) has shown how war metaphors are part of a more generic ANTAGONISTIC COMMUNICATIONS IS PHYSICAL CONFLICT which suggest considering the examples under communication versus action structures. The architectural examples support this position with WAR/CONFLICT metaphors mostly used to present an argument of why one ideological position should be considered better than another, or to clearly identify (and protect) architecture as a domain of knowledge.

HUMAN ACTIVITY stood out as the most common source domain used to consider abstract ideas in architecture through metaphor construction. The other major source domain groupings range from just over half as populous as human activity to one-fifth of the volume. At the higher end, NATURE contains 199 occurrences with ACTIONS being the most present subdomain within this larger container (82 occurrences). The terms found in ACTIONS as part of NATURE, however, are based in the environment rather than the human body (*rise, shift, breakthrough, layer, collapse, open, embed, transition, inflate, sedimented*). The next subdomain, PHYSICAL PROPERTIES, contains 25 occurrences and is a source of attribute information mapped to conceptual ideas (*flexible, lightness, slippery, loose, solidity, bigness,*

weight, gaps, cracks). Other references are from plants, liquids, and physical aspects of the environment.

After NATURE, MOTION is the next most populous subdomain with 146 occurrences. Rather than body movement and water-based motion (as an analogue for space) found in the physical domains of architecture, targets stressing abstract concepts in architecture prioritize the concept of JOURNEY (65 occurrences via the schema SOURCE-PATH-GOAL). JOURNEY is followed by 51 occurrences of general references to MOTION (*approach, rolling, sliding, move, rotate*). The next source domain is ARTIFICIAL (131 occurrences) and includes the subdomain MACHINES (*machine, instrument, vehicle, mechanism*) as well as OBJECTS (*object, key, petri dish, blanket, dustbin, puzzle, springs, mattress, bubbles*). MACHINES has a tendency towards terms that express the generic class rather than a specific types of machine, used as a general concept to structure more abstract target domains. The final source domain is the HUMAN BODY (65 occurrences) and contains the subdomains BODY AS OBJECT (*muscular, organs, body, backbone, face*) and HEALTH AND ILLNESS (*scar, outbreak, undernourished, resurrection, thrive, virus*).

In order to clearly illustrate quantitative relationships between subdomains, the categories with the largest occurrences have been isolated (Table 9).

Table 9. Summary of occurrences of source domains to ARCHITECTURE [ABSTRACT]

Metaphorical Frame	Source domain	Source Subdomain	Target: ARCHITECTURE [ABSTRACT]	
			No.	Percent (of subdomain)
HUMAN	HUMAN ACTIVITY	Actions (body)	134	14.9%
NATURE		Actions (enviro.)	82	9.2%
MOTION		Motion (journeys)	65	7.3%
HUMAN	HUMAN ACTIVITY	Spatial properties	58	6.5%
HUMAN	HUMAN ACTIVITY	Social interaction	51	5.7%
MOTION		Motion	51	5.7%
NATURE		Organisms	40	4.5%

HUMAN	ARTEFACTS	Machines	29	3.2%
HUMAN	ARTEFACTS	Objects	28	3.1%
NATURE		Physical properties	25	2.8%

As noted above, ACTIONS dominate the source concepts by a large margin in the form of inferences of body ACTIONS (*take, push, bring, open, probe, abandon*) and ACTIONS based in environmental forces and activities (*shatter, erupt, shift, collapse, embed*). These are followed by applying MOTION to thinking, either through concepts of JOURNEYS (*strayed from a course, led to, pass each other in different directions, marks a departure, expeditions*) or through a general sense of MOTION (*darting, travels, rotate, fleeting, sliding, move*). The remaining source domains for abstract concepts of ARCHITECTURE are based on spatial and physical properties grounded in a general understanding of existing in the world and the overall relationship between sources and targets leads us into an examination of what metaphors are constructed by these relationships.

The relationship between source domains and architecture target domains create the conceptual metaphors that are commonly found in architectural theory discourse (Table 10). These metaphors are highly spatialized and centred on ways of understanding abstract ideas.

Table 10. Summary of top occurrences of metaphors to ARCHITECTURE [ABSTRACT]

Metaphor	Source domain	Schema	Occurrences	Percent
CONCEPTS ARE OBJECTS	NATURE	OBJECT	182	8.9%
CONCEPTS HAVE LOCATIONS	NATURE	SPACE	130	6.3%
CONCEPTS HAVE HUMAN BODIES	HUMAN BODY	PERSONIFICATION	85	4.1%
CONCEPTS ARE ORGANISMS	NATURE	ENTITY	74	3.6%
CONCEPTS ARE CONTAINERS	NATURE	OBJECT	54	2.6%
THINKING IS MOVEMENT	MOTION	SPATIAL MOTION	47	2.3%
(CONCEPTUAL) EVENTS ARE ACTIONS	HUMAN ACTIVITY	AGENCY	46	2.2%
PROXIMITY IS RELATIONSHIP	HUMAN ACTIVITY	SPACE	39	1.9%
CONCEPTS ARE AGENTS	HUMAN ACTIVITY	AGENCY	31	1.5%
STABLE IS GOOD	NATURE	OBJECT	29	1.4%

KNOWING IS SEEING	HUMAN BODY	BODY	29	1.4%
CONTROL IS GOOD	HUMAN ACTIVITY	CONTROL	28	1.4%
FORWARD IS PROGRESS	MOTION	SPATIAL MOTION	25	1.2%
PROXIMITY IS EFFECT	HUMAN ACTIVITY	SPACE	23	1.1%

The most common conceptual metaphor applied to the target domain ARCHITECTURE [ABSTRACT] is, unsurprisingly, about making ideas into objects (CONCEPTS ARE OBJECTS). This is followed by locating ideas in space (CONCEPTS HAVE LOCATIONS). Metaphors addressing abstract concepts consistently use spatial references and physical properties, both of which require abstract ideas to have physical presence and be located in a particular space, hence suggesting a reason for the popularity of these first two metaphors. There are related metaphors present in significant quantities including CONCEPTS ARE CONTAINERS (as a corollary of CONTAINERS ARE OBJECTS), PROXIMITY IS RELATIONSHIP, PROXIMITY IS EFFECT, and FORWARD IS PROGRESS. These conceptual metaphors first require abstract ideas and concepts to be mapped into objects or substances that are situated and can be manipulated. In addition, the projection of the ideas into human bodies is also present (CONCEPTS HAVE HUMAN BODIES). This is joined by CONCEPTS ARE ORGANISMS and (CONCEPTUAL) EVENTS ARE ACTIONS, both versions of previously discussed metaphors which swapping the concrete (OBJECT) for the abstract (CONCEPT).

5.2 Metaphor cognitive schema and motivation

5.2.1 Image schema

As noted earlier (Chapter 3.3.1), conceptual metaphors have been proposed to be built on image schemas as persistent, abstracted concepts. These schemas are important in order to understand the dimensionality of metaphors (Lakoff 1987; Gibbs 2005; Johnson 2005, 2007).

In the coding of the architectural corpus, image schemas were identified. Table 11 lists the most common schemas present in the text organized by category.

Table 11. Top schema categories in ARCHITECTURE by quantity

Schema Category	Image Schema	No.	Percent
Force Dynamic	FORCE, PENETRATION, REMOVAL OF RESTRAINT, EXPANSION, RESTRAINT, COUNTERFORCE, COMPULSION, FRAGMENTATION, RESISTANCE, BLOCKAGE, BEND/FOLD, PRESSURE, ATTRACTION, PUSH, FLOAT, COMPRESSION, CONNECTION, PULL, TENSION, ATTACHMENT, SEPARATION, DISCONNECTION, IMPACT, PLASTICITY, CONTRACTION, INTERSECTION, SLICE, RIPPLE, SLIPPAGE, TWISTING, ENABLEMENT, ROLL, TEAR (RIP), PROJECTION, WEAVE, DIVERSION, FLOW, STRAIN	632	24.0%
Containment	CONTAINER, SURFACE, BOUNDARY, IN-OUT, OPEN-CLOSED, WRAP, FULL-EMPTY, CONTENT	503	19.1%
Space	UP-DOWN, LOCATION, CENTER-PERIPHERY, PROXIMITY, FRONT-BACK, ABOVE-BELOW, FOREGROUND-BACKGROUND, NEAR-FAR, OVER-UNDER, CONTACT, ORIENTATION, VERTICAL ORIENTATION-LACK OF VERTICAL ORIENT., BETWEEN, LEFT-RIGHT, BEHIND, STRAIGHT, BESIDE, ALIGNMENT	407	15.4%
Spatial Motion	FORWARDS-BACKWARDS, INWARDS-OUTWARDS, MOMENTUM, PATH, ROTATION, FAST-SLOW	304	11.5%
Multiplicity	PART-WHOLE, LINKAGE, MERGING, SPLITTING (DIVISION), REPETITION, LAYERING, COUNT-MASS, COLLECTION, SEQUENCE, STACKING, ITERATION	236	8.9%
Existence	GOAL, CYCLE, AGENT, SOURCE, REMOVAL, PRESENCE (MANIFESTATION), COVER, PROCESS, CONTINUITY, CYCLIC CLIMAX, DECAY, RISK-REWARD	235	8.9%
Attribute	DISTINCT-OBSCURE, SMOOTH-ROUGH, DARK-BRIGHT, HARD-SOFT, HEAVY-LIGHT, LENGTH (EXTENDED TRAJECTOR), BIG-SMALL, LOUD-SILENT, OPAQUE-TRANSPARENT, STRAIGHT-CURVED, DEEP-SHALLOW, SOLID-VOID, MAT-REFLECTIVE, THIN-THICK, WARM-COLD, DRY-WET, HUED-DULL, SHARP-DULL (LINE BASED), SMOOTH-TEXTURED (PATTERN), FIXED-FLUID, MORE-LESS, SCALE, STRONG-WEAK, TRANSITORY-PERSISTENT, LOOSE-TIGHT, NEW-OLD, SHORT-TALL	210	8.0%
Identity	STRUCTURE-LACK OF, ORDER-DISORDER, ISOLATION, SUPERIMPOSITION, MATCHING	86	3.3%
Balance	BALANCE	23	0.9%

If metaphors are used to make sense of buildings in architectural discourse, one might expect that image schemas associated with space would be dominant. While the presence of space schemas is certainly notable, the most populous categories of schemas are those pertaining to force dynamics (632 occurrences) and containment (503 occurrences). These are closely followed by schemas that situate things in space (407 occurrences) and ones that address spatial motion (304 occurrences). Image schema concepts that pertain to the knowledge of manipulating the relationship between parts and wholes (multiplicity – 236 occurrences), issues of sentience and self-awareness (existence – 235 occurrences) and schema relating to the attributes of objects and phenomena (210 occurrences) are fairly balanced. The last schema categories stress concepts of identity (86 occurrences) and balance (23 occurrences).

Table 12 lists the top occurrences of image schema (rather than schema categories) found in conceptual metaphors in the corpus.

Table 12. *Image schemas in ARCHITECTURE*

Schema Category	Image Schema	ARCHITECTURE [PHYSICAL]	ARCHITECTURE [ABSTRACT]	Total
Spatial Motion	PATH	46	128	174
Containment	CONTAINER	68	82	150
Containment	SURFACE	99	45	144
Space	UP-DOWN	38	41	79
Containment	BOUNDARY	46	32	78
Space	LOCATION	19	58	77
Spatial Motion	MOMENTUM	35	47	72
Force Dynamic	FORCE	34	34	68
Identity	STRUCTURE/LACK OF	27	39	66
Containment	IN-OUT	25	39	64
Multiplicity	PART-WHOLE	23	23	46
Space	CENTER-PERIPHERY	20	24	44
Existence	GOAL	9	31	40
Attribute	DISTINCT-OBSCURE	10	30	40
Force Dynamic	PENETRATION	22	17	39
Force Dynamic	REMOVAL OF RESTRAINT	17	22	39

While the most populous schema category is force dynamic, the individual image schemas that had the strongest presence in the corpus are based in spatial motion and containment. PATH had the most occurrences (174 occurrences) and is involved in the construction of various metaphors that reference journey, endings, and forward motion such as THINKING IS MOVEMENT, FORWARD IS PROGRESS, DIRECTION IS CHANGE, and MOMENTS IN TIME ARE OBJECTS IN MOTION ALONG A PATH. Unsurprisingly, it was more common to find the schema associated with abstract ideas rather than discussions of physical spaces (128 versus 46 occurrences). While not as numerous, the associated image schemas SOURCE and GOAL are also present in the corpus both as single appearances as well as part of the more complex gestalt of JOURNEY (SOURCE-PATH-GOAL). Out of the three, SOURCE had the least occurrences (27 occurrences) when compared to PATH (174 occurrences) and GOAL (40 occurrences).

PATH was followed by several containment schemas, the top two being CONTAINER and SURFACE followed by BOUNDARY and IN-OUT. These are involved in metaphors such as KNOWING IS SEEING, STATES ARE LOCATIONS, CONCEPTS ARE OBJECTS, INSIDE IS ACCESS, and CONCEPTS ARE CONTAINERS – in fact, any metaphor that uses concepts of bounded area. Occurrences of these image schemas were fairly evenly split between descriptions of physical spaces and abstract architectural ideas, although SURFACE was mostly present in metaphors focused on physical target domains.

Image schemas referring space are present with UP-DOWN topping the list of occurrences. The UP-DOWN schema is associated with many different types of metaphors from ones that are fairly obvious such as GOOD IS UP, BAD IS DOWN, and MORE IS UP to ones based in KNOWING IS SEEING or AWARENESS IS UP (“to bring up”). The next most common space schemas were LOCATION (77 occurrences) and CENTRE-PERIPHERAL (44

occurrences). LOCATION was present in basic forms such as the metaphors IDEAS HAVE LOCATIONS and LOCATION IS EFFECT. It was also involved with other image schema to provide context in spatial motion schema as well as PROXIMITY (30) to give spatial relationships such as the metaphors CONNECTIVENESS IS GOOD and DISTANCE IS RELATIONSHIP. Related to the spatial proximity schemas is CENTRE-PERIPHERAL which generally activates the metaphor CENTRE IS IMPORTANT but is also part of inferences that use NEAR-FAR (20 occurrences) and FOREGROUND-BACKGROUND (22 occurrences).

The most populous representative of force dynamic schemas is a generic sense of FORCE (68 occurrences). Many of the metaphors using this schema activate the concept of control, which is also involved with other image schema such as containment (CONTROLLED IS CONTAINED), space (CONTROL IS ABOVE) and body actions (CONTROL IS GRASPING). In these cases, a general sense of force is applied in order to infer control. The presence of generic forces is followed by the more particular actions PENETRATION (39 occurrences) and REMOVAL OF RESTRAINT (39 occurrences). PENETRATION is often associated with CONTAINER as to get inside something is to have access to what is there (ACCESS IS INSIDE), but it is also found in expressions of agency. Aspects of agency as force was the image schema that most often activated EVENTS ARE ACTIONS, IDEAS HAVE HUMAN AGENCY, and OBJECTS ARE PEOPLE. In contrast, REMOVAL OF RESTRAINT is involved with metaphors of free movement and the positive interpretation of this action. The next most common force dynamic image schemas in the architectural corpus are EXPANSION (38 occurrences), RESTRAINT (36 occurrences), COUNTERFORCE (34 occurrences) and COMPULSION (33 occurrences).

No single attribute image schema had a large presence in the corpus data, which is somewhat surprising when considering the important of physical characteristics being mapped to abstract concepts in metaphor theory (Lakoff and Johnson 1980: 109). The

attribute with the most occurrences was DISTINCT-OBSURE (40 occurrences), mostly applied to metaphors relating visibility to knowledge such as KNOWING IS SEEING. The next closest group included references to SMOOTH-ROUGH (18 occurrences), DARK-BRIGHT (16 occurrences), HARD-SOFT (14 occurrences), and HEAVY-LIGHT (12 occurrences). Other notable image schema in the corpus are references to multiplicity and more complex formal manipulation of the environment. These include PART-WHOLE relationships (46 occurrences), LINKAGE (36 occurrences), MERGING (36 occurrences), SPLITTING OR DIVISION (33) and REPETITION (24). These image schemas are linked in the data to metaphors that activate agency (such as EVENTS ARE ACTIONS, INANIMATE PHENOMENA HAVE HUMAN AGENCY, and IDEAS HAVE HUMAN AGENCY) but also the mapping of abstract concepts to objects (IDEAS ARE OBJECTS).

While the discussion above highlights image schemas with the most occurrences as part of the corpus, the coding generated 130 image schemas across nine categories as listed in Table 11. This inventory of image schemas expands from previously reported schemas (Croft and Cruse 2004) to document the range of schemas operating in metaphors found in architectural discourse.

5.2.2 Primary metaphors

While metaphor analysis could be left at the level of conceptual metaphor, the cognitive structural relationships can be examined by decomposing them into more generic structures to better understand the dimensionality of metaphors (Grady 1997). In the target domain of ARCHITECTURE, this process resolves into some clear clustering around certain conceptual relationships as shown in Table 13.

Table 13. Primary to conceptual metaphor hierarchy (by quantity)

Primary Metaphor	Conceptual Metaphor, Level 1	Conceptual Metaphor, Level 2
(BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA	SPACE IS AN OBJECT	SPACE IS FABRIC
	SPACE IS A LIQUID	SPACE IS WATER
	EVENTS ARE OBJECTS	
	CONCEPTS ARE OBJECTS	CONCEPTS ARE CONTAINERS CONCEPTS ARE LANDSCAPES
INANIMATE PHENOMENA HAVE HUMAN BODIES	OBJECTS HAVE HUMAN BODIES	BUILDINGS ARE BODIES ASSEMBLIES HAVE BODIES
	CONCEPTS HAVE HUMAN BODIES	
PROXIMITY IS EFFECT	PROXIMITY IS DEGREE OF RELATIONSHIP	CLOSE IS RELATIONSHIP INSIDE OR UNDER IS PROTECTED CONNECTEDNESS IS POSITIVE
	RELATIVE LOCATION IS DEGREE OF CONTROL	INSIDE OR UNDER IS CONTROLLED BEING IN CONTROL IS BEING ABOVE
	DEGREE OF CONTACT IS DEGREE OF CONTROL	GRASPING IS CONTROLLING HOLDING IS CONTROLLING TOUCHING IS INFLUENCING
EVENTS ARE ACTIONS	(STATIC) OBJECTS MAKE ACTIONS	BUILDINGS MAKE ACTIONS CITIES MAKE ACTIONS
	(BOUNDED) ABSTRACTIONS ARE AGENTS	SPACES MAKE ACTIONS CONCEPTS MAKE ACTIONS (AGENTS)
SITUATION IS LOCATION	CONCEPTS HAVE LOCATIONS	
	EXPERIENCE IS A LOCATION IN SPACE	
	STATES HAVE LOCATIONS	
INANIMATE PHENOMENA HAVE HUMAN AGENCY	OBJECTS HAVE RELATIONSHIPS	BUILDINGS HAVE RELATIONSHIPS
	OBJECTS ARE PEOPLE	BUILDINGS ARE PEOPLE
	SPACES ARE PEOPLE	SPACES HAVE HUMAN SENSES SPACES HAVE EMOTIONS SPACES HAVE SOCIAL STANDING
FORM IS MOTION	VISUAL INTERPRETATION IS PHYSICAL MOVEMENT	
	REPETITION IS FORWARD MOTION	
EVENTS ARE MOTIONS	DIRECTION IS DEVELOPMENT	FORWARD IS PROGRESS
	TIME IS MOTION	
KNOWING/UNDERSTANDING IS SEEING	ACCESS TO VIEW IS ACCESS TO UNDERSTANDING	PERCEPTIBLE IS OUT/UP ACCESSIBLE TO AWARENESS IS OUT/UP
	ATTENTION IS SEEING	
THINKING IS MOTION	IDEAS ARE PATHS	
	MODE OF MOTION IS QUALITY OF EXPERIENCE	
	SIMILARITY IS DIRECTIONALITY	SAME ORIENTATION IS AGREEMENT CHANGE DIRECTION IS CHANGE IDEA
INANIMATE PHENOMENA ARE ENTITIES	OBJECTS ARE ORGANISMS	OBJECTS ARE ANIMALS OBJECTS ARE PEOPLE
VISION IS TOUCHING	PERCEPTION IS CHARACTERISTICS	CONNECTEDNESS IS POSITIVE
	ENGAGEMENT IS VISIBILITY	VISIBILITY IS ATTENTION
ESSENTIAL IS INTERNAL	ESSENTIAL CHARACTERISTIC IS DEPTH	DEEP IS SIGNIFICANT
	INSIDE IS ACCESS	

The most common primary metaphor in the corpus is (BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA (333 occurrences), a very low-level mapping that generally associates abstract concepts with inanimate phenomena. The primary metaphor resolves into higher level metaphors such as CONCEPTS ARE OBJECTS and EVENTS ARE OBJECTS. An example of this metaphor is:

(77) symbol and form *can be extracted* from the object. (Eisenman 1986: 191)

While “object” in (77) is a physical phenomenon that exists in concrete space, both “symbol” and “form” are abstractions. However, there is incongruence in the expression as both the “symbol” and the “form” are being removed from the “object”, a conceptual mapping that places all three in relationship to each other, making symbol and form as a part of an object. As symbol and form are abstract and cultural ideas, the only way they can be equated with the object is by being considered as objects themselves, activating an underlying primary metaphor of (BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA. The type of phenomena ranges from general objects and substances to particular instances of fabrics, machines, landscapes, territories and liquids. Of course, the metaphor does not end with this mapping as there is obviously action occurring in the passage above through “extracted” but none of this would be possible without the most basic transfers between ideas and objects.

The next most populous primary metaphor, INANIMATE PHENOMENA HAVE HUMAN BODIES (309 occurrences), is part of a larger chain that starts with INANIMATE PHENOMENA ARE ENTITIES, which resolves into INANIMATE PHENOMENA ARE ORGANISMS as well as being associated with INANIMATE PHENOMENA HAVE AGENCY (EVENTS ARE ACTIONS). The former can then associate organisms with being human through the metaphor INANIMATE PHENOMENA ARE PEOPLE. This last metaphor has two aspects – the physical existence of people (bodies, actions, etc.) and the social context of people (relationships, communication, social standing,

etc.). While the discussion above is resolving the source domain (entities → organism → humans), the target domain can also move through stages of more specificity. In architecture, the generic target domain of INANIMATE PHENOMENA tends towards buildings, building elements, spaces, and environmental phenomena, such as can be seen in the following examples:

(78) concert hall and opera house envelopes as naked forms on the site
(Kipnis 2013: 131)

(79) that pollution builds its body and makes its demanding presence visible. (Lerup 2001: 52)

In both examples above, incongruence is being created by something that is not an organic entity being considered as having a human biological body. In (78), the primary metaphor INANIMATE PHENOMENA HAVE HUMAN BODIES resolves into the higher-level BUILDINGS ARE HUMAN BODIES, inferred through the expression “naked” as a physical event. Obviously building do not wear clothing but they are being considered as being people in this passage. As noted earlier, the notion of skin and clothes as being the outer surface of buildings is a normalized expression in architectural discourse (Chapter 2.4.2). In example (79), the primary metaphor INANIMATE PHENOMENA HAVE HUMAN BODIES resolves into the higher-level POLLUTION HAS A HUMAN BODY, which is much more complicated than the previous passage (78). In order for pollution to be conceived as being human, there has to be an understanding of substances in the atmosphere as both a physical phenomenon but also a bounded conceptual idea. Like the previous example, the body is mapped to the phenomenon in order to do something else - a body that can then make demands.

As suggested through the examples above, INANIMATE PHENOMENA and BOUNDED ABSTRACTIONS are not conceived as solids or entities simply for the sake of being an object or an organism (and thus people). While these two primary metaphors dominate a quantitative analysis of the corpus data, they are hierarchically very basic and enablers for other

metaphorical constructions that meet the needs of the discourse meaning of the expression. We might consider objects, entities and substances to be little more than rich schema operating as a scaffold for conceptual metaphors in the same way as other image schemas, rather than being robust metaphors themselves (Johnson 1987). If we look at the primary metaphors that have the largest presence in the corpus after (BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA and INANIMATE PHENOMENA HAVE HUMAN BODIES, there is clear activation of concepts of spatial location, actions, and motion. These are found in the primary metaphors PROXIMITY IS EFFECT, EVENTS ARE ACTIONS, SITUATION IS LOCATION, INANIMATE PHENOMENA HAVE HUMAN AGENCY, and FORM IS MOTION. These metaphors are built on the understanding of ideas as objects and objects as organisms but use that mapping to apply actions, associate things in spatial relationship to each other. This activates motion that is then associated with directionality, orientation and velocity.

The two most common of the primary metaphors relating to effects of spatial location are PROXIMITY IS EFFECT (252 occurrences) and SITUATION IS LOCATION (191 occurrences). The former supports conceptual metaphors that relate the effect of one thing onto another through the spatial closeness of those two things. This includes the metaphor TO BE PHYSICALLY CLOSE IS TO HAVE AN EMOTIONAL RELATIONSHIP which maps between physical space and human relationships as well as metaphors associating proximity to influence, importance and protection. Proximity ranges from far enough apart to have no effect to being so close that touching or grasping becomes the activating concept (TO HOLD IS TO CONTROL, TO TOUCH IS TO INFLUENCE). The next primary metaphor is SITUATION IS LOCATION, a metaphor that also uses spatial location to place and orientate concepts and experiences. The conceptual metaphors that are resolved from this primary metaphor include abstractions occupying places (“But his *deeper* motive”), non-proximity based spatial relationships between abstractions (“the theater box exists at *the intersection* between claustrophobia and

agoraphobia”) and abstractions considered elements in the visual field of humans (“Zumthor *points* to aspects of the future”). As we can see in the examples, these primary metaphors are also associated with actions and motions when found in discourse.

The primary metaphors based in transferring agency to inanimate phenomena are also well represented in the corpus data. This include EVENTS ARE ACTIONS (243 occurrences), which supports concepts of general agency. The metaphors resolved from this primary metaphor have a tendency to be focused on actions based in force dynamics where one element of the building engages another (“three volumes *penetrate* into each other” and “fixtures that *punctuate* the ramp and the lecture hall”). Other expressions of agency infer the mappings between objects and the characteristics of organisms such as mammals (“when this surface could *brush up* in exquisite proximity to the architectural surface,”) or the form of plants such as vines (“two surfaces that are *entangled* but do not conflate”). Agency extends into wide range of expressions from actions of forces and organisms above to more clearly human notions of influence and relationships. The latter shifts conceptual metaphors from OBJECTS MAKE ACTIONS and (BOUNDED) ABSTRACTIONS ARE AGENTS to those such as OBJECTS HAVE RELATIONSHIPS, OBJECTS EXERT INFLUENCE, and OBJECTS ARE PEOPLE. The primary metaphor that is decomposed from this group is INANIMATE PHENOMENA HAVE HUMAN AGENCY (137 occurrences), activating metaphorical expressions through the presence or capacity of a human. In these metaphors, buildings, building elements, spaces and ideas maintain relationships either other (“these open [vaults] *beg* the air for yet more”), perform actions as if they had human bodies (“windows *catch* a departing cloud”), and become active participants with their human users (“these surfaces *work* to provoke strong synaesthetic responses in the viewer”). A large percentage of the conceptual and primary metaphors present in the corpus activated a type of agency by projecting actions, emotions and abilities into inanimate phenomena and abstractions.

While actions can be considered as a type of motion, the term *motion* as a source domain in conceptual and primary metaphors is being reserved for objects and entities changing spatial location. Metaphors that activate motion through spatial movement rather than action are present in the corpus. These conceptual metaphors are based in interpreting visual information as physical motion, considering ideas and abstract concepts as paths and objects moving through space, relating qualities of experiences to modalities of motion and relating direction to similarity. While there are several diverse conceptual metaphors, when decomposed they are found to be based on three primary metaphors: FORM IS MOTION (91 occurrences), EVENTS ARE MOTIONS (89 occurrences), THINKING IS MOTION (80 occurrences). Each of these relate either a bounded abstraction or inanimate phenomena (objects) to inanimate motion, rather than agency-based caused motion.

Other primary metaphors in the corpus with significant presence are KNOWING/UNDERSTANDING IS SEEING (82 occurrences), OBJECTS ARE ORGANISMS (71 occurrences), (LOGICAL) ORGANIZATION IS PHYSICAL STRUCTURE (29 occurrences), VISION IS TOUCHING (27 occurrences), LOOKING IS ATTENTION (17 occurrences) and ESSENTIAL IS INTERNAL (18 occurrences). It is not surprising to find these metaphors present as the source domains of vision and physical structure have been identified as a way that abstract ideas are concretized (Grady 1997).

5.3 Taxonomy of the corpus

While the decomposition of cognitive metaphors into primary metaphors as presented above is one approach to organizing discourse occurrences of conceptual metaphors based on degree of genericity, there are three other taxonomic systems used in this dissertation. These classifications are applied to high level conceptual metaphors rather than the more generic

primary metaphors. The taxonomic systems were original presented in Chapter 3.4 and have been summarized in Table 14 below.

Table 14. *Metaphor taxonomic categories*

Classification parameter	Category	Criteria
Nature of source domain	Sensori-motor	The source information is based on body experience and fundamental gestalts of sensory experience.
	Cultural	The source information is based on knowledge as constructed and shared between humans.
Degree of conventionalization	Novel	The metaphor is used knowingly by the speaker/writer.
	Conventionalized	The metaphor is not recognized as being metaphorical by the speaker/writer.
Nature of the mapping system	Resemblance (attributes)	The metaphorical mapping uses attribute information (shape, colour, etc.) as the primary motivation to construct similarity.
	Resemblance (relations)	The metaphorical mapping uses relations between domain objects as the primary motivation to construct similarity.
	Correlation	The metaphorical mapping uses non-similarity, reoccurring domain associations based on experiential motivation.

Primary metaphors develop from sequential decomposition of conceptual metaphors, creating a chain of associated mappings of increasing abstraction. Differing from this structure, the taxonomy systems listed above are found in parallel to each other. This means that each category can be applied independently to a conceptual metaphor without a conflict between classifications. For example, a conceptual metaphor identified in a metaphorical expression can be classified as being novel, cultural and resemblance (relations) at the same time. There are some patterns created between the classification systems, for example correlational metaphors are always conventionalized except in a few rare cases. In addition, correlational metaphors also tend towards sensori-motor source domains. Assigning the classification system to all metaphors in the corpus allows a confirmation of these tendencies while also

being able to isolate particular aspects of a metaphor such as if architectural discourse stresses novel metaphors or use mostly culturally derived source domains.

5.3.1 *Sensori-motor and cultural*

One of the ways that metaphors in the architectural theory corpus can be considered is the through the classification of sensori-motor versus cultural sources. While sensori-motor knowledge extends from image schema, embodied knowledge and body experience, cultural models allow access to knowledge about things that we have not experienced directly. In source domains classified as cultural, our knowledge is developed through interactions with other humans and systems of communications. The quantity of incidences and distribution across the architectural target domains for this classification system can be found in the table below.

Table 15. Primary Sensori-motor versus cultural metaphor sources

	Target Domain	Sensori-motor		Cultural	
		No.	Percent	No.	Percent
Physical	BUILDINGS	118	7.9%	114	7.6%
	BUILDING (PARTS)	119	7.9%	94	6.2%
	BUILT ENVIRO (URBAN SPACE)	56	3.7%	87	5.8%
	BUILDING (SPACE)	44	2.9%	56	3.5%
	BUILDING (EXPERIENCE)	11	0.7%	4	0.3%
	BUILDING (MATERIALS)	3	0.2%	4	0.3%
	BUILT ENVIRO (OTHER)	24	1.6%	28	1.9%
	Abstract	ARCHITECTURE (CONCEPTUAL IDEA)	127	8.4%	131
ARCHITECTURAL THEORY		124	8.2%	82	5.4%
DESIGN PROCESS		72	7.8%	50	3.3%
ARCHITECTURE AS A DISCIPLINE		51	3.4%	48	3.2%
DISCIPLINARY TOOLS		17	1.1%	13	0.9%
CRITICISM		18	1.3%	12	0.8%

Metaphorical sources classified as originating in sensori-motor knowledge are equality balanced in the corpus with those that are activating primarily cultural knowledge. This is somewhat surprising as there was an expectation that sensori-motor sources would be the more populous considering that CMT theories present embodied, concrete experiences as the foundation for more abstract experiences and, thus, the building blocks of cognition. It is also understood that a large portion of sensori-motor metaphors should align directly with image schema representation (c.f. 5.2.1). Looking across all the target domains, only ARCHITECTURAL THEORY and conceptual discussions of the DESIGN PROCESS show significant differences in proportion between sensori-motor and cultural sources. This reinforces what was expected with more conceptual targets drawing strongly on sensori-motor knowledge.

When we examine just the larger categories, the balanced representation between source types, as well as the small differences, are apparent (Table 16). Metaphors focused on physical target domains are almost equal in occurrences to those found in the abstract discussions of architecture. However, a small increase in sensori-motor content can be seen in the target domains for abstract discussions of architecture.

Table 16. Sensori-motor versus cultural metaphor distribution

Target Frame	Sensori-motor	Cultural
ARCHITECTURE [PHYSICAL]	24.9%	25.7%
ARCHITECTURE [ABSTRACT]	27.1%	22.3%

The data shows clear predications towards particular types of information when considering the general ARCHITECTURE target domain with a focus on the type of source content that is being used. Isolating sensori-motor content, the most common references are listing in the following table.

Table 17. Focus of sensori-motor metaphors by occurrence volume

Source Domain	Source Focus
HUMAN ACTIVITY	motion
HUMAN ACTIVITY	action of the hand
HUMAN BODY	skin
HUMAN EXISTENCE	health
ORGANISMS	actions
HUMAN EXISTENCE	death
HUMAN BODY	heart
HUMAN BODY	face
HUMAN BODY	arms
ENVIRONMENTAL	weight
HUMAN EXISTENCE	breathing
ENVIRONMENTAL	elevation
HUMAN EXISTENCE	lifecycle

The most common sensori-motor concept used as a reference in metaphor is the notion of motion as a type of human activity (*move, fall, leap*). The next most common sensori-motor source grouping also uses human activity and is ACTIONS involving the human hand. This is found in metaphorical expressions involving body schemas such as *giving, grasping, taking, touching, holding* and *catching*. There are other references to the human body in the list including expressions that include the arm so that inanimate phenomena, objects, concepts and abstractions *reach, embrace, gather* and *gesture*. Non-human actions are also found amongst the sensori-motor source domains including expressions that would have objects and ideas *shedding, brushing up against, and nudging* parts of their context. It is not just motions and actions that have the human body engaged through metaphors but also through physical aspects such as *skin, face, and heart* as important concepts. Besides the human body, concepts of human existence are present including *health, death, lifecycle* and *breathing*. While the latter might be considered also a body action, the idea of breath is closely related to issues of *presence, life* and *being*. Other sensori-motor concepts come from understanding the

body in the physical context of the world and include issues of gravity that include weight (related to structure, erectness and stability) and elevation (up-down).

Metaphors using cultural information have a different focus even when using the same generic source domain (i.e. HUMAN ACTIVITY can be both a sensori-motor concept such as *move* and the cultural concept of *journey*). Table 18 lists the most prominence content found in metaphors classified as being culturally orientated.

Table 18. Focus of cultural metaphors (by quantity)

Source Domain	Source Focus
HUMAN ACTIVITY	journeys
ENVIRONMENTAL	island
ARTEFACTS	machine
ARTEFACTS	clothes
BUILDINGS	stage
NATURE	tree
NATURE	roots
HUMAN ACTIVITY	dance
ARTEFACTS	ghost
NATURE	shell
HUMAN ACTIVITY	conflict
ENVIRONMENTAL	water
NATURE	fish
ARTEFACTS	sail

Knowledge in this area can be grouped into four categories – 1) knowledge of physical artefacts such as *machines* or *clothing*; 2) knowledge of artefacts of cultural narratives such as *ghosts*, *politics* and *education*; 3) more complex activities which require human infrastructure or social contexts such as *dance*, *journeys*, *war*, and *fabrication*; and 4) knowledge of the world, landscape and nature constructed through cultural narratives such as *islands*, *oceans*, *plants* and *animals*. The top source domain is HUMAN ACTIVITY as seen in the sensori-motor category. However, rather than using inherent body movement or force

dynamic actions, the content of this source is focused on JOURNEYS as a cultural expression which includes concepts of *beginnings*, *destinations* and *paths*. Various other types of artefacts are present in the cultural expression found in metaphors. Some of these are physical objects dominated by references to *machines*, *mechanization* and *devices*. Clothing is a frequently referenced cultural object and seems to be an extension of the understanding of objects having bodies, a cultural overlay on knowledge based in sensori-motor content. Another frequent domain involves mappings between features of the natural environment as LANDSCAPE and BUILDINGS or CITIES with *island* being one of the top occurrences in this corpus but also joined by references to *pools*, *sea*, *mountains*, and *rivers*. While landscape has long been part of metaphorical mappings for buildings (Muller 2009: 192), the source content was not historically classified as a metaphor but rather as a literal source of meaning and truth (Hogarth 1810; Laugier 1977; Boffrand 2003; Blondel 2004). Nature and landscape as culturally constructed knowledge – the idea of the mountain, the river or the tree - is still strongly present in architectural discussions.

Classification of the corpus metaphor data into either sensori-motor or cultural sources allows for a clear depiction of the priorities, relevant mappings and readily available source material that architects use to consider their discipline. Quantitatively, the two aspects of this taxonomy are balanced between concrete and abstract expressions with only a minor increase of sensori-motor expressions in the more conceptual discussions of architecture.

5.3.2 *Conventionalized and novel*

Besides sensori-motor and cultural categories of classification, it is also useful to examine if metaphors are conventionalized or novel in their use. Conventionalized metaphors include expressions which have been normalized to the discipline yet produce incongruence when examined for their concrete meaning. An example is the presence of concepts from the source

domains such as *machines*, *human body* and *animals* which have been completely normalized as part of architectural discussions. At the same time, metaphor has been clearly shown to be consciously used (i.e. as a novel expression) as a key component of the architectural design process either through anecdotal approaches (Coyne and Snodgrass 1992, 1995; Coyne et al 1994; Casakin and Goldschmidt 1999; Casakin 2007, 2011; Casakin and van Timmeren 2015) or corpus studies (Caballero 2006, 2012, 2013). As such, there is an expectation that metaphors used knowingly for explanatory or innovative purposes would dominate when the justification of built form is the subject matter (i.e. in the genre of building reviews or project explanation). The quantitative distribution to the architectural target subdomains are listed in the table below.

Table 19. Conventionalized versus novel metaphor sources

	Target Domain	Conventionalized		Novel	
		No.	Percent	No.	Percent
Physical	BUILDINGS	165	11.5%	60	4.1%
	BUILDING (PARTS)	163	11.2%	44	3.0%
	BUILT ENVIRO (URBAN SPACE)	90	6.2%	44	3.0%
	BUILDING (SPACE)	63	4.3%	32	2.2%
	BUILDING (EXPERIENCE)	12	0.8%	3	0.2%
	BUILDING (MATERIALS)	7	0.5%	0	-
	BUILT ENVIRO (OTHER)	41	2.8%	10	0.7%
Abstract	ARCHITECTURE (CONCEPTUAL IDEA)	207	14.3%	40	2.8%
	ARCHITECTURAL THEORY	176	12.1%	22	1.5%
	DESIGN PROCESS	96	6.6%	22	1.5%
	ARCHITECTURE AS A DISCIPLINE	86	5.9%	10	0.7%
	DISCIPLINARY TOOLS	28	1.9%	2	0.1%
	CRITICISM	28	1.9%	1	0.1%

In architectural theory, the use of metaphor as a way for an author to explain an architectural concept by knowingly comparing a source domain to an architectural target domain was only 20% (290 occurrence) of all metaphors present in the corpus, as can be seen in Table 20.

Although a minority overall, novel metaphors were more present in discussions of physical examples of architecture with 13.3% (193 occurrences) as compared to 6.7% (97 occurrences) when addressing more abstract topics in the discipline.

Table 20. Primary Sensori-motor versus cultural metaphor distribution

Target Frame	Conventionalized	Novel
ARCHITECTURE [PHYSICAL]	37.3%	13.3%
ARCHITECTURE [ABSTRACT]	42.7%	6.7%

The majority of metaphors present in the corpus, then, are highly conventionalized (80%) with discussions of architectural abstractions being strongly inclined in this direction. In general, both physical and abstract subdomains of architecture showed the same pattern in relation to the classification with a large difference in representation between conventionalized and novel metaphors. This is very different to the balanced distribution of metaphors between sensori-motor and cultural sources discussed above (Section 5.3.1). The vast majority of metaphors present in architectural theory, then, are not those that one might expect through how metaphor is discussed within architectural literature, nor how their presence and use are understood as an explanatory design aid. To achieve a better understanding of the composition of novel metaphors, the dominant patterns in source domains are listed in the next table.

Table 21. Common source domains for novel metaphors

Source Domain	Source Focus
ARTEFACTS	objects
HUMAN ACTIVITY	actions
ENVIRONMENTAL	landscape
ARTEFACTS	machines
ENVIRONMENTAL	organism

HUMAN BODY	body parts
HUMAN ACTIVITY	acting
ARTEFACTS	buildings and rooms
HUMAN ACTIVITY	social interaction
ARTEFACTS	clothing
MOTION	liquid

Metaphors used intentionally clearly focus on source domains organized around objects or social events. The most referenced source domain is ARTEFACTS and includes manufactured objects such as *jewellery*, *furniture*, and *curtains*. Other objects are also present including references to MACHINES (devices such as *cameras*, *bicycles* and *flashlights*) as well as CLOTHING. In addition to artefacts relating to the human body, there are also larger scale objects present in the metaphors of the corpus. These are the mapping between building typologies (HOUSE IS A THEATRE, HOUSE IS AN OFFICE, BUILDING IS RUIN, BUILDING IS A STAGE) and the trans-scalar mapping of cities to buildings (THE CITY IS A BUILDING) in what seems to be a violation of source-target mapping where both the source and the target are from the same domain of knowledge (see Chapter 8 for discussion).

The use of ARTEFACTS as a source in novel metaphors is joined by actions as part of HUMAN ACTIVITY. These actions are culturally constructed as opposed to innate abilities and are centred around three main concepts:

- expressions that mapped *dancing* to buildings and building elements (through FORM IS MOTION),
- the idea of buildings or ideas *changing* clothing and
- references to sex (*orgy*, *kissing*).

Another prominent, culturally constructed human action present is the concept of *acting*, naturally joined with associated concepts such as *theatres*, *stages*, *curtains* and *performances*. Other novel metaphors used parts of the LANDSCAPE to understand architectural form such as *archipelagos*, *islands*, *mountains*, and bodies of water (*oceans*, *seas*). Finally, there are some

limited references to MOTION as part of novel metaphors. These are based in mapping motion to physical objects using source concepts such as *waves*, *ripples*, *turbulence*, and *swells* as a way to describe architectural and urban form.

Conventionalized metaphors are unacknowledged by architects and focused on projecting ACTIONS, MOTION and SOCIAL RELATIONSHIPS into the environment. A summary of the source domains present in the corpus can be found in the next table, listed by quantity of occurrence.

Table 22. Common source domains for conventionalized metaphors

Source Domain	Source Focus
HUMAN ACTIVITY	actions
ENVIRONMENTAL	actions
HUMAN ACTIVITY	social interactions
ENVIRONMENTAL	spatial properties
MOTION	motion
MOTION	journey
ENVIRONMENTAL	physical attributes
MOTION	liquid
MOTION	body
ARTEFACTS	machines
HUMAN ACTIVITY	fabrication

Unlike novel metaphors, the top sources for conventionalized metaphors are based in sensorimotor and body actions. While body actions also show up as part of novel metaphors, the difference in quantity is significant – 369 conventionalized expressions compared to 30 novel expressions using this source domain. The specific concepts that are referenced is also different. As noted, novel expressions use culturally coded actions but conventionalized metaphors are dominated by references to image schematic and body schema actions such as *opening*, *lifting*, *giving*, *holding*, *gesturing*, *embracing*, *catching*, *standing*, *entering*, and so on. These actions are closely followed by actions experienced in the environment such as

fold, condense, flatten, shrink, stretch, splinter, pierce, and split. While some of these might be attributed to organisms such as tree (*splinter*), most are not much more than force dynamic schema.

The next most populous category of conventionalized metaphors in architecture come from SOCIAL INTERACTIONS, mostly based in the personification of ideas and objects as well as the ceding of agency to inanimate phenomena – gestalts also operating in the action metaphors. Social interactions, by their nature, are culturally constructed and address issues of seduction, power, control, authority, heroism, and social rank.

Besides actions and social interactions, another important source domain for conventionalized metaphors in architecture is MOTION. Conventionalized metaphors stress a general sense of spatial motion (*zips, moves, travels, descends*) as well as concepts of journey (*approach, strayed from the path, progress towards, return*). These are joined by movement of liquids (*flow, swell, ebb, overflow*) and the motion of the body (*staggers, running, leaping, steps*). Many of these metaphors are focused on the architect's interpretation of the built environment, projecting motion into inanimate situations the same way as actions. Other source domains in conventionalized metaphors reinforce this pattern including references to human activities such as emotional capacities, senses (sight), war, health. Besides these dynamic sources, there are also metaphorical sources are based in conventionalization of objects such as keys, devices and instruments as well as machines and the human body.

5.3.3 Resemblance and correlation

The final way of looking at the metaphors in the corpus is if they are based in experiential motivations of correlation or mappings between resemblances, with resemblance using either relational or attribute information. Considering target subdomains in the

ARCHITECTURE discipline, metaphors with correlational motivations are dominant across every area by a large percentage as shown in Table 23 below.

Table 23. Correlations and resemblance metaphor motivations

	Target Domain	Correlational		Relational (Resemblance)		Attributes (Resemblance)	
		No.	Percent	No.	Percent	No.	Percent
Physical	BUILDINGS	143	63.3%	34	15.1%	48	21.4%
	BUILDING (PARTS)	150	72.8%	18	8.7%	38	18.4%
	BUILT ENVIRO (URBAN SPACE)	80	59.7%	29	21.6%	25	18.7%
	BUILDING (SPACE)	62	66.0%	20	21.3%	12	12.8%
	BUILDING (EXPERIENCE)	12	80.0%	3	20.0%	0	-
	BUILDING (MATERIALS)	7	100.0%	0	-	0	-
	BUILT ENVIRO (OTHER)	37	72.6%	5	9.8%	9	17.6%
Abstract	ARCHITECTURE (CONCEPTUAL IDEA)	197	80.4%	24	9.8%	24	9.8%
	ARCHITECTURAL THEORY	160	81.2%	17	8.6%	20	10.2%
	DESIGN PROCESS	90	76.3 %	17	14.4%	11	9.3%
	ARCHITECTURE AS A DISCIPLINE	76	78.4%	10	10.3%	11	11.3%
	DISCIPLINARY TOOLS	24	80.0%	2	6.7%	4	13.3%
	CRITICISM	21	72.4%	1	3.4%	7	24.2%

The percentage distribution of metaphor motivation as listed in the table above is very revealing to the importance of those metaphors constructed through the correlation between two concepts (UP to GOOD, for example) rather than the creation of similarity through either relations (SPONGE to CLOUD – they both soak up water) or attributes (MARSHMALLOW to CLOUD – they both are white and fluffy). In all target domains, correlational metaphors make up the majority of the types of mappings present, regardless to whether the discussion was focused on physical manifestations of architecture or conceptual ideas being discussed by the discipline. Considering the use of metaphor as a design tool as discussed above (i.e. Coyne and Snodgrass 1992, 1995; Coyne et al 1994; Casakin 2007, 2011, 2015), this was surprising.

Most target domains contained more than 72% representation by correlational metaphors with the lowest being BUILDING (SPACES) (66%), BUILDINGS (63%) and URBAN SPACE (60%).

In contrast, occurrences between the two types of resemblance motivations were fairly evenly balanced in each of the ARCHITECTURE target domains. There were only a few exceptions to this pattern in the BUILDING (EXPERIENCE) and BUILDING (MATERIAL) target domains. When discussing the experience of buildings, only correlational and relational resemblance metaphors were present with 80% for correlational and 20% for relational. The focus on building material had only correlational metaphors involved in the metaphor construction. In the other target domains, relational and attributes alternated as begin slightly higher than each other but without a significant pattern of application.

Rather than looking at source domains separately as was done when reviewing sensori-motor/cultural and conventionalized/novel metaphor classification above, it is more revealing to compare the population of correlational and resemblance metaphors within a source domain based on evidence of the relatively low percentage of resemblance metaphors in the corpus (Table 24).

Table 24. Comparative population of correlational and resemblance metaphors

Source Domain		Correlational	Relational (Resemblance)	Attributes (Resemblance)
HUMAN ACTIVITY	actions	90.4%	5.4%	4.2%
HUMAN ACTIVITY	social interactions	86.0%	5.19%	8.9%
ENVIRONMENTAL	actions	93.3%	3.4%	3.3%
MOTION	motion	89.2%	2.7%	8.1%
ENVIRONMENTAL	spatial properties	95.7%	1.4%	2.9%
MOTION	journey	85.7%	10.0%	4.3%
MOTION	body	84.4%	13.3%	2.2%
ARTEFACTS	machines	48.4%	32.8%	18.8%
MOTION	liquids	72.1%	11.6%	16.3%
HUMAN ACTIVITY	fabrication	87.9%	6.1%	6.1%
HUMAN BODY	health	85.3%	14.7%	-

ENVIRONMENTAL	physical attributes	78.4%	2.7%	18.9%
HUMAN ACTIVITY	thinking processes	96.4%	-	3.6%
HUMAN BODY	emotions	86.7%	3.3%	10.0%
ARTEFACTS	objects	41.2%	24.7%	34.1%

As seen in the section above looking at overall distribution of source domains (c.f. Section 5.1.1, Table 6 and Section 5.1.2, Table 9), metaphors in the corpus are dominated by source domains that link actions, movements and social interactions to architectural spaces and ideas. The source domains are ACTIONS as part of human activity, ACTIONS as part of environmental knowledge, SOCIAL INTERACTIONS, SPATIAL PROPERTIES based on the point of view of the body and MOTION. These same categories are found when ranking a more detailed list of source domains, which is not surprising as it is presenting the same general information of total occurrences per source domain in the general domain of architecture. However, what is interesting is that the metaphors using these sources domains are mostly structured by correlational motivations (ranging between 72.1% and 95.7% of all metaphors in source domains) when compared to metaphors based in relational mappings.

The source domains with the highest concentration of correlational metaphors are THINKING PROCESSES (96.4%) and SPATIAL PROPERTIES (95.7%). THINKING PROCESSES are mappings of human mental capacities to things that are not human with metaphors driven by correlations as a personification. In contrast, the source SPATIAL PROPERTIES connects understandings of spatial location from the body and its interaction in the environmental to other concepts. The majority representation of correlational mappings in this source domain is to be expected as it holds all metaphors that address vertical elevation (MORE IS UP, GOOD IS UP), centrality (CENTRAL IS IMPORTANT, PROXIMITY IS EFFECT), spatial volume (DEEP IS SIGNIFICANT), and body orientation (FORWARD IS GOOD, IDEAS HAVE ORIENTATIONS) – metaphors shown to be based in experiential associations rather than similarities. The next

source domains with dominant correlational mappings are ACTIONS based in the environment (93.3%) and ACTIONS based on the human body (90.4%). The presence of correlational motivations in these categories are also expected as the metaphors operate through the projection of agency or personification into situations where it would be difficult to understand the mappings through a constructed resemblance. Other sources with strong correlational information are the projection of capacities of the human body such as emotions (86.7%) and health (86.3%) into inanimate phenomena through personification, ACTIONS of fabrication (87.9%), MOTION (89.2%), MOTION based in journeys (85.7%), MOTION based on the human body (84.4%), and MOTION based in liquids (72.1%). All of these source mappings have been shown to be highly relevant to discourse within architecture.

While both relational and attribute resemblance mappings are in the minority when compared to metaphors using correlational information in the most populated source domains in the architecture corpus, there are some variations to this pattern. Several of the source domains in the table above (Table 24) illustrate this variation with the ARTEFACT domains of OBJECTS and MACHINES, environmental concepts from the LANDSCAPE and references to the HUMAN BODY as an object standing out as significant. In these source domains, metaphor motivation is balanced between correlational and resemblance mapping or even favours relational or attribute content as the primary operator in the metaphorical construction.

Resemblance metaphors using attribute information are most strongly present in domains using either NATURAL OBJECTS (81.8% of all occurrences using this source domain), ARTIFICIAL OBJECTS (37.7%), the HUMAN BODY (63.8%), ENVIRONMENTAL FACTORS such as light or wind (44.4%), the artefact domain of CLOTHING (40.9%), the ORGANISMS of trees and plants (35.5%) and aspects of the LANDSCAPE (32.7%). Mappings that use attributes as the metaphorical mechanism produce the examples of image metaphors found in the corpus but they never achieve the prominence of the correlational version. There are clear patterns in the

source domains associated with these metaphors, however. All source material are physical objects with salient features based in surface or object characteristics. When NATURAL OBJECTS or LANDSCAPE attributes, for example, are mapped to ARCHITECTURAL IDEAS, BUILDINGS or CITIES, it is their shape characteristics and material properties that are directly associated with those target domains. As such, building enclosures that are curved, thin and monolithic are *shells*, ideas that can be conceived as having physical layers of associations are *onions*, undulating ground planes are *waves*, and clear formal differences between object and field (figure/ground) evoke the characteristics of *islands*. The ORGANISMS domain is used to access attributes about animals with references in the corpus to *elephant skin* for a wall surface that is coarse and grey, *butterfly wings* for large roof planes, and a building as evoking the shape of a lion it *hunkers down*. These shapes and physical attributes are used in order to explain the characteristics of massing, surfaces and forms, whether the form is perceived (physical) or conceived (abstract).

In contrast to attribute mappings, resemblance metaphors using relational information stress similarity through operative or functional relationships between domains. One of the source domains with the largest representation of relational resemblance metaphors is based on the function of the INTERNAL ORGANS of the human body, such as the *heart*, *lungs*, *blood circulation* and *stomach* (70% of all instance this source domain are relational metaphors). When something, such as a piazza, is considered to be “the very heart of the scheme” (Buchanan 2012: 12), it does not mean that the urban square was shaped like a heart. Rather, the piazza is conceived to act in similarity to the functional aspects of its source – the piazza was as important to the survival of the urban plan as a heart is for the human body. Of course, this also infers that the urban plan is considered as a body and that the city streets are mapped to a circulatory system. The human body is an aspect of several source domains using relational information in architectural theory such as the internal functions listed above,

health and sickness as well as internal structure such as *spines* and *backbones*. External body parts are present in relational metaphors with the most common references being arms (*limb*), torsos (*body*), *faces* and *skin*.

Besides the biological body references, there are many cultural references found in relational resemblance metaphors. The most populous references are found using the source domains MACHINES and environmental objects from the LANDSCAPE with references to *islands* and the *ocean*. Islands were noted to be used in attribute metaphors as well but when using relational information, the stress is not on the physical characteristics but rather on a sense of isolation and separation as a functional comparison. Information about machines is used in the same way – as an expression of the relationship between parts and operational factors. Architects seem to understand buildings as objects that operate as a member of the general class of machine but also as particular types of devices like *cameras*, *bicycle pedals*, *engines*, and *speakers*. Each of these are employed for particular rhetorical purpose and are used to address a particular characteristic of the physical experience of space.

Other source domains that are present when relational content is employed are ACTING AND THEATRE (66.7%) and CLOTHES AND FASHION (27.3%). The former maps aspects of performance and attention via the stage and the presentation of a series of events for the purpose of being viewed. In this, the concept of audience is implicit. The source domain CLOTHES AND FASHION can be considered as another version of understanding buildings as being human bodies with skin which then are clothed. However, clothes, along with their fashionability, becomes about the public presentation of objects which stresses their social engagement rather than the more biological focus when skin is used to refer to the outer surface of something, as will be discussed in Chapter 6.

One of the more interesting relational metaphors uses the source domain from one building or room type to map functional aspects to another building or room type. While

there seems to be a violation of metaphor theory as the mapping could be considered to be within a single domain (BUILDINGS, BUILDING ROOMS or BUILDING SPACES), these are clearly metaphors and understood as such by the architectural discourse community. This issue was noted under the discussion of conventionalized and novel classification (c.f. Section 5.3.2) but it is important to understand that it is the relational content between the source and target that is activating the metaphor rather than attributes or some experiential correlational relationship. When a HOUSE IS A THEATRE, HOUSE IS AN OFFICE, BUILDING IS RUIN, or BUILDING IS A STAGE, the type of information that is mapped between domains is mostly how the building spaces operate, although there are a couple of occurrences of appearances (attributes) also included in this group.

The type of content used in the construction of metaphors seems important as a way to understand the structural relationship between metaphor and discourse. Examining correlations and the two types of resemblances, it is clear that certain source domains are more dominant in one type of mapping where other source domains are more balanced between all three types of classification. Some key factors seem to be how actions and capacities are used through personification and agency in contrast to the use of similarity construction using either attribute or relational content.

5.4 Summary

The data from the corpus shows the majority of the identified metaphors are not used knowingly to create a relationship between architectural content and some other domain of knowledge as a way of explaining design intentions or organizing principles for building form. Rather, most identified metaphors are highly conventionalized (80%) and had an experiential motivation based on correlational mappings (73.1%) while being balanced between sensori-motor and cultural sources. Both types of resemblance motivations were also

present but were in a minority overall (14.4% for attributes and 12.4% for relational information). This was consistent for both the discussion of physical space as well as more abstract considerations of architectural ideas.

The corpus data does reveal a relationship between aspects of the classification systems as all correlational metaphors except for two unique examples where also conventionalized. This would be expected if these metaphors are “elements of universal human experience – basic sensori-motor, emotional and cognitive experiences which do not depend on the particulars of culture” (Grady 2007b: 321) – i.e. these metaphors have not been conventionalized through use and social construction. In contrast, metaphors used knowingly should have the purpose to create similarity through association of source and target in order to assist comprehension and, thus, they should be based in resemblance (Grady 2007b). Out of the 133 occurrences of metaphors used knowingly to address architectural space or architectural ideas, only two were found to be both knowingly constructed *and* correlation-based, suggesting a rarity to this form in this genre of discourse. These are:

- (80) It is fundamentally a ‘*space-eating*’ project; it sets, out to image the consumption of space by a substance that is not quite solid, not quite liquid. (Vidler 2000: 237)
- (81) Architects have tried to engage with this new borderless space, the ‘*space of flows*’, by dissolving the envelope as an obstacle to flow and spatial continuity (Zaera Polo 2008: 78)

In both examples, the metaphor is identified by the author through the use of quotation marks, showing the conscious use of the metaphor mapping and have correlational motivations. The first example (80) is constructed from mapping architectural form to an organism which can ‘feed’ on space using IDEAS ARE ORGANISMS, OBJECTS ARE ORGANISMS, SPACE IS A SOLID and THE NECESSARY MATERIAL FOR A PROCESS IS FOOD while (81) engages

CONTAINER, BOUNDARY, and FORCE DYNAMIC schemas in a mapping based on SPACE IS A LIQUID.

Besides the type of information mapped between domains, there is also differences between when architecture was discussed as a physical experience rather than as an abstract condition, mostly through how the source domains for MOTION and SIGHT are applied. When discussing aspects of architecture which are physical or exists in the environment, motion has a tendency to be applied through the conceptual metaphor FORM IS MOTION such as the examples:

- (82) Successive washings of the screen wall's aggregate gauge our ascent even as the wall *staggers* away (Cadwell 2007: 33)

The shape and relative relationship to the circulation in the building produces an interpretation of a wall that is in motion. The motion is projected not simply through a shape to movement mapping but as a personification with a mode of motion verb that activates the human body ("staggers"). Motion based on human bodies as well as those referring to liquids (*flow, swirl*) are in the majority in these expressions. When considering more abstract discussions, the more common source domain for motion is the concept of JOURNEY.

Accordingly, we find passages such as:

- (83) Having *strayed from a long and venerable course*, the efforts of the Moderns to *be of or ahead* of their time (Benedikt 1987: 64)

The target domains based in architectural abstractions stress architecture as a process and a discipline, as well as considering physical examples of projects as a series of moments within a career. This activates LIFE IS A JOURNEY as a way to conceptualize a theoretical position within architecture that is located in space (SITUATIONS ARE LOCATIONS). Following along with how abstractions are conceptualized and concretized as physical experiences, there is also a larger quantity of sight based references in the more conceptual examples (THINKING IS SEEING,

KNOWING IS SEEING) and a stress on conflict (ARGUMENT IS CONFLICT, DIFFERENT IDEAS ARE ENTITIES IN CONFLICT, GAINING KNOWLEDGE IS A CONFLICT). These are in general alignment with the handling of more abstract knowledge.

The more complex gestalts of agency and personification are present throughout the metaphorical expressions. They are activated through the primary metaphors EVENTS ARE ACTIONS, INANIMATE PHENOMENA HAVE HUMAN BODIES and INANIMATE PHENOMENA ARE ORGANISMS. The major concepts involve either the actions of one idea onto another (*coupling, penetrate, shatters, suspension, overwhelm, growth, spread*), physical representations of abstract influence (*intruder, backbone, muscles*), or body actions (*breathing, kissing*). A metaphor associated with EVENTS ARE ACTIONS is EVENTS ARE MOTIONS which supports the metaphors that give directionality to time-based events, concepts of progress and values of motion being positive. Motion and directionality are both involved in other conceptual metaphors as well associating the more complex JOURNEY schema (SOURCE-PATH-GOAL) with the primary metaphors of THINKING IS MOTION and SIMILARITY IS DIRECTIONALITY. Some of these metaphors are also involved with SPATIAL LOCATION and DIRECTIONALITY (*looking backwards, reorientate gaze forward, look to the future*).

Within the architectural discipline there is often a very clear divide created by what is considered practice (physical architecture) and what is considered theory (conceptual architecture). However, the evidence of source domains of metaphors identified in the corpus suggests that this separation is mostly artificial. The top four source domains in both architectural target subdomains are ACTIONS as expressed through the human body (physical: 136 instances, abstract: 134 instances), ACTIONS as experienced in the world (physical: 93 instance, abstract: 82 instance), SOCIAL INTERACTIONS based in interpersonal human relationships (physical: 105 instance, abstract: 51 instance) and MOTION (physical: 61

instance, abstract: 65 instance). These source domains are balanced in expressions between both subdomains, with the exception of SOCIAL INTERACTIONS, and suggest that the mapping of content from these source domains to architectural target domains is one of the critical ways that architecture is discussed by architects. This is irrespective to whether the discussion is about abstract concepts pertaining to architectural ideas, about the physical experience of a building, about the what part of a building relate to each other, about the future design of built form or about architecture as a discipline. When considering this observation with the fact that the majority of metaphors in the architectural corpus are highly conventionalized and based in correlational knowledge, the suggestion is that metaphor is being used in the corpus in a very different way to how it is traditionally understood in architecture. Rather than being used as analogies to explain shape or formal organization ideas, metaphors are present as a way to interpret and design the environment through the projection of sensori-motor and cultural constructed meaning from the body out into our surroundings.

6. ARCHITECTURE AND ANTHROPOMORPHIC METAPHORS

Metaphors using source domains based in human capacities, knowledge of the human body and modes of human movement are clearly important to understand how architects engage the knowledge of their discipline. The quantitative occurrence of metaphors in the architectural theory corpus shows that the source domains of ACTIONS, INTERACTIONS, MOTION, and HUMAN BODY AS OBJECT are strongly present in the data. These source domains are present regardless to the target being physically located in space or referring to abstract concepts, with both supported by the gestalt concepts of agency and personification.

This chapter looks at the relationship found in metaphors between concepts based in being human mapped to architectural ideas, phenomena and objects. The first part of this chapter will address normalized professional terminology that uses the human body as a way to understand buildings, including how the body is extended into more complicated situations. The next section considers the projection of action into the environment and the difference between human agency and general causation. The final part of this chapter uses examples from the corpus to separate application of personification from projections of human agency. While both personification and human agency map human characteristics onto something nonhuman, human agency is part of the application of causation which requires human capacities. It is possible for personification to be present without any reference to agency, suggesting that while the two concepts are related, they are separate

gestalts. The attempt in the latter section of this chapter is to explore how the two related concepts are used in the architectural discipline and to what aspects of the discipline are they applied.

While the three topics of human body, agency and personification are addressed separately, there is a strong relationship between them. The metaphors present in the architectural corpus indicate that an underlying theme in the data is the projection of what it means to be human into the environment as a way to interact with that environment. The theme is based on the megametaphors OBJECTS/BUILDINGS ARE PEOPLE and ARCHITECTURAL (BOUNDED) ABSTRACTIONS ARE PEOPLE that are shared through all the articles in the corpus. As such, this chapter will examine the notion of projecting human capacities in more detail, addressing nuances in discourse purpose and situatedness as occurring in the corpus.

6.1 The human body and architecture

The mapping between the human body and buildings is a metaphor found in historical texts of architecture as well as current discussions (see Chapter 2.3). The body terms used in these metaphors have been normalized and become polysemic, causing no incongruence to the reader, speaker or listener. The metaphors using the human body can be coherently organized under the megametaphor OBJECTS/BUILDINGS ARE (HUMAN) BODIES which, in turn, is associated with OBJECTS/BUILDINGS ARE PEOPLE. The underlying correlation between objects in the environment and humans supports the systematic coherence of several conceptual metaphors as well as the extension of basic mappings into associated concepts (Table 25). Metaphors referencing the human body are common when discussing the physical understanding of architecture (i.e. as building) but the corpus also has examples of the same metaphorical source concepts used in abstract discussions. For example, *spines* and *backbones* are used to describe a physical space which is linear and functions as an

organizing element mainly through circulation. When the same source concepts are applied to abstract targets, they use the same underlying meaning of an idea that gives structure and is built upon by other ideas.

Table 25. Variations and extensions of the human body as metaphorical source

Megametaphor	Primary metaphor	Conceptual metaphor	Subtopic
BUILDINGS ARE (HUMAN) BODIES		ENCLOSURE IS SKIN	SKIN
	VISIBILITY IS ATTENTION	ENCLOSURE IS SKIN	IDENTITY
		ENCLOSURE IS CLOTHING	CLOTHES
	VISIBILITY IS ATTENTION	ENCLOSURE IS CLOTHING	FASHION
		FRONT IS FACE	FACE
	IMPORTANT IS CENTRAL	CORE IS TORSO	BODY
		EXTENSIONS ARE ARMS	ARM (LIMB)
	IMPORTANT IS CENTRAL	BUILDINGS HAVE ORGANS	HEART
	(LOGICAL) ORGANIZATION IS PHYSICAL STRUCTURE	STRUCTURE IS SKELETON	SPINE
		STRUCTURE IS SKELETON	RIBS

Not all aspects of the human body are used as part of metaphors even though the body is an important source reference for understanding parts of our world and experience. The most common metaphorical source terms and concepts are *skin*, *face*, *heart*, *spine (backbone)*, *ribs* and *arms* (c.f. Chapter 5.1). References to objects that are directly related to the body, such as CLOTHING, can also be considered under the organizing megametaphor of BUILDINGS ARE PEOPLE or BUILDINGS ARE HUMAN BODIES. Metaphors using these source domains are based in resemblance, mapping either salient relational or attribute information through the creation of similarity. Common references use relational information - *arms* are physical extensions of a main building, the *body* of a building is the central massing of that structure, and a *face* is a reference to the front of an object. Less common in architecture is attribute or shape references using the human body. One that does occur is *ribs*, a concept used to refer to visible and repeated structural elements which usually involve a curved form.

Resemblance metaphors under BUILDINGS ARE PEOPLE can be reduced to reveal the presence of correlational information in primary metaphors. These are important to understand the situated meaning of the use of the resemblance metaphor. References to hearts infers a mapping of a central element as part of the topography of a body but also activates CENTRAL IS IMPORTANT. In some expressions, references to hearts might also include INTERNAL IS ESSENTIAL, depending on the discourse purpose. Likewise, references to *faces* or parts of the body that are considered part of the expression of identity (i.e. *skin*), the conceptual metaphor is supported by the primary metaphor VISIBILITY IS ATTENTION as well as SURFACE IS IDENTITY.

The relationship between the megametaphor, conceptual metaphors and primary metaphor can be understood better by examining one aspect of the BUILDINGS ARE PEOPLE mapping. The most common body references will be explored in the section below.

6.1.1 Building enclosure as skin or clothing

The most common mapping between the human body and architecture is *skin* as a term used to understand the outer surface of an enclosure (physical) or container (conceptual). In this regard, historical use of metaphor as part of architectural terminology, such as Alberti's reference to *bones*, *muscles*, and *skin* to refer to structure and cladding in *De re aedificatoria* (1486/1755), is consistent with terms found in a corpus dedicated to late 20th and early 21st century architectural theory. The mapping of *skin* uses relational information as the outer surface of a building and operates through a similarity created between the outer surface of a human body and the outer surface of a building. Skin, as a normalized term in architecture, does not include any operational complexity such as mappings between pores, temperature and pressure sensing, nor notions of elasticity. The conventionalized use of the metaphor ENCLOSURE IS SKIN can be found in example below:

(84) The *skin* is defined in places by concrete, and in places by glass (Allen 2000: 1)

In (84), the mapping between SKIN and BUILDING ENCLOSURE uses knowledge of the skin as a thin outer layer acting as an interface coherence with the image schema CONTAINER or as boundary between interior complexity and the exterior environment. The inherent understanding that BUILDINGS ARE (HUMAN) BODIES as internal systematicity suggests that *skin* is part of a coherent system that also links the building to *organs, limbs, faces* and *backbones*. The larger mapping relates buildings to being human and having a human body as the outer surface does not generally have *fur, scales* or *chitin* in the normalized version. While (84) is an example of the basic use of the conceptual metaphor, other concepts can be involved in the mapping. The next example (85) uses the same conceptual metaphor of ENCLOSURE IS SKIN but the context involves more complex social engagement.

(85) we witnessed during the 1990s an attempt to use the *skin* of the residential building to represent diversity and multiculturalism (Zaera Polo 2008: 93)

In this example, the metaphor involves the outer surface of the buildings (i.e. *skin*) as presenting socio-cultural information rather than simply as the physical outer surface of a container but still aligned with the normalized understanding of BUILDINGS ARE (HUMAN) BODIES. The skin represents a set of values and beliefs as part of cultural expression and does this because it is the surface visible to the public gaze. The visible surface maintains social interactions and is connected to primary metaphors such as VISIBILITY IS ATTENTION and PERCEPTIBLE IS OUT but also, and more importantly, SURFACE IS IDENTITY. In (85), skin is a vehicle for a much more complex social situation than the previous example while using the same conceptual metaphor ENCLOSURE IS SKIN. The two uses for the same conceptual metaphor can be divided into:

- 1) sensori-motor mappings that consider skin as a terminal layer between a body and

the environment, and

- 2) cultural interpretation which considers skin as the representational surface that manages social interactions and expressions of identity.

Skin is so culturally integrated into architectural expressions that it causes no dissonance to use the term as part of a novel metaphorical expression focused on architectural abstractions. When Koolhaas writes about the theoretical nature of “junkspace”, a non-situated concept⁷, he used the notion of skin to define its boundaries.

(86) Junkspace is sealed, held together not by structure but by *skin, like a bubble*. (Koolhaas 2002: 176)

In this example, “skin” is being used as the outer surface of an enclosure. The expression includes a second metaphor in a simile form, SKIN IS (LIKE) A BUBBLE. The second metaphor uses the normalized metaphor of ENCLOSURE IS SKIN to introduce a non-conventionalized meaning into the sentence. The mapping between ENCLOSURE and BUBBLE introduces new qualitative information that modifies the *skin* reference in a way that is important for the discourse purpose of the author. The discourse context of (86) requires the enclosure to also transfer the notion of “sealed”, which required an elaboration on skin as the term does not inherently contain that aspect as fundamental domain knowledge. As such, the term “bubble” transfers concepts of surface tension, uniformity of form, and hermetically sealed vessels. This is part of the systematicity of the source where aspects of the bubble source domain are selected because they have relevance to the mapping of skin as an exterior volume, which in turn reinforces the idea of the terminate surface of a building. Even though SKIN is a source

⁷ Junkspace was a term coined by the architect Rem Koolhaas (2002) to refer to vast areas of generic, commercialized building space generated by capitalist economic structures and infers the loss of meaning of architectural form. The term is never clearly defined but suggests a tendency in built environment production that affects the architectural discipline through issues of placelessness.

domain for BUILDING ENCLOSURE, it is being used as a target domain for BUBBLE, reinforcing the conventionalization and normalization of body mappings in architecture regardless to whether the focus is physical or abstract.

The outer enclosure of the building can be considered as clothing at the same time it is normalized as skin because cognition through domain association allows for multiple inferences without invalidation. The mapping of ENCLOSURE IS SKIN and ENCLOSURE IS CLOTHING co-exist in the same way that MORE IS UP does not contradict GOOD IS UP in discussions of cultural coherence (Lakoff and Johnson 1980: 23). While UP can be both MORE and GOOD, the building surface can be both SKIN and CLOTHING depending on context. One of the differences between skin and clothing is how knowledge of them is acquired and how they are classified. Skin is a biological term which is highly embodied as part of human body schema while clothing is a cultural reference that infers social content such as fashion, social norms (nudity), identity and social standing.

In the corpus, metaphoric expressions portraying building surfaces as clothing differ from those of skin. While both refer to the terminal surface between an object/organism and the environment, skin is understood as integral to the human body while clothes are an additional element to be overlaid on that body. As seen in the examples above, metaphors mapping skin to buildings and abstractions consider that outer layer as an integral surface. As a metaphor in architecture, the source domain of CLOTHING is used when the enclosure of the building and the rest of the building to be considered as conceptually separate from each other. This use can be exemplified by the following passage:

(87) The '*clothes*' have become so removed from the *body* that they require structural support independent of it. (Colomina 1992: 93)

In this example above, there are two metaphorical expressions. The first refers to the metaphor ENCLOSURE IS CLOTHING (“‘*clothes*’ have become so removed”) and the second

uses CORE IS TORSO (“from the *body* [of the building]”). Both metaphors are coherent with the underlying megametaphor BUILDINGS ARE HUMAN BODIES. The source domain is CLOTHING because the purpose of the sentence is a conceptual separation between the enclosure of the building and what is considered the essence of the building (often equated to structure and enclosed program). Referring to the enclosure as skin would not easily allow for understanding the enclosure and building as separate and independent elements since skin is understood as integral to the body. The source domain of CLOTHING replaces the source domain of SKIN when the author wishes to stress a conceptual isolation between the outer surface of the building and the idea of the building itself. As such, a building can be considered finished and functional in terms of its physical construction yet “undressed” (Cadwell 2007: 23) or even “nude” (Lavin 2011: 72). Clothes are thus a modification on the conceptualization of building ENCLOSURE IS SKIN, coherent with understanding it as a terminal layer between a body and the environment.

As noted above, skin is used in a second way as well – as a representational surface that manages social interactions and expressions of identity. When ENCLOSURE IS CLOTHING replaces ENCLOSURE IS SKIN as a metaphor for the outer surface of an object, the purpose of the metaphor shifts from conceptual separation of object and surface to the role of clothing in socio-cultural systems, especially as part of a system of fashion. In the next example, the Disney Concert Hall⁸ is considered as a body with clothing rather than simply a body.

(88) The Concert Hall project is *fashionably dressed* up to designate a

⁸ The Disney Concert Hall is located in Los Angeles and was designed by Frank Gehry. The project was completed in 2003 and is an example of Gehry’s signature design style with metal panels on extensive steel armature constructed over the boxes which make the inhabited building spaces. The design style evolved from Gehry’s attempts to capture motion in a non-moving form, influenced as a youth by the motion of a fish in a bathtub, as the legend goes.

volumetric mass that denies any coherent and hierarchical order
(Hartoonian 2006: 123)

The concert hall in the passage above expresses a clear separation between the façade and the building. The architect is known for curving building enclosures that are physically and conceptually isolated from the environmental and programmatic aspects of the project (i.e. the core of the building). However, the metaphor ENCLOSURE IS CLOTHING activates cultural values of being fashionable which requires social structures that pertain to status, rank, and timeliness. The discourse context of the expression discusses how the building is viewed from the surrounding streets, stressing its elegance and appropriateness to the urban context. The enclosure operates as a surface that projects cultural identity as part of human social interpretation. This use of clothing is coherent with the second way that ENCLOSURE IS SKIN is interpreted – as the visible surface that engages in relationships with other people. The difference between metaphors based on skin and clothing is that clothing can be changed, used to mask identity or be a disguise because the object and its surface are considered as non-integrated.

6.1.2 Extending body metaphors through external systematicity

The megametaphor BUILDINGS ARE (HUMAN) BODIES is a conceptual metaphor which can be decomposed into more primary instances. A building is considered by an architect to be a type of object in our environment but also an association of conceptual ideas which form the building – a bounded abstraction. The metaphor BUILDINGS ARE (HUMAN) BODIES can thus be decomposed into the primary metaphors INANIMATE PHENOMENA ARE HUMAN BODIES, and (BOUNDED) ABSTRACTIONS ARE HUMAN BODIES. These three metaphors are also a chain, where bounded abstracts are mapped to objects, phenomena and organisms in order to be engaged as part of a conceptual process. The sequence expands as follows:

- (BOUNDED) ABSTRACTIONS ARE INANIMATE PHENOMENA
- INANIMATE PHENOMENA ARE ORGANISMS
- INANIMATE PHENOMENA ARE/HAVE HUMAN BODIES
 - [objects are a type of inanimate phenomena]
 - [buildings are a type of object]
- BUILDINGS ARE (HUMAN) BODIES or BUILDINGS HAVE (HUMAN) BODIES

As an underlying source domain for discussions of architectural concepts, the mapping to the human body allows for more innovative expressions which are still coherent through external systematicity (c.f. Chapter 3.2). In these examples, the metaphor is BUILDINGS ARE (HUMAN) BODIES rather than BUILDINGS HAVE (HUMAN) BODIES. The former metaphor considers the body as a physical object that maps elements such as *skin, face, arms, torso, hearts* and so on to the target domain. The latter expression involves considering ideas and objects as using the body in situations that extend human capacities to non-human, non-animate and non-physical constructs. This will be discussed in Sections 6.2 and 6.3 below.

Once a building is understood as being a human body, the metaphor can be extended into many different expressions. The extension of metaphorical mappings in architectural discourse can be illustrated using the above discussion of skin as a metaphor for both enclosure and social engagement. The conventionalization and normalization of a metaphor allows for the possibility of elaborating on the basic metaphor to create richer and more subtle inferences. For example, once the surface of an object (or objectified abstraction) is normalized as skin, that surface can then be acted upon or modified in the same way as skin with the assumption that the underlying mapping is simply accepted. This includes ornamentation such as piercings and tattoos, physical disfigurement such as when the discipline of architecture “has gained a scar” (Lavin 2011: 75) or when the conceptualization of urban and natural ecologies “are sutured together,” (Lerup 2001: 52). Biological and physical actions can also extend from the understanding of ENCLOSURE AS SKIN. One author

states it through considering the air above a city as being “like our skin, an immense enveloping organ, to be constantly attended to, chilled, channeled, and cleaned” (Larup 2001: 58). Other actions present in the corpus make actions using skin including *flaying*, *piecing*, *cutting*, *slicing* and *exfoliation*. The next examples expand on these points.

The ENCLOSURE IS SKIN metaphor can be extended into novel expressions using non-normalized concepts while still being coherent with the BUILDINGS ARE (HUMAN) BODIES metaphor. In the example below, the skin is considered to be marked through the cultural practice of tattooing, what seems to be a metaphor using similarity based on image.

(89) It is a *tattooed surface* which does not refer to the interior, it neither conceals nor reveals it (Colomina 1992: 98)

The “tattooed surface” in the example above refers to a physical interpretation of a building enclosure, a façade of alternating black and white horizontal stripes with very few windows⁹. While the outer surface of a building is normalized as skin in architecture, this expression maps the human cultural artefact of tattooing ink into flesh to create images to that surface. Tattoos are used as part of social identity in human societies and change the role of human skin from biological enclosure to a surface on which other actions occur. In the passage above, the stress on the surface of the enclosure changes the relationship between the enclosure of the building and the spaces it contains. While the expression is novel, it builds on the underlying conceptual metaphor of ENCLOSURE IS SKIN and the megametaphor is BUILDINGS ARE (HUMAN) BODIES to consider a building enclosure as being tattooed, yet there is no direct reference to either of these concepts.

⁹ This passage refers to the proposed 1927 design for a house for the American entertainer Josephine Baker by Adolf Loos.

The tattoo metaphor is being used to bring attention to the outer surface of the building but not as a way to explain an image or shape. When skin is tattooed, it fulfils a double role on the human body – it is the surface that mediates with the environment but it is also a drawing surface that changes the hierarchy and content of that interaction. Rather than being the sensory surface of an organism, a tattooed surface uses the metaphor SKIN IS CANVAS to turn the body into a background for artwork or graphics. As a canvas, the skin's primary role is not to contain the complexity of the body as a termination of a container but to mask the presence and operation of the body through focusing attention solely on the surface. In this example, the building enclosure is being claimed to work in the same way through the metaphor. The architectural critic is using the metaphor to suggest that this particular enclosure exists in and for itself rather than its traditional role of protection from the elements, creation of privacy and allowing views from inside to outside and vice versa. As such, the novel metaphor in the expression both uses and modifies the underlying conventional metaphors. Thus, the inference of the passage is that the building is all skin and no body since while the house has a *physical* interior, it does not have a *conceptual* interior. This is obviously not literal as the house has rooms, a roof, doors and windows but the conceptual understanding of space is overlying and overpowering the physical experience of space.

Metaphors building in novel ways on SKIN IS ENCLOSURE are more conceptually focused, addressing abstract concepts that are theoretically subtle and use deep disciplinary knowledge. While the tattooed surface in (89) could be understood as a basic attribute mapping creating an image metaphor, the purpose of the metaphor is to consider the conceptual understanding of the building rather than its physical presence. The next example also uses ENCLOSURE IS SKIN as part of BUILDINGS ARE (HUMAN) BODIES.

(90) This *flayed* modulation of interior and exterior produces the effect of

loose and sometimes surprising correlations between program and space or room. (Somol 1999: 69)

In this example, ENCLOSURE IS SKIN is being used not as an object but as the basis of an action performed on the surface. The action is *flaying*, referring to the stripping away the outer layer of skin to expose the flesh below. As a physical action mapped to a building, one might expect to find the metaphor present to describe how layers of a building façade is removed to allow views of interior space. In the passage above, the “*flayed* modulation” is not directly addressing physical aspects of the building but instead brings attention to the conceptual relationship between building typology, conceptual occupation through the use of spaces (program), and the physical space of the building. These are complex ideas that are understood implicitly by members of the architecture discipline. In the passage, the metaphorical expression “flayed” is used to address the reversal of the traditional understanding of inside and outside as well as public and private as a critical aspect of the design proposal for the building under discussion (a community centre¹⁰). The resulting physical building is conceived to deny the traditional edge/centre hierarchy (public is edge, private is centre) and presents the building as a body without skin . . . or more exactly, a building with skin on the inside and exposed flesh on the outside. There are, however, no physical clues to this interpretation in the building enclosure. In the extension of ENCLOSURE IS SKIN and BUILDINGS ARE (HUMAN) BODIES, skin is being equated to publicness and flesh (interior tissue) to privateness. The mapping includes correlational mapping of visible aspects of the environment as public elements, supported by the second normalized interpretation of skin as a social element. In this case, the ability to understand skin as a public expression is

¹⁰ The project is the Intracenter, a mixed-use community center for Lexington, Kentucky design by Ron Witte and Sarah Whiting of WW Architecture.

possible through the metaphors VISIBILITY IS ATTENTION and VISIBLE IS ACCESSIBLE. To consider flayed to be simply a condition of peeling back outer layers of the wall would be to completely misinterpret the expression since no physical comparison is possible.

The next example does not involve a physical object such as a building but is still uses the metaphor ENCLOSURE IS SKIN. In the same way as shown in the last example, architects consistently map their conceptual understanding of disciplinary knowledge into physical situations. The human body is often a basis of these mappings.

(91) Was the *exfoliation* of the private/public threshold to the inside of the unit a politically advanced decision, (Zaera Polo 2008: 94)

In the passage above, “exfoliation” is applied to the abstract idea of “the private/public threshold” rather than the outer surface of a building. In architecture, a threshold satisfies the basic condition of a space that is experienced between two dominant spaces. A threshold might be very small or deep but it must play a subservient role in the interpretation of that spatial context as a clearly *different type* of space that negotiates the relationship between the dominant spatial containers. This means that in order for a threshold to exist, the adjacent spaces need to have clearly defined identities yet relate to each other in such a way that there is no clear demarcation of where one stops and the other starts (i.e. the termination of the container is ambiguous). At the same time, there needs to be a space that can be considered not part of one or the other that exists between them which is the threshold. As examples, the space of a doorframe, a windowsill or a porch are thresholds – not the frame itself or the door/window but *the space* which is defined by the depth of the sill or porch that might be considered not inside or outside but a transition between the two. A more complex example of threshold is found in (91) where the space between the conceptual ideas of public and private is considered a threshold. For this to be possible, the qualities of publicness and privateness need to be understood as physical analogues through the metaphor (BOUNDED)

ABSTRACTIONS ARE CONTAINERS, a corollary of (BOUNDED) ABSTRACTIONS ARE OBJECTS. The surface of the container is then considered to be skin through understanding the surface of a container as an enclosure and ENCLOSURE IS SKIN. The final association is conceiving of the skin as a type of threshold rather than just a surface between outside and inside.

The space of the threshold in the passage above is mapped to the conceptual relationship between the abstract ideas of publicness and privateness. In this example, the normative public-to-private relationship expected by architectural and urban designers is the domestic residence (private) in relation to the urban context (public). However, the author is discussing a second, more innovative public-to-private relationship which is found within the domestic residence through the use of screened rooms¹¹. The normative understanding of urban public-to-private relationships is considered to be transferred to explain the non-normative understanding of domestic residence public-to-private relationships. Exfoliation then refers to the action of transferring an urban idea to an architectural situation even though they exist at very different scales. As a conceptual and experiential idea, the flaking of part of the conceptual urban environment to embed itself within the domestic interior affects the physical organization of the building with the urban concept used to understand the new architectural composition through similarity. The metaphor is needed because the way that space is being conceived is non-normative and does not match a standardized typological pattern. The importance of the public-to-private relationship is not immediately

¹¹ The context is the design for a housing typology by the Portuguese architect Alvaro Siza. The multifamily residential design was in the Netherlands for the Muslim community. The first layer of privacy was the screening of the residence from the public street while the second layer of privacy was an interior screening of female inhabitants from male guests to the home.

understandable through the form of the building and the metaphor brings both attention and focus to this abstract content.

The application of actions to the object of the human body can be seen to be structurally and conceptually more complex than expressions than using the body as an object, like *spine*, *heart* or *face*. The other aspect to note about the examples above is that although the immediate subject is a physical building, the acts of tattooing, flaying and exfoliation place the focus not on the building itself. These actions are not interpretations of the environment through spatial motion or force dynamic image schema found in FORM IS MOTION. Rather, they are applied to the conceptual act of design that formed the physical building and cannot be interpreted from the immediate physical context without knowledge of the architectural intentions. The other point to consider is that while many of the expressions exploring the use of skin to architectural discourse in examples (84) – (91) are based in resemblance, the more complex content such as social identity and deep disciplinary abstract concepts operate through building resemblance metaphors on top of underlying correlational metaphors. This creates a complex structure that spans embodied concepts and disciplinary conceptual constructions (i.e. how architects understand space, occupation and use) while implicitly maintaining, or building upon, the conceptual metaphors BUILDING IS A (HUMAN) BODY and ENCLOSURE IS SKIN.

6.2 Architecture, agency and human actions

The section above presented examples of buildings and abstract ideas involved in buildings being mapped to aspects of the human body. It concluded with the introduction of novel actions built from the conventionalized mapping of understanding ENCLOSURE AS SKIN. Metaphors using action are numerous in the corpus as presented through the quantitative distribution of metaphors and source domains in Chapter 5. The role of the body in

architectural metaphors does not end with just resemblance mapping of physical characteristics between source domains and buildings but also extends into actions. As discussed above, BUILDINGS HAVE (HUMAN) BODIES is related to a set of metaphors different to BUILDINGS ARE (HUMAN) BODIES. This is combined with the fact that discussions about buildings contain highly abstract concepts making it difficult to strictly separate discussion of physical space from conceptual ideas.

The introduction of action is a key factor that separates BUILDINGS HAVE (HUMAN) BODIES from BUILDINGS ARE (HUMAN) BODIES with the former present when a building acts on its surroundings rather than being interpreted as a passive object. It is better to understand the target domain BUILDING to include both the physical object of building and the more complex (BOUNDED) ARCHITECTURAL ABSTRACTIONS associated with the built environment. As such, it is both objects (buildings) and abstract ideas in architectural discourse that are conceived as being entities with human capacities. This includes the presence of bodies, the actions made by those bodies (human agency) and situations that are possible by being human that include social situations and emotional events (personification).

Research into human development postulates that conceptual growth develops from the image schematic concepts of “animacy, inanimacy, causality, agency, containment, and support” (Mandler 1992: 592). As a foundational concept, action is categorized through association with self-motion and caused motion. Self-motion is related to animacy while caused motion is related to causality. The two concepts combine to create an understanding of agency in which the first (self-motion) causes the second (caused motion). The projection of action into an inanimate environment is usually considered to be through the conceptual metaphor EVENTS ARE ACTIONS, classified as either a generic-level metaphor (Lakoff and Johnson 1980) or a primary metaphor (Grady 1997). In both accounts, EVENTS ARE ACTIONS has a generic structure that can be applied to many situations regardless of specific source

and target content. The metaphor “imputes agency to something causally connected to the event” (Lakoff and Turner 1989: 37), activating an inert and static situation with implied action which also includes spatial motion or interaction.

This metaphor is part of a larger cognitive framework that has been expanded into the EVENT-STRUCTURE metaphor, an abstract skeletal concept that links causation with all aspects of movement, events, actions, changes in location, changes of visibility and changes of state (Lakoff and Johnson 1999: 170). The prototypical causation is confined to concepts of agency or “the manipulation of objects by force, the volitional use of bodily force to change something physically by direct contact in one’s immediate environment” (Lakoff and Johnson 1999: 177). While causation engages many primary metaphors (STATES ARE LOCATIONS, EVENTS ARE ACTIONS, CAUSES ARE FORCES, CHANGE IS MOTION, ATTRIBUTES ARE POSSESSIONS, for example), when direct projection of actions into the environment is involved, the causation at the heart of this metaphor is based on the inference of animacy through the result of a human agent (Lakoff and Turner 1989: 37; Grady 1997: 288).

Agency is used in two ways that have different entailments when associated with metaphors. The first definition of agency identifies an act of causation where the agent is the entity doing the causing and the patient is the thing being affected. The second definition of agency is as a synonymy for control as a human capacity. Agency has been included as an image schema under the term AGENT in some lists (St. Amant et al 2006) while classified in the category EXISTENCE in others (Croft and Cruse 2004). However, agency is more often considered to be a complex concept, suggesting it is an “experiential gestalt” rather than an image schema (Lakoff and Johnson 1980: 70). In primary metaphors, control and controlling are considered to be common target concepts making agency a superschema concept (Grady 1997: 254).

6.2.1 Causation

In agency as causation, the prototypical form of causation has only “a single specific agent and a single specific patient” (Lakoff and Johnson 1980: 70) although other versions include “action at a distance, nonhuman agency, the use of an intermediate agent, the occurrence of two or more agents, involuntary or uncontrolled use of the motor program, etc” (Lakoff and Johnson 1980: 71). Agency of causation often uses direct reference to force dynamic image schemas and caused inanimate motion but also involves physical actions of organisms through the inference of a body acting in space.

An example of metaphorical action created through an agent of causation in the architectural corpus can be seen in the example below:

(92) These walls *cleave* space; (Eisenman 1986: 195)

In the passage above, the architectural element “walls” is acting as an agent, applying the force dynamic image schema of FRAGMENTATION and DIVISION to “space” through the term “cleave”. In order for space to be the patient in this expression, it must be bounded and conceived as an object through the conceptual metaphor SPACE IS AN OBJECT. The walls then have self-motion which allow them to cause an event against the concept of space. The action is direct and there is no particular aspect of the force which suggests the involvement of human capacities or the interaction of a body, whether human or nonhuman. Instead, there is a direct interaction between two inanimate and non-kinetic elements of the built environment where one is perceived to act with force upon the other.

The same application of agency can be found throughout the corpus with architectural elements, parts of buildings and architectural abstractions given metaphorical actions. To exemplify further, the next passage operates in the same way as the one above:

(93) a disjunctive plan where three volumes *penetrate* into each other
(Hartoonian 2006: 112)

In this example, three (spatial) “volumes” are acting as agents. The volumes, which are conceptualizations of enclosed space, are mapped to objects using the same background metaphor SPACE IS AN OBJECT found in (92). The metaphor uses these bounded and objectified volumes to interpret a formal relationship through their interaction but the image schema in this example is PENETRATION rather than FRAGMENTATION and DIVISION. This example has three agents which are also the patients as the objectified volumes both penetrate and are penetrated.

In both (92) and (93) above, the action is constructed directly from force dynamic image schemas of DIVISION and PENETRATION, respectively. The instances are representative of a pattern in the architectural corpus which routinely assigns actions to the relationship between objects based in schematic forces such as *penetrate, strike, slippage, collapse, attach, split, displace, push, sever, undermine, break off, and shift*. In metaphors using these schematic concepts, the agency is not based in considering the building or building element as having a human body but interprets the formal relationship as being constrained to self-motion and caused motion. All instances activate non-animate aspects of the environment through the interpretation of formal relationships. The active metaphors are FORM IS MOTION, FORM IS ACTION, and EVENTS ARE ACTIONS, with the first two being aligned with interpretations of physical space and the last orientated towards abstractions.

Agents do more than present a dynamic force against other elements in a direct sensori-motor expression. There are instances of agency in the corpus where a body is inferred and these examples become more complex carrying subtle meanings as part of discourse. Body references come in three forms:

- 1) the generic sense of actions of an organic body but non-specific to the characteristics of that organism,
- 2) references to specific actions of a body that is nonhuman, and
- 3) actions that are an expression of a human body.

The first form of body reference has non-specific actions to the ownership of that body and the metaphor uses a force or spatial movement image schema as the primary term. This is not dissimilar to basic causation actions discussed above with an agent, patient and force schema. The difference is a richer inference as can be seen in the example below.

- (94) Ahead a small flight of stairs *just caught* in the slightly thickened walls
(Till 2009: 213)

The mapping of a body to a non-animate element introduces a key aspect to an environment, namely mobility (i.e. self-moving animacy). The body allows something to act and to move in space independent to a trajectory, which then allows for causation to occur and the creation of an agent. In example (94), the stairs are given a body so to be able to move but the movement is not what creates agency. This suggests that while FORM IS MOTION is often present in metaphors using agency, it is not the critical aspect of the metaphor. The agent in (94) is the “thickened walls” which are doing the capturing while the stairs are the patient, being acted upon and “caught”. The scene might elicit images of butterfly and nets, insects and resin, or even dinosaurs and tar pits but there are no specifics in the expression to allow a definitive source domain to be identified.

The second type of body reference in metaphors of agency is one that uses specific characteristics of a body but those characteristics are not specific to a human. This is more than just agency with animate self-motion, and the presence of force and spatial motion schemas that we found in the examples above is lacking. Instead the presence of a body is used to map the characteristics of organic and animal interactions acting as an agent in the environment. One example of an expression is:

- (95) when this surface could *brush up* in exquisite proximity to the architectural surface (Lavin 2011: 82)

The expression contains a metaphor of interaction between two conceptual interpretations of the physical enclosure of building – the surface of the interior expression and the surface of the architectural function of structure¹². The two surfaces are only conceptually separate and the metaphor chosen is one which associates the surfaces through an interaction of intimacy. Rather than a force dynamic expression, the action involves knowledge of richer concepts as “brush up” suggests the presence of a mammal with fur, generally experienced through house cats or dogs. Although a body is present in the expression, the type of agency is consistent with causation through action.

By far the most common references to agency of causation in the corpus are those of the third type of body reference – the mapping of the actions of a human body to architectural objects. This is consistent with the presence of the human body mapped as an object discussed in Section 6.1 but creates instances of human agency through correlation rather than mappings based on resemblance. In addition, there is a difference between metaphors mapping the body as an object and those mapping the body as an agent. As an object, there is clear use of terms that activate the metaphor but as an action, the body is only implied. The most common inferred aspect of the body is the hands and the ability to manipulate the environment.

(96) the walls that *reach up* to connect you with the starry sky (Buchanan 2012: 17)

¹² The context for this quotation is a disciplinary “battle” between Architecture and Interior Design. The surface belongs to a hall as an interior space and the author wishes to recognize it as belonging to Interior Design. The structure of the building is being used as an example of architectural responsibility and, thus, represents that discipline. Both the interior and the structure are then considered as objects with surfaces. These concepts would not be difficult for someone educated in architectural or interior design to understand although they seem esoteric without that training.

The “walls” in (96) not only perform actions which they cannot literally perform, but they are given appendages that they do not have. The human arm and hand are the major mechanism of connection in the passage yet there is no direct reference to these terms. Rather, the metaphor is one that connects spatial location and touch to attention through PROXIMITY IS RELATIONSHIP. The walls in (96) can be interpreted to operate in two capacities – first as a person which can reach towards the sky and second as a prosthesis of the human who is experiencing the context (“you”). The former maps the walls to a person which is doing the reaching as a contained entity. The latter allows the extension of a person observing the walls, as a real entity in real space, to form a metaphorical relationship between themselves, the wall and the sky. The metaphorical association then creates a single entity. In order to do this, the sky needs to be conceptualized as an object which can be both touched and part of a relationship through merging.

In addition to activating body capacities, metaphors projecting agency through the human body can use cultural situations and artefacts. In the next example, a freeway is given human agency to act on its environment but does so through a cultural activity rather than a basic body action or image schematic force.

(97) the freeway *hews its way* through the *green carpet*. (Lerup 2001: 52)

Similar to the action of reaching found in (96), the freeway in (97) is not literally performing the action of hewing, a term that refers to chopping wood. The action is metaphorical and applied to how the freeway is perceived in relationship to the surrounding landscape. The inference of the action of an axe against a tree is relevant to the context of the expression as the “green carpet” is a metaphor for a canopy of trees. The long, continuous surface of the freeway is interpreted as a force that chops and divides through FORM IS MOTION. Yet, at the same time, the freeway is also mapped to a human entity who cuts down trees, activating the metaphor FORM IS ACTION. The expression, “hews its way”, introduces much more

complexity than a correlation between a shape and a movement. The underlying metaphor considers the freeway as a human body (OBJECTS HAVE HUMAN BODIES) in the act of raising and felling of an axe as well as of motion forward. The freeway is thus conceptually doubled as both a continuous form moving through space and an instance of a singular entity, such as a lumberjack, striding through a forest leaving a trail of felled trees behind.

The mapping of agency, and particularly human agency, into physical and abstract situations was the most common gestalt used in metaphorical mappings in the architectural corpus. The projection of the capacity of the human body to act, as well as more generic reference to body action, was found throughout the identified metaphors. The other form of agency, control, is even more explicitly based in projecting human capacities and discussed in the following section.

6.2.2 Control

The second meaning of agency is a synonymy for the human capacity to exert control into their environment. In this sense, there is a “correlation between goal-oriented action and interaction with other people” or “between observable events in our environment and the presence of human agents” (Grady 1997: 288). This version of agency explicitly construes the metaphorical mapping as the ability to have a degree of control to influence a situation and not simply as a projection of action into the environment but. In this sense of the term, agency is not only the ability to make actions but more specifically the authority, capacity and influence to make that action happen.

While agency exerting control into situations still uses causation, the causation is not as simple as direct action but involves the social pressure of human-to-human relationships. This includes both human emotional capacities and human social contexts when pertaining to issues of causation. The following passage exemplifies this:

- (98) It is no longer framed by a terrace, but now *penetrates* the wall, seeming to *intrude* from the outside. (Eisenman 1986: 195)

The passage above is a sentence that includes two sequential metaphorical expressions discussing the context of the pool of the Barcelona Pavilion by Mies van der Rohe¹³. In both expressions, there is clearly a form of agency at work as there is an implied reaction in the surrounding environment or the suggestion of a necessary response. The referenced action is more complicated than seen in previous examples and without the clear activation of the human body. The first metaphorical expression, “but now *penetrates* the wall”, is similar to examples (92) and (93) above. It includes the force dynamic image schema of PENETRATION operating to project implied motion of the pool pushing through the wall. The second part of the sentence, “seeming to *intrude* from the outside”, engages a concept (*intrusion*) that goes beyond physical location, physical force and motion. To “intrude” is a social condition based on the perception of public and private space, belonging and safety with the involved agency including issues of control and authority. In order to intrude, there needs to be a human social interpretation of publicness and privacy projected into the relationship between the pool and the building.

Social interactions can be found in other metaphors in the corpus pertaining to the relationship between architectural elements.

- (99) No restful composure exists between elements and, instead, a kind of *jostling for position excites* the space, (Cadwell 2007: 23)

¹³ The Barcelona Pavilion was the German pavilion design by Ludwig Mies van der Rohe for the 1929 International Exhibition that took place in Barcelona, Spain. The pavilion was to be a temporary structure and was torn down within a year. However, the building has reached almost mythic status in the architectural discipline and is regularly used as a benchmark as an exceptional architectural example of International Style Modernism in contemporary discussions.

The example above uses agency to project activity onto nonanimated elements in a physical space. The space being discussed is composed of several different types of surfaces which lack a sense of hierarchy when perceived by a human visitor. Unlike the examples of agency through causation, there is no direct effect through physical actions such as *penetrate*, *cleave* or *hew*. Rather, the action is one of the movement of bodies as a reference to social status. The notion of “jostling for space” is already a metaphor applied to human interactions that maps physical space to social positioning. In this passage, physical elements of a building are being considered as people who are engaged in the activity of setting their social position in the group, effectively nesting one metaphor inside another which merge physical activity with social rank.

While the examples above focus on parts of the built environment engaging with each other, agency of control can also extend to the relationship between the environment and the human user. In terms of the architectural corpus, the identified metaphors suggest that architects conceive of the built environment as having authority and control over the human occupants. This is supported through humans projecting authority into a situation and then reacting as if they (the humans) are completely powerless. In these cases, the building or building elements are the agents while the users are the patients being acted upon.

(100) The exterior was instead an event-producing front that *captured* distracted urban passersby in their *turbulence* (Lavin 201: 92)

The building façade in (100) is mapped as a weather front, a force of nature which is dominant and powerful when compared to a human. While the metaphor might be considered as BUILDINGS ARE WEATHER EVENTS, the purpose of the mapping is to create a situation of a large difference in control between the building and the urban passersby. The building as storm is then given the ability to capture those passersbys through swirling wind currents. It is the term “captured” which is the key to this expression and the aspect that projects human

agency based in control into the metaphor. The notion of capture, being held and not having the ability to leave is a product of human society and social interaction. The BUILDING AS STORM then is extended into STORM AS PERSON through the agency of control.

The agency expressed in (100) is passive as the user needs to be distracted in order to be captured by the building. The next example is very clear that the building has the element of control and is actively engaging the human user to force activity and motion. This expression is discussing the entrance to the Querini Stampalia in Venice by the architect Carlos Scarpa.

(101) The doors *pinch* us, *yank* us inward, and clang shut (Cadwell 2007: 18)

In this passage, it is the doors as an architectural element that have been given control of their environment through agency. The human user is *pinched* and then *yanked* forward, forced to enter the building without any literal action. Instead, the exertion of control by the doors as a form of agency occurs through interpreting the formal composition and materiality of the built environment. The user cedes their own literal agency to allow the building to exert its metaphorical agency. In (101), an implied mapping between the parts of the building and the capacity of a human body is present. The presence of a body introduces the capacity to actively engage in the surroundings beyond simple force dynamic actions. Once a body is involved, the possibility of a relationship is created through interaction rather just action and control is possible.

Control and authority through agency can be found in other situations which are not focused on making a user act in a certain way. In these cases, action is still implied but the agency is often a sense of active resistance.

(102) the foyer of the Querini Stampalia Foundation is a difficult space to harmonize with, *thwarting*, as it does, every expectation. (Cadwell 2007: 18)

In the passage above, the foyer is given agency through resistance to socially expected actions. The relationship is still between the building and the user but instead of the building controlling the user, the building is now stopping predetermined expectations. The metaphor sets up a mapping between domains in which the foyer is being considered as having a human body with a sense of identity and social role. Agency occurs through the ability to resist that role.

6.2.3 Architect as inferred agent

The examples in the section above stress the role of agency in the ability of the environment to control human users of that environment or to resist being controlled. Another type of control that is present is control over the environment. These metaphors do not include the building users but instead reference the architect. Through these metaphors, the architect has the ability to manipulate and force the environment to their will. In these examples, the agent is left inferred rather than present.

(103) Concrete construction *is made to behave* with the taut precision of aircraft engineering (Allen 2000: 112)

Concrete construction is a process of fabricating the structural frame and floors of buildings. In the above example, the term is a metonymy using an OUTCOME FOR THE ACTION mapping. As such, “concrete construction” refers in this passage to the physical structure of the building rather than an act of fabrication. The material properties of the building structure are the patient in this expression and is “made to behave”, as if it were a human or an organism with enough mental facilities and the aptitude to take instruction, such as a dog. While the patient is clear, the agent who is exerting their willpower is not present within the expression. Rather, the agent can only be inferred to be the architect as they would be the entity who causes the behaviour to be enforced.

The role of the architect as agent on the environment is found in agency of causation as well as agency of control. The following example is a metaphor as there is incongruence between the scale of the subject and the perceived action which is acted upon them.

(104) slabs and towers were *scattered* in green areas without producing a recognizable form (Aureli 2011: 182)

The subject of this expression is “slabs and towers” as physical buildings existing at full scale in an urban environment. Incongruence occurs in the expression when these large structures have been “scattered” as if thrown by a human hand. There is clearly agency operating in the expression with the buildings being the patient, yet there is no clearly defined agent. The role of control is also subtle as, like in (103), the agent is the architect who proposed the formal design rather than any physical interaction between forms. The agent is only inferred and not directly mapped within the metaphorical expression. There is also no sense that the buildings are animate or entities but the environment is under the control of the agent who decides how it is arranged.

6.3 Personification

While human agency maps of actions of a human body onto nonhuman entities, objects and abstractions, the gestalt can be considered as an extension of personification. Personification has been noted by Lakoff and Johnson (1980: 33-34) as being a general category that is associated with many different types of conceptual metaphors. The term is used when human characteristics are mapped onto something nonhuman. This mapping is not constrained to actions but can involve any capacity of a human such as complex social interactions and emotional states. As such, personification allows for human considerations of buildings and conceptual ideas without causation and without body references. This means that

personification can be present without human agency making the two separate, but related, concepts.

There are several examples of personification without agency present in the architectural corpus that can be examined in order to illustrate the difference between the two concepts. Personification operating outside of instances of human agency has two major categories. The first considers aspects of the built environment as a person in order to consider its relationship with other aspects of the environment and users but without causation, motion or action. The second addresses the construction of a personality, the projection of identity or consideration of the mental state of things that are nonhuman.

Previous examples in this chapter have considered the built environment as being able to effect human inhabitants using metaphorical force, control and physical action through agency. However, relationships between elements such as buildings and people can also be emotional. In the passage below, no agency is present but there is personification which allows for intimacy to be considered between an airport terminal building and its users.

(106) the terminal elicits a surprisingly *intimate relationship* with people passing through it (Buchanan 2012: 13)

The building in (106) is the Kansai International Airport terminal, a massive enclosure by Renzo Piano based on two-directional curves¹⁴. The building is occupied by thousands of people in transit and could be considered overwhelming – the opposite of intimate. In this passage, the “intimate relationship” is not activated by PROXIMITY IS RELATIONSHIP using the formal tightness of circulation space as one might expect if intimacy inferred through users of a building brushing by walls to create a physical closeness. Rather, the interpreted effect of

¹⁴ The Kansai International Airport was built in 1994 in a high tech modern style in Osaka, Japan. The major characteristic is the 1.7 kilometer undulating roof form that is used to organize the spaces below.

intimacy is based in scale rather than proximity and both intellectual and physical.

Intellectual intimacy occurs through a contrast in expectations - the design intentions are lauded as very clear but the style of the building is one that is considered by the discipline to be alienating (blobitecture¹⁵). The clear understanding of the building ordering system stands in contrast to the expected experience of confusion and, thus, creates a sense of emotional closeness through a sense of knowing (UNDERSTANDING IS INTIMACY). The second intimacy occurs through the use of the building and is also based in formal composition. This intimacy is through the introduction of intermediate scale details. These details direct the movement of human user and orientate visitors through negotiating the scale of the body with the scale of the massive enclosure. Intimacy, in this case, is created through clear communication of the building to the observer where the building is perceived to “welcomes you” and “then guides and accompanies you” (Buchanan 2012: 13). As a personification, the building exists on several conceptual and physical scales *at the same time*. It is an object which the user is inside (container), a large-scale entity with which the user has a relationship (giant), and, paradoxically, a companion to the user with a body that exists within itself (friend).

Perceived relationships do not have to occur between the environment and human users. Buildings and other objects in the environment, as well as abstractions that are conceived as entities, can interact with each other as if they were people. In the following passage, architectural elements such as “a casino, villa, and pavilion” are able to:

(107) establish *unexpected relationships* that are further multiplied by other, smaller architectural elements (Aureli 2011: 192)

¹⁵ Blobitecture developed as a movement in architectural design during the 1990s and 2000s. It was generated by the appearance of formal designs that stressed curvilinear and organic “blobs” generated by experimentation with available 3D modelling software packages that used NURBS (nonuniform rational B-spline) and freeform surfaces. The work is often considered alien, non-human and non-contextual.

The relationships established between architectural elements, some of which are large buildings, require those elements to have independent existence and the capacity to be human. In the passage above, the architectural elements (buildings) establish a relationship to each other and to other aspects of the urban context. That relationship is presented as separate to any interaction by human users and the use of the term “unexpected” is a key element in the metaphor. In order for a relationship to be unexpected, there is the requirement of free will and independent action to be projected into inanimate entities. An expected relationship for our environment is based on grids, axis and predictable spatial organization (i.e. rational) can be inferred from this passage. However, architectural elements cannot form relationships outside of the perception by a human observer and the ability for those relationships to be a surprise empowers the environment to form its own decisions independent to humans – clearly an incongruence. As the relationship is unexpected, the associations between buildings are not based on geometry but some other projected understanding using the metaphor OBJECTS/BUILDINGS ARE PEOPLE.

The next passage also creates relationship between non-sentient things but uses abstract cultural constructs instead of physical objects as its target.

(108) the *bipolar relationship* between “old” and “new” worlds—Europe and the United States, classicism and modernism (Martin 2010: 166)

The bounded abstractions in (108) have a particularly problematic relationship with each other as they are expressed through the mapping of a human mental disorder of a bipolar disorder. The political entities of Europe and United States are metonymies for an assemblage of concepts related to design culture while “classicism” and “modernism” are terms that bound large cultural movements. The expression sets up two pairs of conceptually opposed concepts and then describes their relationship through personification using human emotional factors of depression and mania. The relationships suggested are not a physical association

through proximity in space but require the underlying mapping of and (BOUNDED)

ABSTRACTIONS ARE PEOPLE.

The second category of personification imbues nonhumans with human capacities of personality, identity and mental states, including emotions but without setting up explicit relationships or causation. It considers the target domain as an isolated element with self-awareness of its environment as well as the desires of being.

(109) the house, as architecture, is *excruciatingly self-conscious*. (Jones 2001: 6)

The example above clearly expresses the projection of human consciousness into the built environment. The house in (109) is not an object but a person aware of their own existence. The metaphor would be OBJECTS/BUILDINGS ARE PEOPLE but there is no sense of any action by a human body. However, in order to be aware, the house must have the ability to think and reason through a conscious mind, and, therefore, will have physical presence through a projected body. This conjecture is confirmed by the following example:

(110) A building with *presence* is not one that *would wish* to disappear [...] nor is it *coy, silly, garbled, embarrassed, referential, nervous, joking, or illusory* (Benedikt 1987:34)

The building in the passage above has self-awareness as it has presence and, therefore, an identity integrated into its environment. To be present means to be perceivable and something that should have attention paid to it or cannot be easily ignored. The existence of a body is inferred through the building's *desire* to not "disappear", an incongruent expression of will and identity which the building is not capable of making. To disappear obviously requires physical existence through a body present in space. Although the building is projected to have a human body, it is only present to express aspects of a personality allowing inert contexts to be considered as *silly, nervous, embarrassed, playful, undermining, joking, liberated, embracing* and so on.

A clear association between the personification of a bounded abstraction or inanimate object focused on emotional identity and the presence of a projected body can be seen in the next example.

(111) the house *prickles with paranoid alertness* (Lavin 2011: 105)

This expression aligns with the previous two, projecting the house as having self-awareness, identity and existence as if it were a human being. While “alertness” is a function of all higher organisms suggesting that this expression could involve the metaphor OBJECTS ARE ORGANISMS, personification occurs through that alertness being “paranoid” requiring the metaphor to be OBJECTS/BUILDINGS ARE PEOPLE. Paranoia is a condition of sentience and human reasoning making the metaphorical target both aware of its surroundings and actively interpreting (perceived) threats pertaining to itself. The presence of the body is even clearer in (111) than it was in (110) as the paranoia has a physical effect. The house “prickles”, a tingling sensation experienced by humans through the physical reaction of the skin to the external environment. There is no other way of interpreting this sensation except as one experienced by the awareness of ones’ own individual human body. As ENCLOSURE IS SKIN supported issues of identity projecting outwards using VISIBILITY IS ATTENTION to negotiate social standing and perceived identity through the projection of a body as object, personification allows the projection of self-awareness into things that are nonhuman.

Each of the examples in this section rely on personification activating the underlying metaphor of OBJECTS/BUILDINGS ARE PEOPLE. The building, building element or conceptual idea simply exists with the same cognitive and social facilities as people do, they have *presence, intimacy, self-consciousness, awareness* and *personality*. Although they have been infused with these human capacities, there is no requirement to act in any way in order to cause a response in the environment, meaning that there is no causation or projection of control present. While personification has been previously linked to causation as either a

personified agent or human agency (Lakoff and Turner 1987; Lakoff 1990), none of these examples are using an EVENT-STRUCTURE metaphor nor are they a resemblance-base mapping such as OBJECTS ARE (HUMAN) BODIES. Rather, there is an assumption of a correlation that equates things that are nonhuman to things that are human as a tool to interpret a context.

This assumption underlies many of the metaphors in the architectural corpus. Many different conceptual metaphors are associated with personification and there is cognitive flexibility that allows things to exist in several different conceptual states at once. For example, the airport terminal building in (106) is a physical object, a large-scale entity and a human-scaled entity at the same time. Each mapping coexists without conflict with the other. The same doubling of conceptual interpretation occurs in other expressions that activate personification. The following expression contains two metaphorical expressions that both interpret the relationship of a ramp to the building.

(112) Instead, the cinematic ramp materializes the very sense of historical progress to which I have been alluding, as it *weaves upward* through the building's various functional zones and *lands dramatically* on the roof (Martin 2010: 154-55)

The two metaphorical expressions in (112) are “[the ramp] *weaves upward* through the building's various functional zones” and “[the ramp] *lands dramatically* on the roof” as sequential interpretations of the perceived movement of a single ramp in three-dimensional space. These expressions seem straightforward as “weaves upwards” is clearly an instance of FORM IS MOTION equating the shape of the ramp to metaphorical motion. Yet the discourse context associates FORM IS MOTION with a reference to the human body and human social context through the second half of the sentence. The ramp “lands” on the roof with the qualifier of “dramatically”, an adjective that is associated with both a pose (body shape) and a context (social interpretation). The second metaphorical expression of landing reinforces the upwards trajectory and termination created by the first metaphor projecting the sense of

motion created by the weaving of the ramp. The style of landing then modifies understanding the ramp as a long object weaving through space to the motion of a body as many instances of a small object that moves through space. The shape of the ramp and its formal relationship to the building allows for the initial interpretation as a type of movement, but understanding the ramp as being a person is necessary for the second metaphor. In the same action of conceptual doubling discussed above, the ramp is construed as a continuous object and a body moving through space at the same time¹⁶.

In architectural metaphors, things that are non-human are routinely given the capacities of being a person including emotions and personalities through metaphorical mappings. These metaphors consider ideas and environmental object as having the same social context as people. There is no apparent dissonance to consider a single element as occupying several conceptual interpretations simultaneously suggesting that the relationship between objects and abstractions are not as clearly defined as might be assumed by domain categories.

6.4 Summary

The human body has a clear importance for the discourse of architecture. Conventionalized terms are used for their resemblance values to aspects of buildings mapping relational aspects of the human body to their counterparts in the built environment. The stress is on *structure*, *enclosure*, *thresholds*, *circulation* and *centrality* (i.e. importance). The body is also activated

¹⁶ The same overlaying of multiple ways of understanding a single element occurs several times in the examples provided in this chapter. While the ramp is a line in motion and a person, the airport in (106) is a massive container and an intimate companion, while the freeway (97) is also both a line and a body performing activities. The two ways of seeing a single element exist without any conceptual difficulty.

through correlational mapping of perceived actions into nonhuman things with the common examples being elements of the building, mostly through the inference of hands through *touching, holding, grasping* and *reaching*. These metaphors are ones of agency where the inanimate is given animacy.

The presence of agency, and especially human agency, is dominant as a gestalt involved in many metaphors found in the architectural corpus. Actions are projected into our built environment through OBJECTS/BUILDINGS ARE (HUMAN) AGENTS which is reducible to INANIMATE PHENOMENA HAVE (HUMAN) AGENCY. Force dynamic schemas are used when agency is based in simple causality with objects and ideas associated through physical proximity. The metaphors in this category use knowledge from the environment (*weave, tangle, fold, wrap*) or basic force schema (DIVIDE, PENETRATE, PUSH, WRAP, EXPAND) in direct association with either objectified abstractions or objects acting as an agent. This category also includes the mapping of the human body onto nonhuman things through INANIMATE PHENOMENA HAVE (HUMAN) BODIES and (BOUNDED) ABSTRACTIONS HAVE (HUMAN) BODIES. The types of metaphors are correlational rather than based in resemblance and use actions possible with a body (*grasping, moving, turning, seeing*) without engaging other human capacities.

Human agency is expanded with the introduction of COUNTERFORCE, RESISTANCE and BLOCKAGE image schemas. These schemas stress the concept of control as a type of agency interacting with the environment. Agency is still present but the causation is focused on influence rather than direct action. It is common to find metaphors in architecture that project human agency of control into the environment resulting in the ceding of authority into aspects of that environment. As such, inanimate objects and bounded abstraction are perceived have control over their environment including the users of that environment – i.e. humans. This transfer of authority as part of human agency creates a

situation where humans do not interact with their environment as much as the environment is conceived to make users act in a certain way. Ramps pull people through a building, windows allow views, doors encourage or deter entrance, and so on. Power and control are very much part of the value structure of architectural discourse, but it is often the built environment or abstract ideas that have authority as if they were human.

Underlying agency as control is personification as a gestalt found throughout architectural discourse. Personification is not just present in metaphors using agency but is associated with instances of OBJECTS/BUILDINGS HAVE (HUMAN) BODIES, (BOUNDED) ABSTRACTIONS ARE PEOPLE, OBJECTS/BUILDINGS ARE PEOPLE, INANIMATE PHENOMENA HAVE (HUMAN) AGENCY, and metaphors based in effects of having a human body such as PROXIMITY IS EFFECT, PROXIMITY IS RELATIONSHIP, SEEING IS TOUCHING, UNDERSTANDING IS GRASPING or INFLUENCING IS TOUCHING. Personification allows the projection of human capacities that are not actions or motions into nonhuman things. This includes projecting identity, a sense of being and emotional capacities. In contrast, or more precisely as an extension, human agency allows a personified element to act in the world as a way to influence it while personification allows awareness of existence.

Architects are quite aware of the power of the environment to affect the experience of human users, as one author states “the exterior gains social agency and the capacity to shape with gentle force the collective experience of the contemporary city” (Lavin 2011: 92). The interesting aspect from a cognitive point of view is that the data on personification and human agency suggest that the overall role of metaphor in architectural discourse is less about understanding buildings as having human bodies or human capacities. Rather, an important way that we human understand our environment is through projecting ourselves into that environment to then interpret it. At the same time, the projection of ourselves is

cognitively ignored and the environment is allowed to take on a separate identity which then has control over its occupiers.

7. EVALUATIVE CONNOTATION AS EMBEDDED VALUES

Metaphors in discourse are used for explanatory purposes and as an efficient way of transferring meaning, with evidence that metaphorical expressions “often carry evaluations, attitudes, values, perspectives or beliefs” (Cameron 2010: 4). As such, metaphor is one of the devices people use to express how they feel about something or their affective state (Cienki 2005; Kimmell 2005, 2009, 2013; Talmy 2007; Cameron et al 2009; Cameron and Maslen 2010). Evaluation and the expression of value judgements are then part of the purpose of metaphor. For example, calling someone a “hog” rather than a “student” in a classroom is clearly evaluative. The term “hog” has a negative connotation while “student” is neutral and it is the operation of the metaphor that transfers that connotation (Kieltyka 2008).

Metaphors with an evaluative role are found with clear groupings in the architectural corpus. These introduce concepts from the human body, human social interactions, the ability to act and a sense of identity (see Table 26). They also express values based on the positive nature of relationships, being whole, being near or next to things through proximity, having control and freedom of mobility as well as reinforcing that life, safety and nourishment are good. In other words, most of the sources with an evaluative role draw upon knowledge from the human body and its social context. There is clearly axiological polarity present as part of the evaluative content with negative interpretation being present as an inversion of the positive metaphor. For example, when CONTROL IS GOOD is present, there are also examples of its opposite, LACK OF CONTROL IS BAD.

Table 26. Evaluative sources in architectural corpus metaphors (by quantity)

Source Concept	Focus	Metaphor
Relationship	Connection	TO BE CONNECTED IS GOOD
		TO BE ABLE TO COMMUNICATE IS GOOD
		TO BE ISOLATED IS BAD
	Identity	TO BE REJECTED SOCIALLY IS BAD
		TO HAVE HIGH SOCIAL STATUS IS GOOD
		MAINTAINING STATUS IS GOOD
Body	PHYSICAL INTIMACY IS GOOD	
Wholeness	Body	TO BE WHOLE IS GOOD
		TO RETURN TO WHOLENESS IS GOOD
		TO BE MORE THAN WHOLE IS GOOD
		TO HAVE PART OF A WHOLE REMOVED IS BAD
	Identity	TO MAKE A NEW WHOLE FROM PARTS IS GOOD
		TO BE PART OF A LARGER WHOLE IS GOOD
Control	Identity	TO CONTROL SOMETHING IS GOOD
		TO BE CONTROLLED IS BAD
		RESISTING BEING CONTROLLED IS GOOD
	Body	UNWANTED ACTION ON BODY IS BAD
Freedom	Body	TO BE CONSTRAINED IS BAD
		FREEDOM OF MOVEMENT IS GOOD
		MOVING FORWARD IS GOOD
Existence	Body	PROTECTION IS GOOD
		ALIVE IS GOOD
		NOURISHING ENVIRONMENTS ARE GOOD
		CREATING NEW LIFE IS GOOD
	Identity	TO BE WHAT YOU ARE IS GOOD
	Proximity	Connection
Order/Structure	Body	STRUCTURE AND ORDER ARE GOOD
Scale/volume	Environment	BIG OR DEEP IS GOOD

Metaphors found in natural discourse have a complex hierarchy and often involve several metaphorical expressions clustered within a single sentence and expressing a single meaning. When these clusters play an evaluative role, the metaphors work together and reinforce each other. For instance, the passage below presents a hypothetical house as part of a discussion stressing the difference between two rail-mounted structures with one expressed as architecture (house) and the other engineering (bridge crane). The part of the discussion

focused on the house does not use a simple metaphor associating the target of BUILDING with another object in a different domain. Rather the difference between the house and the crane involves a complex cluster of metaphors that build upon each other to produce a single evaluative meaning.

- (113) Though the house *knows* the rest of the world beyond the rail-defined tract *it commands*, any *aspiration* it might have *to experience that wider possibility is restrained by its conviction that it is already in the best place* (Jones 2001: 5)

The evaluative meaning is clearly recognizable in the final part of the sentence when the house is conceived as being “in the best place”. This statement is positive since to be in the best place for oneself is, of course, considered a good thing both biologically (food, shelter, warmth) and socially (belongingness, trust, acceptance). The summation of these concepts is found in the human idea of identity. In order to occupy the best place, one must understand the relationship between one’s personal needs and variations in the surrounding environment including sense of one’s existence. The gestalt of identity is a very human concept which is transferred to an inert object in the environment. The object’s involvement with its surroundings is supported by five other metaphoric expressions in the passage that also build on the gestalt of identity by giving the house human emotional characteristics of desire and belief (“aspiration”, “conviction”) as well as the capacity to control its environment (“commands”). All the metaphors in the cluster are either positive or neutral and they work together to provide a rich understand of the evaluative position of the author. Table 27 shows a decomposition of this metaphor cluster.

Table 27. Analysis of the compound hierarchy of example 113

Metaphoric expressions	Term	Source domain	Target domain	Image Schema	Evaluation
“the house knows”	knows	HUMAN CAPACITY	BUILDING	???	positive
“it commands”	commands	HUMAN ACTIVITY	BUILDING	COMPULSION	positive
“any aspiration it might have”	aspiration	HUMAN THINKING	BUILDING	???, *FUTURE STATE	positive
“to experience that wider possibility”	experience	HUMAN ACTIVITY	BUILDING	???	positive
	wider	PHYSICAL PROPERTY	BUILDING	WIDE-NARROW	positive
“is restrained by its conviction”	restrained	HUMAN ACTIVITY	BUILDING	RESTRAINT	neutral
	conviction	HUMAN THINKING	BUILDING	???	neutral
“already in the best place”	best place	PHYSICAL SPACE	BUILDING	LOCATION	positive

The cluster of six metaphoric expressions is, thus, organized by understanding the house as a person using the metametaphor of BUILDINGS ARE PEOPLE which ties the group together.

There is no direct reference to the human body and the house does not have the physical characteristics of a person. Instead, the metametaphor aligns all the metaphors found in the expressions to a situation where the house is a discrete entity with human mental, emotional and social capacities. The source domains vary from human capacities, human thinking and human activities but they are all rich concepts associated with the quality of human life and a hierarchy of emotional needs. The evaluative meaning occurs because it is positive that humans have access to knowledge, the ability to control the immediate environment, the ability to plan for the future and the rightness of location. In this case, the house is being personified through an emotional state and has agency of control. While BUILDINGS ARE PEOPLE does not inherently have an evaluative role, the context it produces sets up other metaphors that do have evaluative roles. These include BEING ONESELF IS GOOD, TRUTHFUL IDENTITY IS GOOD and TO BE WHERE ONE BELONGS IS GOOD. The last metaphor can be correlated to concepts of health and habitat that include access to nourishment, safety and sense of belonging as noted above. It might be said that the difference between architecture

and engineering, as evidenced in this passage, is simply that architecture is human while engineering is not¹⁷. The metaphors used to make this difference apparent are layered and complex.

The examination of complex metaphorical expressions found in discourse such as the passage above questions the ability to ascribe fixed meaning to axiological poles. Where there is an assumption that freedom is always good and being controlled is always bad, this is not always the case. If the expression “is restrained by its conviction” in example (133) is considered in isolation from its context, the expected connotation would be negative through the normative interpretation of TO BE CONSTRAINED IS BAD or TO BE CONTROLLED IS BAD. However, when the larger context is considered, constraint is presented as self-control with the house restraining itself. Accordingly, the connotation of constraint is changed to positive rather than negative. There are other examples in the corpus where the evaluative connotation is the opposite to what is expected. Lack of structure and order is normatively negative as it counters our human understanding of being upright against gravity and having a fixed form (STRUCTURE IS GOOD, TO BE WHOLE IS GOOD). There are situations when lack of structure and order is positive such as when possibilities that would not normally be possible are now allowable (“the use of infrastructure-like organizations to *liquefy rigid* programming into nonspecific flows and events” as an expression of LACK OF STRUCTURE IS GOOD). In the same way, the metaphors TO GRASP IS TO CONTROL and TO GRASP IS TO KNOW generally produce the expected axiological metaphor TO GRASP IS GOOD. However, there are times when the

¹⁷ The distinction between architecture and engineering is not well established, accepted or defined within the associated professions. However, looking at historical positions as well as the type of activities contained in the responsibilities between the two disciplines, it seems likely that architecture is present when socio-cultural information is engaged while engineering maintains focus on technical information (i.e. when an object is only a machine with no spirit, soul or emotion).

inability to hold something is a good thing (“Such standards remain *usefully slippery*”). The opposite evaluation exists in these situations but it is still framed positively with the metaphor being THE INABILITY TO GRASP IS GOOD rather than TO GRASP IS BAD (i.e. the focus is on the benefit to not grasping). Other evaluations that are unexpectedly reversed include when an indistinct identity is positive (“the theater box *exists at the intersection* between claustrophobia and agoraphobia”) or the lack of solid boundaries is good (“the boundary between a space and its occupants *can blur*”). In the passages above, the discourse context modifies the normative axiological expectation to its opposite. These examples are not very common but they do exist and their presence questions the ability to fix axiological meaning.

Another question regarding evaluative content raised by scholars of CMT is the relationship between evaluative values and the structural hierarchy of conceptual metaphors. The introduction of cognitive hierarchy stresses the role of image schemas as foundational building blocks of conceptual metaphor and their involvement in the expression of values (Johnson 1987, 2005; Krzeszowski 1990; Gibbs and Colston 2006; Kimmel 2013). The question is complicated by the ongoing debate on the definition and role of image schemas (Zlatev 2005) and their influence in providing critical content to discourse semantics (Johnson 2005). Some of the metaphoric expressions in example (113) relate schemas of COMPULSION, RESTRAINT, WIDE-NARROW and LOCATION to positive or negative values. Others in the same cluster do not have easily recognizable image schemas although the assumption is that some basic gestalts must be present. The overall evaluative meaning of example (113) is BEING ONESELF IS GOOD, and TRUTHFUL IDENTITY IS GOOD. When the normative axiological content of individual image schemas is considered, this is less important than an overall alignment with the purpose of the cluster. In this way, image schemas that are generally considered positive can be negative or neutral depending on the larger meaning of its context. The meaning of the cluster produces an evaluative metaphor

that is not directly based on sensori-motor concepts. Rather, it uses the more complex gestalt of identity and requires social context to produce value.

In the context of the above discussion, the following sections review the theory of axiology as well as the types of axiological metaphors present in architectural discourse. The final sections of the chapter examine the more complex gestalts of identity and control as a contrast to sensori-motor axiological metaphors. These complex gestalts produce evaluative connotations that connect multiple image schema or span clusters of metaphors. The hope is that metaphor analysis can allow access to the qualitative values held in conventionalized discourse and to reveal disciplinary attitudes.

7.1 Axiology, image schematic domains, and evaluation

A central tenant in CMT is that judgement and beliefs are grounded in our bodies through embodied cognition. As such, the fundamental building blocks of cognition, such as image schemas and their metaphorical extensions, constrain all attitudes, opinions and values (Johnson 1987: 137–138). There is, thus, a strong causal relationship between our “structure, value, and purposiveness we take for granted” and image schemas which are “pervasive, well-defined, and full of sufficient internal structure to constrain our understanding and reasoning” (Johnson 1987: 126). This suggests that image schemas should be heavily involved in qualitative judgement and this is supported by the axiology theory of cognitive semantics (Krzyszowski 1990, 1993). However, while axiological content can be assigned to image schemas as isolated concepts, there is not often a clear distinction between “good” and “bad” in a discourse context. An additional difficulty is the subjective nature of evaluating complex expressions (Hampe 2005).

There is currently disagreement on the exact nature of image schemas and their relationship to conceptual metaphor. While image schemas as a foundation to conceptual

metaphors are identified by some metaphor theorists as pivotal to qualitative judgement, the same theorists claim that image schemas are too skeletal to hold such qualitative judgement (Johnson 2005). The concern is that image schemas are empty structures or “skeletons” which have no inherent qualities. If this is the case, the question is how quality becomes applied to metaphor or whether, as others argue, that schemas have fixed qualities associated with their conceptualization (Gibbs 2005). Axiology theory seems to address concerns of the former by relating broad values to sensori-motor experiences. While the general theory is focused on language loaded axiologically “in proportion to the degree of the human factor associated with them”, metaphoric expressions are considered to be “more prone to axiological polarity than non-metaphorical ones” (Kieltyka 2008: 36). The type of information found in metaphors that provides basic axiological content are image schemas.

Image schemas structured as binary couplings are considered to contain an additional parameter that maintains embedded qualitative judgement based on the axis of positive-negative (Krzyszowski 1993). Examples of such image schemas are:

- IN-OUT,
- PART-WHOLE,
- UP-DOWN,
- DARK-LIGHT,
- DULL-BRIGHT,
- CENTRE-PERIPHERAL,
- FRONT-BACK.

These schemas are developed from sensori-motor input consistently evaluated in the same way based on bodily experience. As such, concepts such as BALANCE, CENTRE, and WHOLENESS are judged as being positive based on values gained directly through internal sensations, while LIGHT, UP, and BRIGHT are positive based on experiencing the world as diurnal mammals. The axiological opposites to these concepts are coherently interpreted with

IMBALANCE, PERIPHERAL and PART (i.e. not being whole) as negative for internal sensations and DARK, DOWN and DULL as negative for environmental experience. Other axial interpretations are based on body experience in the world and it is proposed that these “euphoric and dysphoric properties are imperative for forming axiological concepts like ‘good’, ‘beautiful’, ‘true’, ‘bad’, ‘ugly’, and ‘false’” (Oakley 2010: 230).

While axiology explicitly focuses on image schemas as polarities, the notion of qualitative judgement or evaluative connotation has been present in CMT since the formation of the theory (Lakoff and Johnson 1980). Many of the early examples introduced by Lakoff and Johnson (“You’re *wasting* my time”, “I’m feeling *up*”, “That *boosted* my spirits”, “We’re still trying to *grind out* the solution to this equation”) require that we consider things like the efficient use of possessions, height and smoothness of movement as positive things. If we did not, the expression would lack any ability to infer meaning in its context. In fact, regardless to the literary or spoken complexity of the metaphor, expressions of quality as judgement can be shown to operate on fairly “conventional evaluative connotation, that is, whether a thing is good or bad” (Partington 2006: 289). The clearest evidence of evaluative judgement is present through the major target domains HAPPY, GOODNESS and HELPING in association with the source domains VERTICAL ELEVATION (UP/DOWN) and ILLUMINATION (LIGHT/DARK) (Lakoff and Johnson 1980: 115-116). There is an explicit qualitative dimension to the inference pattern in metaphors using these associations where positive was always associated with UP or BRIGHT and negative associated with DOWN or DARK. A certain amount of fixity can be found in the axiological interpretation of these metaphors, at least in English, where UP is consistently interpreted as positive and “light cannot mean ‘difficult’ or ‘unpleasant’ while heavy can” (Grady 1997: 3).

Lakoff and Johnson (1980) identified many metaphors with evaluative connotations. The Master Metaphor List (Lakoff, Espenson and Schwartz 1991) and the introduction of the

theory of primary metaphors (Grady 1997) added several more evaluative metaphors. A summary of the most common of these conceptual metaphors is provided below.

- GOODNESS IS WHITE / BADNESS IS BLACK
- GOODNESS IS LIGHT / BADNESS IS DARKNESS
- GOOD IS BRIGHT/BAD IS DARK
- HARM IS LOWERING / HELPING IS RAISING
- GOOD IS FORWARD/BAD IS BACKWARDS
- MORALLY GOOD IS CLEAN
- MORALLY GOOD IS HEALTHY
- BAD IS FOUL-SMELLING/GOOD IS SWEET
- SYMPATHY IS SOFTNESS/UNCARING IS HARDNESS
- DIFFICULTY/HARDSHIP IS HEAVINESS (EASE IS LIGHTNESS)

The metaphors listed above are very basic and some seem to be little more than image schemas acting as source domains (UP-DOWN, BRIGHT-DARK, HARD-SOFT, LIGHT-HEAVY) while a few others are more complex concepts but clearly associated with the human body (HEALTHY, SWEETNESS). The list of metaphors engages experience through human senses as values – degree of illumination, vertical elevation, cleanliness, quality of touch, reaction to a type of smell and relative experience of weight. This supports the position that core information used for evaluative expressions in metaphor is based on embodiedness through fundamental gestalts (i.e. image schemas).

Some researchers have gone as far as to suggest that metaphors like the ones on the list above are not different from the concept of domains. The argument follows that if image schemas are considered as different to a domain, how is it possible for an image schematic concept to operate in the same capacity as a source domain? Instead, image schemas are proposed to be considered as a special type or a subtype of domain called “*image schematic domains*” (Clausner and Croft 1999: 4). The difference is then focused on *the type of concept* that populates particular metaphors rather than the structure of domains, suggesting that

“image schemas and domains differ in degree but not in kind” (Clausner and Croft 1999: 21). Regardless, it is clear that image schemas contain axiologically loaded values and they are often used to directly construct metaphors that are axiologically loaded. The theory of axiology is supported by the list of conceptual metaphors using image schematic domains as there is a clear dichotomy of values presented as existing between two poles.

At the same time, previous researchers (Cienki 1997; Hampe 2005; Tseng 2007) and corpus examples suggest that it is best to understand axiology as a tendency in image schemas and schematic metaphors rather than an absolute or a rule. Even a term that seems as straightforward as *sweet* can be both positive and negative depending on degrees as well as context (Rakova 2003: 81). This is not to deny that there is a strong sense of axiology in certain types of image schemas (SPATIAL LOCATION, FORCE DYNAMIC, BALANCE and ATTRIBUTES) which can be connected to embodied experience. We might, however, challenge these concepts as performing in the same fallacy of dichotomy by which Johnson (2005) suggested a critique of Kant’s metaphysics, namely that considering evaluative connotation as a strict rule through axiology might “create absolute unbridgeable gaps that cannot capture the continuous and multi-dimensional character of our experience and understanding” (17). Hampe (2005) has also challenged the axiological understanding of image schemas and image schematic metaphors as “the denotation/connotation distinction is usually dispensed with in the cognitive linguistic framework” (117). The removal of the frameworks ignores the discourse purpose of the expression to focus instead on the isolated metaphor which then eliminates the possibility of nuanced fields of meaning.

7.2 Primary metaphors and axiology

The theory of primary metaphors is particularly interesting when considering metaphors used for evaluation and containing axiologically weighted content. This is due to the ambiguous

relationship between primary metaphors and image schemas. The theory of primary metaphors has many documented targets using axiological image schematic domains such as GOOD, BAD, APPEALING and HAPPY as summarized by Grady (1997: 291-295):

- GOOD IS FORWARD,
- GOOD IS BRIGHT (BAD IS DARK),
- GOOD IS FORWARD,
- BAD IS FOUL-SMELLING,
- APPEALING IS TASTY,
- MORALLY GOOD IS CLEAN,
- MORALLY GOOD IS HEALTHY, and
- HAPPY IS UP.

However, these examples are inconsistent with the methodology for identifying primary metaphors. The issue can be illustrated through examining two related metaphors that use the same source domain, namely MORE IS UP and GOOD IS UP. The decomposition of the conceptual metaphor MORE IS UP resolves into QUANTITY IS VERTICAL ELEVATION as a primary metaphor (Grady 1997: 285). The conceptual metaphor has the indicator for positive qualitative judgement (UP) while the primary metaphor provides a basic category rather than the axiological term (VERTICAL ELEVATION). The related metaphor, GOOD IS UP, is also axiologically weighted to be positive and should resolve into the same type of primary metaphor as it uses the same source domain. However, GOOD IS UP is listed as a primary metaphor and is not decomposed to QUALITY IS VERTICAL ELEVATION (Grady 1997: 285, 292). This creates an inconsistency in the presentation of primary metaphors as they need to be considered at the same level of structural hierarchy. A standard method of decomposition would move from linguistic expression to conceptual metaphor with specific image schema (UP-DOWN) and then primary metaphor with an image schema category (VERTICAL ELEVATION) associated with a superschema (scalar property) (Grady 2005: 48). However, a

characteristic of primary metaphors is that they will not contain the axiologically loaded term but only the category which defines the axis of judgement.

While image schemas have been considered the most basic type of information that operates in conceptual metaphors, explicit references to negative and positive through axiological polarity is suppressed in the theory of primary metaphors (Grady 1997: 30). A primary metaphor cannot be reduced further and through the process of decomposition, the axiologically loaded image schema is replaced by more general, abstract schema categories. The condition of suspending qualitative and evaluative content is recognizable through the examples which will have DARK and LIGHT rendered as LUMINOSITY, CLOSE and FAR as PROXIMITY, UP and DOWN as VERTICAL ELEVATION, LARGE and SMALL as SIZE, MORE and LESS as VOLUME, and HEAVY and LIGHT as WEIGHT. This would mean that for a theory of primary metaphors to be applied consistently, a pattern of decomposition would create instances where explicit axiology (UP-DOWN, FORWARD-BACKWARDS, SWEET-SOUR, CLEAN-DIRTY) are abandoned for a description of the measure (ELEVATION, SPATIAL LOCATION, TASTE, SURFACE CONDITION).

In addition, there is a question to the location of qualitative information when considering the relationship between conceptual metaphors and primary metaphors. For example, the linguistic expression “They greeted me *warmly*” is an instance of AFFECTION IS WARMTH (Grady 1997: 293). However, this is not a primary metaphor as it can be inverted to LACK OF AFFECTION IS COLD (“she greeted me *coldly*”) and both metaphors can be decomposed to the same primary metaphor AFFECTION IS TEMPERATURE. While AFFECTION IS WARMTH contains the axiological term WARMTH as a positive body event, it infers that affection is a good thing as a predetermined association. As an evaluative statement, the linguistic expression then relies on two conceptual metaphors, the previously recognized AFFECTION IS WARMTH and the evaluatively loaded metaphor WARM IS GOOD. This latter

metaphor is not a primary metaphor nor is it reducible from the affection metaphors. Rather, there is a correlation between affection and goodness with warmth implicit in the understanding of affection as a positive event (i.e. good).

The point of this observation is not to critique a published list of primary metaphors as this list is clearly presented as a work in progress and “require further investigation and analysis; [and] the list should be taken as suggestive rather than definitive” (Grady 1997: 281). Instead, it is to note that while image schemas appear to be axiological, qualitative information is suspended as the metaphor is decomposed as part of analysis. The resolution of conceptual metaphors into primary metaphors will only ever provide a category in which an axiological value is found but will not contain the value itself. The requirement for the evaluative understanding of an image schema is that schemas are associated with a fairly high level metaphor in a situated expression. Qualitative meaning sometimes requires the association of two or more conceptual metaphors attached to a single expression or between concepts across a discourse cluster rather than considering a single, isolated metaphor.

7.3 Evaluation in situated metaphors

The theory of axiology has less significance when expressions are considered in an expanded context which often includes subtle information, cultural references and several metaphors working together to create meaning. In these instances, we find increasingly more nuanced understanding of connotation that affect expectations of axiological positions (that CONSTRAINT or COOL are always axiologically negative, for example). The intention is not to discount the importance of positive-negative axiology that can clearly be shown to exist in metaphorical expressions. Rather, the point is that these basic evaluative concepts evolve into much richer, subtle, and less simple meaning due to contextual factors (Ming 2007: 142; Forceville and Renckens 2013). Other researchers reinforce this observation through the

example of a “thorny problem” (Partington 2006: 289-90). A problem that has “thorns” is difficult one, and the expression identifies the adjective as providing the negative evaluation in the sentence through mapping knowledge from the PLANT domain to abstract concepts. The image schema is not explicit but can be determined to be SHARP through an association of human interaction with the environment. Thorns are a best-in-class example of things with sharp points. To engage an object with thorns (or needles, spikes, pins, knives, etc. as other objects with points) is to put the hand at risk of pain. Considering thorns as a salient example of a sharp object suggests that the metaphor for “thorny problem” would be THORNS ARE BAD or SHARP IS BAD. However, this conclusion would miss the point of the inferred meaning. A “thorny problem” is not a bad problem in the sense of being painful, it is a *difficult* problem that is hard to solve. In this case, the sharpness of the thorns needs to be understood in relationship with the human hand as a negative factor but not because of pain or being cut. Instead, sharpness is about inhibiting of the ability to hold, touch or manipulate an object. This activates a series of correlational metaphors and scenes needed to process the meaning of the expression including PROBLEMS ARE OBJECTS, TOUCHING IS KNOWING, the solving of a problem is the physical manipulation of an object, thorns stop the ability touch or hold the object and anything that blocks a desired action is negative. The metaphor, therefore, does not depend on THORNS ARE BAD but, instead, something like THE INABILITY TO MANIPULATE THE ENVIRONMENT IS NEGATIVE. This metaphor could be considered to be part of CONTROL IS GOOD/LACK OF CONTROL IS BAD polarity. In this case, it is not the thorns that are negative, it is the reduction of physical action they cause by being present.

Many of the architectural metaphorical expressions include this type of complexity in interpretation. This can be illustrated by a sentence that contains a fairly straightforward evaluative metaphor, WHOLE IS GOOD.

(114) If it were not for the paths making the *hyphen* between departure and

arrival, things would have *fallen apart* in complete irrelation (Evans 1997: 78)

The sentence contains two sequential metaphorical expressions starting with “if it were not for the paths making the hyphen” and followed by “things would have *fallen apart* in complete irrelation”. The second metaphorical expression carries the major evaluative connotation through the term “fallen apart”. To fall apart (i.e. not be whole) is normally a negative event and this expression supports that reading through the thing that has been stopped from dissolution. The expression thus references falling apart but the evaluative connotation is provided by the metaphor WHOLE IS GOOD. The reference to “irrelation” introduces not only physical wholeness but the positive aspect of being in a (stable) relationship. As falling apart threatens to dissolve any possible relationship between parts, two other evaluative image schematic metaphors are present, RELATIONSHIPS ARE GOOD and STABILITY IS GOOD. The image schemas operating in the expression includes the neutral PART-WHOLE as well as the axiologically loaded STRUCTURE-LACK OF STRUCTURE and ATTRACTION-DISCONNECTION.

The analysis of the metaphors and image schemas in “things would have *fallen apart* in complete irrelation” is straightforward and in alignment with the discussions of axiology above *if* considered as an isolated expression. However, the WHOLE IS GOOD metaphor expressed through “fallen part” is situated by the preceding metaphorical expression “if it were not for the paths making the hyphen”. The term activating this previous expression is “hyphen” as a concept from the source domain of WRITTEN LANGUAGE. The concept is used to interpret the space between the entrance and the exit locations of the building using the metaphor A BUILDING IS A WRITTEN LANGUAGE to map grammatical elements and punctuation onto building spaces. The space between doors contains paths and those paths are considered to be a “hyphen” as a comparison statement. A hyphen is a punctuation mark that joins words

to indicate they should be interpreted as a whole rather than singularly. The paths are to be considered to work in the same way, interpreting the separate entrance exit, and paths between as part of one joined experience.

One might consider the metaphorical analysis to be complete with an example of the BUILDINGS ARE LANGUAGE metaphor. However, when the context in which paths are a hyphen is examined, there is another event being projected onto the building elements and spaces. The paths metaphorically connect the entrance and exit so to consider them as a joined experience but in order to do this, the paths are given the active authority to make the connection. In this way, they are agents and the metaphor behind this is BUILDING SPACES HAVE (HUMAN) AGENCY. As agents, the paths *produce* the relationship between the events of coming in and going out of the space using the evaluative connotation that to create WHOLENESS and STABILITY is a good thing. It is the role of the agent which is key to understand the evaluative content of the expression and this has little to do with grammar or language. When the action of the hyphen, the role of the paths as agents and the sense of the expression are considered, the evaluative metaphors are WHOLE IS GOOD, RELATIONSHIPS ARE GOOD and STABILITY IS GOOD. These are joined by another underlying evaluative metaphor generated by the presence of an agent. This metaphor produces a positive interpretation of the expression through the ability to act and control a situation using TO CONTROL SOMETHING IS GOOD. The positive reading of control in this case is provided by the paths actively maintaining wholeness through arresting the dissolution of the building into parts. The two expressions in the single sentence thus use all four evaluative expressions based on WHOLENESS, RELATIONSHIPS, STABILITY and CONTROL to construct a complex understanding of the interpretation of this space.

The discussion above suggests that while image schematic information is clearly involved in producing poles of interpretation, there are also other more complex concepts that

operate in evaluative judgement. Image schemas are not the only factor to achieve their positive or negative interpretation. In fact, the metaphorical expressions found in architectural theory exhibit a tendency towards compound structures with a multidimensional hierarchy that associate higher level metaphors with concepts of the physical environment as entities with purpose, wills and identity. This was recognized by the BUILDINGS ARE PEOPLE conceptual metaphor along with some types of causation (c.f. Chapter 6). The built environment and architectural abstractions considered to be human entities encompass more than being able to act or to have a sense of a body. The consideration of the environment as a human introduces evaluative connotations based on complex human concerns. These values are not based on image schematic axiological polarity but more complex gestalts that act as domain categories.

Two of the most common gestalts used in architecture that project human values into nonhuman things are judgements based on issues of control through force and power and the evaluation of truth as an expression of identity. These concepts are difficult to identify at the sensori-motor level and require a significant amount of unpacking during metaphorical analysis. However, identity as part of personification and control as an aspect of human agency modify image schematic metaphor axiology depending on discourse point of view. In addition, this evaluative understanding is often constructed across a cluster of several metaphorical expressions as a megametaphor.

7.3.1 Control as Value

One of the most popular sources for evaluative judgement in architectural theory is based on expressions of control using the metaphors TO CONTROL SOMETHING IS GOOD, TO BE CONTROLLED IS BAD, and RESISTING BEING CONTROLLED IS GOOD. Control as a target domain has been well documented in CMT studies, usually related to spatial location or agency

(Lakoff and Johnson 1980; Grady 1997; Kövecses 2010). Evaluation occurs through two spatialized situations. The first is a correlation between positive interpretation of higher vertical elevation and the relative relationship between two conceived bodies “which gravity gives an advantage to the person located above another person, or object” (Grady 1997: 262). The second uses PROXIMITY and CENTRALITY to empower the ability to affect elements in the surrounding area through the projection of touch and causal effect. Height and centrality bring the expectation of more authority which is then correlated to happiness. Happiness, in turn, is mapped to being in control and feeling safe (Grady 1997: 254-255). The concept of CONTROL has a positive evaluation through the benefits it brings to our existence (CONTROL IS GOOD or CONTROL IS POSITIVE) and this alignment would suggest that all occurrence of agency should also be positively evaluated. As an axiological expression, the association of CONTROL IS GOOD with social status, happiness, and authority supports lack of status, lack of happiness, and lack of authority as negative expressions.

Metaphorical expressions in architecture support control as a positive-negative interpretation through the presence of the axiological metaphors:

- BEING IN CONTROL IS GOOD;
- TO RESIST CONTROL IS GOOD;
- LACK OF CONTROL IS BAD.

These are joined by references to control through schematic domains such as:

- spatial location
 - BEING IN CONTROL IS BEING ABOVE;
 - BEING IN CONTROL IS BEING BELOW;
 - BEING IN CONTROL IS BEING BETWEEN;
 - PROXIMITY IS (DEGREE OF) CONTROL.
- force dynamics
 - BEING IN CONTROL IS TO SUPPORT.

- containment
 - BEING IN CONTROL IS TO CONTAIN.

More complex body schema metaphors are also present with CONTROLLING IS GRASPING.

Control as a negative expression can be found through physical contact using metaphors such as LACK OF CONTROL IS LETTING GO and LACK OF CONTROL IS FOLLOWING. However, while there is clear evaluative connotation that aligns the presence of control is positive, *to resist control by another* is also positive and *to be controlled by another* is negative. The introduction of more complex metaphorical expressions and discourse intentions challenge the reading of control as a simple domain mapping. If we look at the instances of control with more detail, there are some patterns that emerge.

The concept of centrality in metaphorical expressions activates the presence of a body as a point of reference and proposes that being in a central spatial location gives hierarchical importance through proximity. Proximity allows the ability to make actions with the body which introduces limits because control is often conceived as power over things at a close physical distance. Close physical distance activates the image schemas CENTRE-PERIPHERAL and PROXIMITY, as well as BOUNDARY which demarks the termination of controlled space. As such, the bounding of space is important in order to define owned territory, as illustrated in the following passage.

(115) the entire landscape is *marked and dominated* by a freestanding hotel envisioned in the shape of a vertical *fish*. (Hartoonian 2006: 107)

The building in the passage above is mapped to two types of animals. The first mapping infers the building as a prowling animal through marking territory as a projected action while the second is an image metaphor describing the shape of the building as a “fish” (shape but not action). While both are references to animals, they are separate conceptualizations as it is obvious that fish do not prowl and do not claim territory. In terms of an expression of control,

the reference to the fish is a non-critical aspect of the expression. Rather, it is the act of marking as an expression of control which is important to the discourse meaning. Whether or not it is important that the building looks like a fish is left up to the reader. If the term “fish” is replaced by another word that expresses a gesture of form such as *wave*, *cylinder*, *sail* or *pumpkin* (i.e. image metaphor), there is no change in the discourse meaning of the expression nor would the change affect the evaluation of the sentence as positive. What matters is that the building, somehow, dominates the surrounding landscape through its presence understood as a field of visual influence using a version of SEEING IS TOUCHING. The expected territory of effect then extends from the visible surfaces of the building to mark a boundary using CONTAINMENT image schemas. The use of the source domain of a solitary animal marking a habitat suggests that the type of control is focused on domination through isolation.

The next example uses the same image schemas of CONTAINMENT and BOUNDARY combined with the CONTROL gestalt present in (115). Rather than using an organic source domain, this expression uses technology and mechanism, reinforcing the interchangeability of the two major domain categories (c.f. Chapter 2.3.1).

(116) Le Corbusier *brings* the negative space of the context into the spatial *force-field* of his own building (Allen 2000: 104)

In the example above, the area of effect is considered to be a “spatial force-field” rather than the territorial claims of an organic predator. The machine reference also marks territory through CONTAINMENT image schemas (BOUNDARY, EDGE, VOLUME) that defines a discrete area of influence and control. The expression activates is BEING IN CONTROL IS TO CONTAIN and the evaluative statement is TO CONTROL SOMETHING IS GOOD. The source reference in (116) suggests the building controls the surroundings by integrating undefined space (“negative space of the context”) into the building façade through a projected authority

of that façade. Again, it is visibility and visible surfaces that are being used as the deciding factor in the ability to control a territory.

The idea that a building should control its surrounding territory is found throughout the corpus and is always interpreted positively. Expressions using this evaluative connotation do not always use image schema categories of vertical elevation, spatial location or proximity but can activate body schema concepts. These expressions make assumptions about mapping higher level interaction of a body or human social interaction as part of the metaphor. The ability to control a territory, situation, person or event is a positive experience for humans, but the ability to resist control is also positive. The ability to maintain independence is a highly desirable condition. The passage below presents an expression of human action in social situations as used to understand the conceptual nature of a building.

(117) For architecture, emptiness implies that a building *should not be slave* to its program, *twisting and turning to accommodate* our every movement and wish—*squirming to please*, as it were— (Benedikt 1987: 52)

The passage above is clearly about the lack of ownership of one's own body, activated in this expression through the term "slave". The meaning of the sentence revolves around this term used to indicate that a lack of control over one's life should be rejected through the metaphor TO RESIST CONTROL IS GOOD. A slave does not have individual agency or control over their own body. This is recognized in the passage through forced body motions of "twisting", "turning", and "squirming to please". While motion expressions are very prominent in the architectural corpus, in this case they do not activate an expected metaphor such as FORM IS MOTION. There is no attempt in this passage to suggest the building should be assertive through its shape, massing or material form. Instead, the motion is being used as an elaboration on the metaphorical mapping between a HUMAN and a BUILDING in order to reinforce a sense of submissiveness. The expression then presents a building acting as a

human who, in turn, is acting as a dog grovelling to a master. The chain of BUILDING IS A HUMAN – A HUMAN IS A DOG creates a metaphor within a metaphor. The evaluative content of the metaphor is the ability to maintain individual identity and the ability act freely without influence through the evaluative metaphor TO RESIST CONTROL IS GOOD. While it might be considered that this metaphor is the axiological opposite such as TO BE CONTROLLED IS BAD, it is rather a corollary of TO CONTROL SOMETHING IS GOOD. The control of something is still being determined to be a positive event but, in this case, the something is your own body and thoughts. The change in perspective from things beyond the body to the body itself engages a gestalt of SOVEREIGNTY rather than AGENCY.

It turns out that the positive or negative interpretation of control is a matter of perspective. The next example produces a positive interpretation of not being controlled but lacks the sense of active resistance found in the example above.

(118) The *hard* plan *marshals* its occupants into *ordered* action. The *soft* plan, on the other hand, *allows* its occupants to *unfold* their lives in multiple ways. (Till 2009: 214)

The passage above contains three sequential and interconnected metaphorical expressions that use knowledge from the human body to express control as a positive or negative evaluation. A plan is a tool that architects use to discuss and communicate the composition of the ground layout of a building which includes circulation (how the building allows the movement of people) and program relationships. The term “plan” is being used as a metonymy in this example. It stands in for the physical building that will be constructed from the plan’s composition and is modified by the attribute image schema HARD-SOFT. The first metaphorical expression, “the hard plan marshals its occupants into ordered action”, uses CONTROL IS HARDNESS and presents the “hard plan” as controlling the lives of its users through the expressions of order, rigidness (“order”) and military command (“marshals”).

The second metaphorical expression, “the soft plan allows its occupants”, reverses the axiological pole to produce PERMISSIVE IS SOFTNESS. This allows the “soft plan” to contrast with the first metaphor in the sentence by giving freedom for its users to live as they please rather than through what the building will allow. The third metaphorical expression, “to unfold their lives”, reinforces the idea of softness through extending the ability to manipulate one’s surroundings through “unfold” as a positive factor. We could expect to find the “hard plan marshals its occupants” to be positive as the building expresses authority over its environment through TO CONTROL SOMETHING IS GOOD. However, the sentence is written from the point of view supporting the experience of human user rather than the building which reverses the expected meaning. The metaphor shifts the AGENCY from the building in the first expression to give it to the human user in the second expression.

When the perspective of the expression is from the point of view of the building, the building (or building elements) operates as an agent controlling the experience of the user. This version of CONTROL considers control as positive even through the personified building is the authority for the human users who inhabit it. Thus, the focus for TO CONTROL SOMETHING IS GOOD follows the position of the author or speaker. It supports whatever is the *metaphorical human*, whether a building, a building element or an architectural concept even through there is often a real human referenced in the context of the expression. Control, in these cases, can shift between gentle *guidance* and direct *power* through projected authority. The following passage is an example of guidance.

- (119) The asymmetric curves of the main trusses over the departures hall both *orient* you and *seem to tug you forward* to where the ribs of the boarding wing *guide you down* to the floor of that 1.7 kilometre long space (Buchanan 2012: 13)

The sentence above includes several metaphorical expressions linked in a single discourse context of the movement of a traveller through the Kansai International Airport terminal¹⁸. The examples of control through agency are found in “orient you and seem to tug you forward” as well as “guide you down”. The agent is the exposed truss structure of the airport terminal whose repetition generates a sense of forward motion that associates the JOURNEY gestalt with a version of FORM IS MOTION using the corollary REPETITION IS MOTION. There are conventionalized image metaphors present in “ribs” and “wing”. These are support elements in the expression since it is the truss structure which is the active agent. The control that the trusses exert through visual rhythm is the dominant purpose of the expression. The overall expression is focused on the notion of the building being able to “tug” its user forward, which then allows the repeated forms to act to “guide” motion forward. The forward motion of the human traveller is governed by the building and not by the person moving (i.e. human users are not in control). However, the ceding of control to the environment is positive in this example through the metaphor TO BE GUIDED IS GOOD as an expression of support. Overall, the rhythm found in the roof plane suggests a gentle and rather forceful compulsion where the user still has the ability to choose and is not powerless.

The sense of subtle control is present in other expressions which cede authority to the built environment to direct and guide human users. These expressions of control can be more forceful than found in the passage above but still positive. The next example, (120), makes no pretence of interpreting active and forceful control by architectural ideas as anything but positive.

(120) There are, of course, *strokes* of genius in the project, not least of which is *its focused assault* on the mechanisms by which the museum customarily *exercises expertise over* its contents and *authority over its*

¹⁸ The same building was referenced in example 106, Section 6.3.

constituencies. (Kipnis 2013: 135)

In this expression, there are four sequential and interconnected metaphorical expressions that are used while discussing a proposed design for the Tate Modern by OMA¹⁹. The discussion personifies two abstractions, the typological “museum” and the architectural “project” for a new museum, as if they were separate entities. These personified concepts are then put into conflict against each other. The design proposal then becomes a “focused assault” activating a military campaign but associating the event with “strokes of genius” which frames the violent action of attack as a positive event. The two terms of “museum” and “project” operate as metonymies, discrete architectural concepts for larger ideas with *museum typology* standing in for tradition and the *architectural project* representing progressive thinking found in avant-garde design.

The evaluative content of this expression has the “focused assault” interpreted as positive but the direct references to control are negative. This is due to the perspective of the author’s ideological position. For the author, it is important to support an avant-garde view of architectural design and this view considers anything “traditional” or based in historical patterns as negative. Since it is the typological museum (i.e. tradition) that holds control over its content and constituencies rather than more progressive factions, this type of control will be presented as negative. The breaking of this control by the “assault” of the architectural project (i.e. an avant-garde project) introduces the positive interpretation for expression. The successful conclusion of the expression would be the freeing of contents and constituencies

¹⁹ The Tate Modern proposal is an adaptive reuse project for the existing Bankside Power Station in London, UK – a massive steel framed industrial complex built in 1891. The Tate Museum opened a design competition for a proposal to renovate the historic powerhouse in 1994 that shortlisted to six firms, including OMA. This discussion is focused on the proposed design for the museum. The project was won and completed by another architectural firm, Herzog and de Meuron.

from the tradition museum. The liberation of “contents” and “constituencies” from the bad traditional museum might suggest that the evaluative metaphor would be FREEDOM IS GOOD or LACK OF CONSTRAINT IS GOOD. However, there is an assumption that freeing of “contents” and “constituencies” is not to allow them to be free but to bring them under the control of the project which is doing the liberating. This makes the evaluative connotation based on the metaphor TO CONTROL SOMETHING IS GOOD with the caveat that control is good only if it our control (or our proxy’s) rather than that of someone else.

The examples in this section use the same underlying conceptual metaphor, TO CONTROL SOMETHING IS GOOD or its corollary TO RESIST CONTROL IS GOOD, to create metaphorical expressions with positive evaluative. Architects conceive of their design proposals and built work in these expressions as entities in which are activated through projecting human qualities and experiences into non-human objects, entities and abstractions with agency. That projection considers an environment in which there is a polarity of authority and power with metaphorical entities assessed based on whether they have control or not. While AGENCY is present in these examples, the purpose of the agency is not just to act in a situation but to act through either an exertion of control or resistance to being controlled. The evaluation of control is then assessed positively if that control is aligned with the needs of the subject in question (i.e. to have control is good if it is me, but not good if it is you).

7.3.2 Truth in identity as value

The second important gestalt used to produce evaluative connotation in metaphors is based on expressions of truth centred on the concept of identity. This concept is found as an underlying metaphor supporting higher dimensional metaphors as well as connecting several metaphorical expressions as illustrated by the following passage.

(121) The building no longer seems to *have lost its will* to decay and exfoliation for here are solid walls with a reassuring *firmness*. (Cadwell 2007: 25)

The sentence above includes two metaphorical expressions addressing the same discourse subject. The context of the expression is the discussion of the Fondazione Querini Stampalia²⁰ in Venice and the consideration of its material composition as a renovation project of a much older structure. The building design introduces new materials but also reveals historical materials, surfaces and structure so that some areas appear to be unfinished by intention. The passage addresses a part of the building in which a large quantity of new surface materials has been added, creating the appearance of a more complete enclosure. In this context, the first metaphor, “The building no longer seems to *have lost its will* to decay”, is a personification that interprets the physical nature of the building as part of the capacity of how the building wishes to present itself. To have a will is to be sentient and to exert conscious choice about how to live. An organic body is mapped to the building through “decay” and ENCLOSURE AS SKIN is present through “exfoliation”. This metaphorical expression overturns the expected evaluation of STABILITY IS GOOD and WHOLE IS GOOD to instead support the positive interpretation of TO DECAY IS GOOD. While TO DECAY IS GOOD would normally be negative, it is considered positive because it is the will and desire of the building not to be whole, an example of how context can reverse expected axiological interpretation²¹.

²⁰ The renovation of the Fondazione Querini Stampalia was commissioned in 1949 and awarded to the Italian architect Carlos Scarpa. Scarpa based his design work in the sensitive integration of original and new elements with a stress on craftsmanship. Water was considered to an architectural element in the design.

²¹ In addition, personification has a discursive value as a strategy of the author. For further discussion on the topic, see Caballero (2006: 175-228) which reviews personification as a discourse strategy.

The second metaphorical expression in example (121) contrasts decay with wholeness with the introduction of the “solid walls with a reassuring *firmness*”. This expression reinforces WHOLE IS GOOD through an aspect of STABILITY IS GOOD using the concept “firmness”. The walls are considered to project a condition of solidity as a metaphorical condition of identity as the walls are not literally falling down or fragile. Stability has a clear positive connotation (“reassuring”) in this expression but creates a conflict between the intention of the building (wish to fall apart) against the needs of the user (wish to be stable). In the same way that the evaluative role of control is based on point-of-view, the correlation between good and wholeness or good and decay in this passage is connected to an expression of individual desire. The presence of identity through wilfulness overrides a standard axiological understanding.

The understanding of evaluative interpretation as affected by user perspective can be expanded through examining the following expression:

(122) At least OMA *skins* the bricks off the *cloying souvenir* to reveal the *raw skeleton* of its structural tower (Kipnis 2013: 136)

The context of the sentence is a discussion by the author of a design proposal for Tate Modern (unbuilt) by OMA. The example presented in (122) addresses the iconic power station chimney that is retained in the proposal for its cultural symbolism. The sentence contains four sequential metaphorical expressions connected through of the metaphor A BUILDING IS A (HUMAN) BODY. The sentence involves a cluster of metaphorical expressions and associated metaphors and a complete analysis of the source, target and image schemas is worth presenting for clarity, as shown in Table 28.

Table 28. Analysis of compound hierarchy of in example 122

Metaphoric expressions	Term	Source domain	Target domain	Image Schema	Evaluation
“skins the bricks off”	skin	HUMAN BODY	BUILDING	SURFACE, LAYERING, PEEL	neutral
“of the cloying souvenir”	cloying	HUMAN TASTE	BUILDING	SWEET-BITTER	negative
	souvenir	HUMAN ARTEFACT	BUILDING	OBJECT, *MEMORY	positive
“to reveal”	reveal	HUMAN SIGHT	BUILDING	DISTINCT	positive
“the raw skeleton”	raw	PHYSICAL PROPERTY	BUILDING	OBJECT, *ATTRIBUTE	positive
	skeleton	HUMAN BODY	BUILDING	STRUCTURE, INSIDE-OUTSIDE	positive

The first metaphorical expression, “OMA *skins* the bricks off”, clearly uses aspects of A BUILDING IS (HUMAN) BODY but the body reference is applied to an action as a verb (*skins*) rather than as the normalized noun which understands skin as the outer surface of an enclosure (c.f. Chapter 6.1.2). The metaphorical term, “skins”, refers to the removal of a thin layer of material from the power station chimney. Through this metaphor, we understand that a past state and a current state of a building are different based on a design action – the brick that is present will be removed in the new proposal. The image schemas of SURFACE and LAYERING are present which represent schema categories of container and multiplicity, but the dominant image schema is the force dynamic action of PEELING.

The next expression, “the cloying souvenir”, is another reference to the power station chimney and activates A BUILDING IS A SOUVENIR. Both buildings and souvenirs are cultural artefacts and both are objects but there is a significant difference in scale between the two. There is also a difference in the purpose of a building when compared to the purpose of a souvenir which is the reason this mapping is a metaphor. Incongruence is created by the term “souvenir” when it is applied to a building as it is an ironic expression to suggest the building is a useless memento rather than an active environment. The souvenir is modified by the addition of “cloying” which reinforces the discourse purpose of distain towards the existing

industrial building with a clear, negative evaluation. The image schema associated with “cloying” is the axiological gradient of BITTER-SWEET but uses TOO SWEET as the negative rather than BITTER. In addition, there is another type of information present but it is not a source domain or an image schema – souvenirs activate concepts of *memory*.

The third metaphorical expression is “to reveal” as an instance of KNOWING IS SEEING. This metaphor is associated with evaluation through the axiological image schema DISTINCT-OBSCURE, where distinctness is positive and obscurity is negative. The thing being revealed, and thus known and valued through that knowing, is the chimney. The fourth metaphorical expression then returns to the chimney as an organic body through “the raw skeleton of its structural tower”. This final expression is coherent with the first expression as the skinning of the bricks allows for the “raw skeleton” under the skin to be revealed. While one might expect flesh to be revealed under the skin, the removal of bricks from the chimney exposes structure. Building structure is normalized as a *skeleton* in architectural discourse in the same way the outer enclosure is normalized as *skin*, and both are coherent expressions of BUILDING IS A (HUMAN) BODY. The power station chimney is thus considered to be a body in the first and fourth metaphorical expressions and as a cultural object in the second. Although the target is the same building, the metaphor source domain shifts from an organic body (human or mammal) to an object as a cultural product and then back to body without any discontinuity.

It is not possible to understand the evaluative connotation of (122) through simply considering the isolated image schema axiology or even isolated individual conceptual metaphors and non-axiological image schemas. The image schema information present is BITTER-SWEET (or TOO SWEET) and RAW-COOKED but both are used to add inflection rather than provide the core meaning of the expression. *Skinning* through the dynamic action of PEEL can be associated with both negative and positive factors as to skin or peel is

negative when addressing the human body (*pain, flaying, removal of protection, penetration of the body container*) but positive when applied to objects, resources or materials (*access to something good below, access to needed material, creation of a product, removal of something not wanted*). While we would expect a negative connotation in this context as the building is being considered as a body, the evaluation is actually positive. The skin in (122) is associated with the cultural identity of the existing chimney and the author considers the original presence of the building form as negative. Since the original building surface was considered ugly to the author, the removal of the visible layer of that form, the skin, is positive. In another reversal of expectation, a souvenir is usually a memento of a positive experience but is being considered negative in this expression. That negativity is not based on personal memory but on *cultural memory* and *social status* through considering it as being “cloying” (i.e. overly sweet and culturally tacky).

The positive skinning and negative souvenir set up the focus of the expression which is the experience of the building’s identity through the visibility of its true nature – the “skeleton”. A skeleton is just what it is without the covering of flesh, there is no possible deception in its identity. The authentic nature of the skeleton is reinforced by expressing it as “raw”. Raw in this case does not mean uncooked but, rather, it means to be what something is without embellishment, editing or refinement (*raw truth, raw facts, raw experience*). The larger gestalt present in the example is that of IDENTITY as expression of truth. This gestalt is at the base of all the metaphorical expressions that form the cluster and provides a discourse theme between the dichotomies of falseness-truth, visibility-knowledge, and surface-depth. The building is being allowed to express itself as if it had an essential nature (which it does not). This gestalt is not an image schema as it is too complex, nor is it directly metaphoric as there is no domain transfer although the building is being personified in order to engage identity.

The concept of identity associated with buildings is persistent in the architectural metaphorical expressions. In particular, it is the need to express the truthfulness of identity as something that is projected from inside to outside. The “raw skeleton” is one instance of this mapping but so is the “very spirit” found in the next passage.

(123) the piazza is the *very heart* of the scheme, *orienting* visitors before entering the building, and *conveying and expanding* the *very spirit* of the complex (Buchanan 2012: 12)

The sentence above is discussing a built project rather than a proposed design, the Parco della Musica concert hall complex²² by Renzo Piano. It includes a cluster of metaphorical expressions focused on a single topic which, in this case, is the purpose and function of a piazza, or urban square, in a building complex. Four distinct expressions can be identified that use mappings from the human body, human agency, and human existence. The number and complexity of the metaphors in the cluster, the metaphors and their associated schemas and evaluative connotation have been presented in the table below for clarity. As in the previous example (122), the expression contains a complex association between several metaphors, multiple source domains and schema focused on a single discourse purpose. Where the previous example used memory as a complex gestalt, this one uses identity through the idea of people having an essence or a spirit.

²² The Auditorium Parco della Musica is a built project completed in 2002 on a site that was part of the 1960 Olympic games area in Rome. The complex contains three large and extremely programmatically flexible concert halls. The organization of the three halls, which is highly unconventional, was accomplished by using the piazza as a fourth focal point to tie the complex together.

Table 29. Analysis of compound hierarchy in example 123

Metaphoric expressions	Term	Source domain	Target domain	Image Schema	Evaluation
“the very heart”	heart	HUMAN ORGAN	URBAN SPACE	CENTER-PERIPHERY	positive
“orientating visitors”	orientating	HUMAN ACTIVITY	URBAN SPACE	ORIENTATION	neutral
“conveying and expanding”	conveying	HUMAN ACTIVITY	URBAN SPACE	SPATIAL MOTION, COMPULSION	neutral
	expanding	ACTION (ENVIRO)	URBAN SPACE	EXPANSION	positive
“very spirit of the complex”	spirit	HUMAN ARTEFACT	URBAN SPACE	???, *EXISTANCE	positive

The first expression maps the internal organ of the “heart” to a piazza (i.e. urban square) using the metaphor PIAZZA IS A HEART. This metaphor is based on understanding URBAN SPACE IS A (HUMAN) BODY but activates specific evaluative knowledge through combining aspects of the human body with two other conceptual metaphors. The importance of the piazza is reinforced through a reference to a “heart” which carries the culturally applied meanings of IMPORTANT IS CENTRAL and ESSENTIAL IS INTERNAL. It is this last metaphor that is important for the larger discourse meaning of the metaphor cluster. The second expression, “*orienting* visitors before entering the building”, shifts the metaphorical mapping from the object of the human body to action based in human agency. While the PIAZZA IS A HEART, it is also an agent that directs human movement and guides users (PIAZZA IS A PERSON). Although agency is present, the image schema is SPATIAL ORIENTATION rather than a force dynamic concept. This is due to the built environment acting to influence the human visitor rather than through more directed or forced action. The agency of the environment is still coherent with the earlier examples of control in the section above.

The final two expressions, “conveying and expanding” and “the very spirit of the complex” are linked because the “spirit” in the latter is considered as the object which is manipulated by the piazza in the former. In this regard, the piazza still operates as an agent but the patient has shifted from the human visitor to the identity of the building compound.

The introduction of the term “spirit” is key to infer the evaluation of the expressions as a cluster. This concept is supported by the introduction of ESSENTIAL IS INTERNAL earlier in the sentence with the reference to “the very heart”. The essential characteristic of the complex, its personality and sense of true identity is the value being presented in the cluster of metaphors in this passage. In this case, identity is held internally as a metaphysical presence rather than projected from a surface such as the skin or a face. The space of the complex is given value by how it expresses itself truthfully and expands on its own nature with the responsibility given to the piazza through the CENTER-PERIPHERAL schema of the “heart”. As noted by one of the authors in the corpus, the built environment is not an inert collection of objects but buildings and building elements that “define their own condition of being” (Eisenman 1986: 193).

The belief in the truthful expression of identity as a positive value can be supported as an evaluative goal in architecture by looking for its opposite. The counterpoint of a positive interpretation of identity as a representation of truth is projection of a false identity or a disguise as a negative.

(124) that seem, at first, to signal the end of the idea of the total work of art turn out to be, on closer look, a *thin disguise* of the traditional totalizing ambitions of the architect. (Wigley 1998: 5)

In example (124), the “disguise” operates to present something different to what it is, supporting the idea that all things have an internal essential nature and truth is the presentation of that nature to the outside world. The alignment between inner character and outer visible appearance is considered to be important as we assess and understand what we see. It is the outer appearance which negotiates with the social and environmental context, part of a series of related conceptual metaphors and schema that include the image schemas CONTAINER, SURFACE, and the metaphors KNOWING IS SEEING, ENGAGEMENT IS

VISIBILITY, ATTENTION IS SEEING and SEEING IS TOUCHING. In this example, a negative evaluation is created by the perceived lack of alignment between a concept's outer visible surface and its inner nature. This lack of alignment is interpreted as falseness. The modifying adjective "thin" allows the reader to infer that the visible surface won't hold up under examination and it is easy to undercover what the disguise is covering (i.e. the "true" nature"). The disguise reference makes the expression a cultural statement using the source domain FASHION or COSTUMES but also references concepts of identity and issues of being. In this passage, it is the visible surface that holds primary information about identity and a falsified identity is created through covering or changing surface appearances. The basis of the underlying evaluation is coherent with the other examples of valuing truth in identity.

In the examples above, the evaluative connotation of the passages is found to be constructed across several metaphorical expressions working together in a cluster. The evaluation is not as simple as listing the axiologically orientated image schemas or even surface level metaphors as the situated context and interaction between metaphors often modifies the normative understanding for discourse purpose. Personification through (BOUNDED) ABSTRACTIONS ARE PEOPLE or BUILDINGS ARE PEOPLE often operates as an underlying megametaphor to introduce complex human value structures to nonhuman applications.

7.4 Summary

Evaluative connotation found in discourse examples of conceptual metaphors align with previous observations including support for the theory of axiology and the polarity of image schemas. Image schemas coupled in positive-negative pairing based on human interpretation of the physical environment are clearly present with examples of attributes such as HARD-SOFT, spatial location such as UP-DOWN or CLOSE-FAR, body sensations such as

SWEET-SOUR or SHARP-DULL and physical knowledge such as PART-WHOLE. These are considered as part of evaluative expressions when used in discourse and are clearly applied for that purpose. There is also a general coherence to how the terms are employed, such as in the previous example:

(118) The *hard* plan *marshals* its occupants into *ordered* action. The *soft plan*, on the other hand, allows its occupants to unfold their lives in multiple ways (Till 2009: 214)

When hard and soft are present, our sense of body comfort expects softness to be more positive than hardness and this is the case in corpus examples. We can understand hardness to mean uncomfortable in this sense rather than simply rigid. If *hardness* is contrasted with another closely aligned term, *firmness*, the effect of discourse context can be understood. Both terms relate to rigidness but hardness is considered negative where firmness is considered positive. This is because firmness is part of STRUCTURE-LACK OF STRUCTURE as a necessary body condition rather than an optional body sensation. Hardness, then, is a term of body comfort where firmness relates to being a cohesive entity. This current discussion, as well as those in the chapter above, identifies a concern with concentrating on image schema information and axiological classification as the primary factor for evaluative identification. In the metaphorical expressions presented here, image schemas provided either low level structure or supportive enrichment to primary meanings. *Hard* and *soft* in (118) work to identify two different types of spatial designs but are not essential to the meaning of the expression. Rather, it is personification, the projection of human agency, social aspiration and personalities of the plans which contain the evaluative meaning with soft and hard operating as accent identifiers.

The personification of an inanimate object, inanimate environment and bounded abstractions creates a series of conditions which are too complex to be image schemas. A

house can dream, aspire, challenge, and examine its identity and sense of purpose, an abstraction of a museum be an expert and exert control over the people who attend its displays, and a path can form social relationships with aspects of its surroundings. These are not sensori-motor concepts but they are important to understand the metaphoric expressions found in the corpus. While source domains might be the HUMAN BODY, HUMAN ACTIVITY or HUMAN SOCIAL INTERACTION and image schemas might utilize FORCE DYNAMIC, CONTAINER or SPATIAL MOTION categories, some of the motivating content for discourse meaning comes from richer gestalts such as IDENTITY, CONTROL, RELATIONSHIP, FREEDOM and EXISTENCE. It is these gestalts which provide much of the context for evaluative interpretation of metaphors in the corpus.

Many of the values expressed by metaphors using these gestalts are based in socio-cultural rather than sensori-motor information. They map the concerns and relationships that exist between humans to things that are nonhumans, whether an object, building or abstraction. The influence of that metaphoric human on its context encompasses the same range of real humans when acting to influence their contexts. For architects, the built environment is understood as a person but the evaluative content is highly dependent on the situated point-of-view and personal needs. As seen in the presented examples, the axiological interpretation is affected by desires for sovereignty and identity such as ‘me versus not-me’ and ‘us versus them’ as well as issues of truth, ethics, and control. However, these aspects of the metaphor are not easily captured and are difficult to document through structural classification.

8. DOMAIN SPECIFICITY AND ABSTRACTIONS

This chapter explores two points of interest that have developed through the analysis of the dissertation data and related to discussions presented in the introduction. These points engage how architecture is defined as a domain and the nature of the metaphorical mapping between a source or target. The first section of this chapter addresses expressions found in the corpus clearly meant to be a metaphor by architects but seem to map from the source domain of BUILDINGS to the same target domain BUILDINGS. If we were to classify such expressions as instances of A BUILDING IS A BUILDING, there is obviously a conflict for metaphor scholars as the source and target domain appear to be the same in a violation of the most basic definition of a metaphor. The existence of these mappings raises two questions. The first is what type of information is being mapped when one building is used to understand another building. The second question asks if what seems to be a metaphor is actually some other cognitive structure that allows interdomain mappings, such as a metonymy.

The second section of the chapter addresses a curious operation relating to scale, or more exactly, the suspension of the awareness of scale in conceptual metaphors. Scale is part of the knowledge and discourse of the domain of ARCHITECTURE. Accordingly, the operation should be highly visible to those in the discipline and recognized in discussions of architecture. However, expressions found in the corpus have authors comparing or correlating radically different sized objects, events or actions in metaphorical constructions without difficulty or even awareness. In addition, a lack of concern over scalar relations of the

elements used in metaphors is quantitatively common, prompting the exploration of these issues in this section.

The final section of this chapter hypothesizes a possible explanation that allows both inter-domain mapping and scale suspension to occur in architectural discourse. This hypothesis requires considering the relationship between physical and nonphysical knowledge. It conjectures a need to extend the fundamental theory that positions conceptual metaphor as primarily a physical-to-nonphysical mapping where metaphors come “out of our clearly delineated and concrete experiences and allow us to construct highly abstract and elaborate concepts, like that of an argument” (Lakoff and Johnson 1980: 105). This section will suggest that nonphysical and highly abstract concepts are mapped back to the physical environment as a way to understand concrete experience with richer content and associations.

8.1 Is A BUILDING IS A BUILDING a metaphor?

The architectural theory corpus contains expressions with metaphors that seem to use the same source and target domain of BUILDINGS, either challenging the theory of conceptual metaphors or identifying an issue with the classification of knowledge in domains. The latter is more likely as it provides a simpler explanation but opens up considerations of how knowledge is assigned to a domain. In the introduction to this dissertation, questions of defining the domain of architecture as equivalent to references of physical buildings and building elements was raised (see Chapter 1.1). This was combined with questions considering the types of concepts identified as belonging to the domain of BUILDING AND CONSTRUCTION. The association of such diverse concepts as relational spatial attributes (*towering*), physical and functional states (*ruins*), physical building parts (*cornerstones*, *foundations*), dynamic forces (*support*, *stability*) and the process of construction (*piled up*, *built*) have been considered as part of BUILDING domain of knowledge by metaphor scholars

(Kövecses 2010). Yet there are problems with this understanding if we look at examples such as:

(125) the building appears almost *like an inhabited ruin* where only the most durable materials are left standing. (Allen 2000: 114)

The passage above clearly contains a metaphor as literal incongruence is present since an inhabited building cannot be a ruin. Yet, buildings and ruins have been considered to both be part of BUILDING AND CONSTRUCTION domain. This would make the source and the target domains the same, a violation of a central tenant of conceptual metaphor which requires a metaphor to use “a structure imported by another domain” (Lakoff and Turner 1989: 58). We can look at the classification of knowledge in order to resolve the conflict between a shared source and target domain. Rather than A BUILDING IS A BUILDING, the expression in (125) should be considered as FUNCTIONAL (BUILDING) IS DECAYED (BUILDING), although this is not very satisfying. It turns out that “ruin” has some particular and nuances meanings that are not easily defined through reducing to a domain label. As a physical event, *ruin* activates a sense of weathering in an expression of material lifecycle and of loss of function as an operational object. Considering *ruin* in this way shifts its domain category from being BUILDING (as a ruin) to being a process of time, performance, abandonment or decay (as ruined). These concepts are not easy to place in singular domain of knowledge. In the case of this example, the issue of what seems to be a metaphor with the same source and target domain of A BUILDING IS A BUILDING turns out to be a lack of precision of identifying the domain information. The other option is to consider the passage through the use of “like” in the comparison that indicates the presence of a figurative simile. If the author meant the comparison to be limited to only the appearance of the building rather than its occupation (or lack of occupation), then this expression is making a literal relationship through a cognitive simile.

A more straightforward example of an apparent domain conflict can be found in the next example:

- (126) just beyond the door, a path of concrete pavers skirts the garden wall.
The *pavers nest in the grass* like so many *stepping-stones*, and it seems appropriate to unlace our shoes, just in case (Cadwell 2007: 36)

The passage above contains two metaphorical expressions – “the pavers nest in the grass” and “[pavers are] like so many stepping-stones”. The first expression grants the pavers the ability to “nest”, as if the inert building elements were an animal bedding down for the night in long grass. This correlational metaphor obviously involves incongruence and two separate domains of knowledge – BUILDING ELEMENTS and ORGANISMS (THAT NEST). It is the second expression which contains the apparent conflict as paving stones and stepping stones are essentially the same thing. Both paving stones and stepping stones are building elements used on the ground plane to allow a human to walk across that surface with no inherent difference between them as objects. A PAVING STONE IS A STEPPING STONE might not be a metaphor at all since stepping stones can be a type of paving stone while paving stones separated from each other across a surface are literally stepping stones. However, the author means this to be a metaphor and the two terms for the same object draws attention to the context in which each is applied. The term *paving stone* is used to refer to a flat hard and smooth object placed into solid ground where *stepping stone* is used when the ground is soft, unstable or liquid. The metaphor that is created is not between the two types of paving stones but two types of ground, using the stones to consider a metaphorical context where grass is considered to be water. The conflict in domain identification is resolved by understanding that “[pavers are] like so many stepping-stones” is not using the metaphor A PAVING STONE IS A STEPPING STONE but rather is an instance of GRASS IS WATER, a specific level version of the correlational metaphor SOLID IS LIQUID.

The apparent conflict between domains in the metaphorical expressions found (125) and (126) can be explained as not being a mapping between buildings but between conditions that are independent to buildings. The categorization of knowledge in this way avoids the issue of an internal domain mapping. However, there are other expressions in the corpus where buildings are clearly both source and target domains. The identification of containing domains for individual concepts is exasperated in architecture due to the lack of clarity to its boundaries. The domain of ARCHITECTURE seems to be equivalent to the domain of BUILDING the two terms are found to be used interchangeably while both are often blurred with concepts of CONSTRUCTION (Grady 1997; Charteris-Black 2004; Kennedy 2008; Kövecses 2010). The term *architecture* without the association to buildings has been conventionalized to mean the structural and hierarchical organization of something as used in Cognitive Linguistics (Geeraerts and Cuyckens 2007) and other disciplines (for example, computer science and business). At the same time, while buildings are the traditional outcome of ARCHITECTURE, there is clearly many other types of information claimed by the discipline as part of its domain of knowledge, as evidenced through the chapters of this dissertation. Some of the more prevalent concepts are public/private, thresholds, movement through circulation, spatialized activities, environmental factors, cultural identity and conceptualizing formal relationships.

Even if a very narrow view is taken that equates ARCHITECTURE to BUILDING, the points above raise a question of domain association in how it pertains to references of buildings. This is important since the difference between the metaphorical and non-metaphorical content rests on this consideration. A non-metaphorical statement is one “understood and structured on its own terms – without making use of structure imported from a completely different conceptual domain” (Lakoff and Turner 1989: 57). Not all examples of metaphorical mappings that involved two concepts within the ARCHITECTURE domain of

knowledge can be easily resolved. In the next expression, there is clearly the use of one physical structure to understand another through the use of a metaphor:

(127) the concourse suddenly *turns into Casbah*: improvised locker rooms, coffee breaks, smoking, even real campfires (Koolhaas 2002: 181)

In this expression, the airport concourse is being mapped to a “Casbah” through the metaphor AN (AIRPORT) CONCOURSE IS A CASBAH. A Casbah²³ is the distinctive pattern and relationship between buildings that is found in historical context of North Africa²⁴. It can be argued that the airport is a building and a casbah is urban space, which would resolve the interdomain conflict by making the metaphor A BUILDING IS A CITY.

A closer examination of the type of information used in the mapping provides the key to understand the solution to this apparent conflict. The type of information involved in the expression does not map urban concepts to building concepts, relating a form or shape between the buildings of the casbah and the building of the airport concourse. Rather, the expression refers to a theoretical situation of airport expansion creating a dichotomy between the affluent who travel and the immigrant workers who build the airport. The mapping is not formal but social and cultural as a highly political statement that starts to infer everything from issues of labour, European immigration policy, clashes of national identity, and the economics of expansion. The metaphor uses the activities that occur (or can occur) within buildings through *program*²⁵ rather than formal composition. The metaphor maps the high

²³ Casbah is also written as Kasbah as Romanized Arabic, qasbah or qassabah in India and casbah in English.

²⁴ The definition of a kasbah alternates between a type of fortress or citadel and a small town or city. In architecture, the term is understood as a type of medina or old city quarter with the purpose of identifying a particular typo-morphological form involving building massing, circulation and programmatic activity.

²⁵ Program is an architectural concept that refers to the organization of activities and uses within a bounded area, be it a building, landscape or other aspect of the built environment.

density and public space of the historic city that stresses a large quantity of social interaction to the ordered and corporate space of the airport. The issue is that this expression can be taken literally rather than metaphorically – the airport concourse has become the social space of the casbah through the activities of the North African labourers which are simply moved from their traditional setting to the new context. While the literalness of the mapping might suggest a simile rather than a metaphor, “Casbah” is in fact a metonymy that stands in for complex socio-cultural interactions which are real events in real space. Rather than an interdomain conflict within a metaphor, this expression only looks like a metaphor.

There are examples of A BUILDING IS A BUILDING that do clearly the map information between knowledge objects that can be considered as part of the same domain, such as:

(128) Program elements erupt on the slab/concourse *like kiosks on a city street* (Kipnis 2013: 126)

The building discussed in (128) is the OMA project for the university libraries at Jussieu, Paris²⁶. This project uses a continuous sloping floor to connect multiple levels in a large building as the major design gesture. The design proposal highlights the sloping physical floor as a very important part of the building and as the dominant organizational element, which is a non-normative idea in building design. There are two metaphorical expressions present in (128) which relate to the floor, the first being the action of program elements which “erupt on the slab/concourse”, pushing up from the floor as an example of FORM IS ACTION. The tall and narrow shape of the kiosks give them a sense of sudden, vertical

²⁶ The Two Libraries at Jussieu was a 1992 project by Rem Koolhaas/Office for Metropolitan Architecture (OMA) for a technical university in Paris commissioned by the Ministère de l'Éducation Nationale et de la Culture. OMA chose not to stack the two libraries, one for science and the other for humanities, on top of each other but to create a continuous floor plan by making the building into a continuous ramp, much like a parking garage but for books rather than automobiles.

movement. The second metaphorical expression is “[program elements are] like kiosks on a city street” which uses an aspect of the built environment to understand another aspect of the built environment through the metaphor (PARTS OF) LIBRARIES ARE (PARTS OF) STREETS. The source content is the kiosk as a small building structure used to sell newspapers, magazines, food and other immediate, short-term sundries. This source is mapped to the target of small program elements in the library such as rooms (offices, group study, bathrooms) and objects (book shelves, study carrels, circulation desk). While kiosks might be considered part of the domain of URBAN DESIGN, they are not isolated to city streets but can be found within buildings as well, such as the small sales pods located inside shopping malls. Since kiosks and library rooms/furniture are both building elements, are of the same size and have a relationship in terms of use (display, holding smaller objects for consumption), this seems to be an instance of A BUILDING (ELEMENT) IS A BUILDING (ELEMENT).

The expression is clearly a metaphor as incongruence is present through understanding the physical housing of library program elements in the library as kiosks on a street. The expression uses shape relationships through resemblance information to map between the two types of content. The selection of the source domain of the street is coherent with larger design intentions of the project as the architect expressed that “rather than stacking one level on top of another, floor planes are manipulated to connect; thus, forming a single trajectory - much like an interior boulevard that winds its way through the entire building” (OMA 2017). In this statement, the program elements of the library and the kiosks of an urban street are considered to be in separate domains of knowledge although, at the same time, library rooms and street kiosks both belong to BUILDINGS as a domain. It is the urban context of the street that underlies this expression as a metaphor making the actual metaphor driving the expression to be A BUILDING IS A STREET. The inter-domain mapping

issue is avoided by requiring two aspects of the built environment to be considered as two separate domains of knowledge.

While the examples above first appear to be A BUILDING IS A BUILDING metaphors, they both resolve to involve different source and target domains in support of the theory of conceptual metaphors. The example (127) is not a metaphor but a metonymy while the following example (128) uses BUILDING and URBAN as two separate domains of knowledge. The next three quotations introduce as examples of A BUILDING IS A BUILDING which are not so easy to explain.

(129) the most *intimate room* is like *a theater box* (Colomina 1992: 79)

The expression above contains the metaphor A HOUSE IS A THEATRE by mapping between the private seating area in a theatre building to a room in a house, the boudoir meant for the female inhabitant. The architectural theorist obviously considers the expression a metaphor as it is presented to allow the reader to understand this as a comparison rather than a literal interpretation. Yet, the source and the target domain are the same, decomposed to A BUILDING (ROOM) IS A BUILDING (ROOM). How can a building or a building room be compared to another building or building room in a clear case of inter-domain mapping yet still be considered a metaphor? The same concern of inter-domain association occurs in the next example:

(130) its row of hotels named after Paris, New York, Luxor, Venice, Mandalay, Bellagio—hypertrophied but familiar evocations of place—recalling *antebellum mansions* or *yachts* named for some fondly remembered honeymoon spot (Sorkin 2002: 1)

In (130), a hotel is being compared to a mansion as well as to a yacht. The HOTEL IS A MANSION metaphor might be claimed as a shape-to-shape mapping focused on the outwards appearance of the hotel as an image metaphor, akin to A BUILDING (SHAPE) IS A FISH (SHAPE). However, when a building is compared to another building and a yacht within a single

expression, this cannot be an image metaphor as there is an inherent conflict between the shape of a mansion and the shape of a yacht. The expression produces two metaphors which are difficult to relate on casual observance, namely A BUILDING IS A BUILDING and A BUILDING IS A SHIP. The ship reference has little to do with conventionalized use of this concept which normally stresses a sense of motion, isolated containment and smoothness of travel. Instead, both the mansion and the ship are “named” objects and it is the sense of familiarity through naming which is the source of the metaphor. This does raise the question of what information is being compared as part of architectural discourse and if this is related to the classification of domain. The next example illustrates this issue:

(131) With this inventive composition, Ungers *elevated* the living room from just another room in the apartment to *a sort of atrium* (eliminating the corridor) (Aureli 2011: 182)

In the example above, the living room is “elevated” to a “sort of atrium” comparing one type of room by using another type of room which would resolve into two conceptual metaphors, namely HEIGHT IS IMPORTANCE and A BUILDING (ROOM) IS A BUILDING (ROOM). The first metaphor uses sensori-motor information of spatial location and vertical elevation to provide a qualitative reading of the second metaphor A LIVING ROOM IS AN ATRIUM as having a relationship to social status. By this, we can understand that an atrium as being a more socially important space when compared to a living room. Architects would identify this expression as being metaphorical and there is incongruence present as a living room is different to an atrium both in relationship to privacy and when considering room program typology.

The three passages above provide a series of clues to how the expressions can both be metaphors and seem to map within the single domain of knowledge of BUILDINGS. One approach would be to consider the mappings as an instance of GENERIC IS SPECIFIC, a

conceptual metaphor proposed to handle situations such as idioms and proverbs. The GENERIC IS SPECIFIC metaphor maps “a single specific-level schema onto an indefinitely large number of parallel specific-level schemas that all have the same generic-level structure as the source domain schema” (Lakoff and Turner 1989: 162). The classic example of this conceptual metaphor is the expression “my job is a jail” in which the source could be any term which activates a sense of an “involuntary, unpleasant, confining, punishing, unrewarding situation” (Glucksberg and Keysar 1993: 414). The use of “jail” as the activating term in the example is due to being a specific culturally accessible and salient example of the generic category of the loss of agency and mobility by an external factor. This explanation would require theatre boxes, mansions and atriums to be best-in-class specific examples of generic categories.

In support for this theory, the metaphors in the examples above violate directionality and can be considered as symmetrical in the same way as GENERIC IS SPECIFIC metaphors (Grady 2007b: 330-331). Directionality claims that we move from concrete experiences to abstract events (Lakoff and Johnson 1980: 112), so buildings are used to explain arguments but arguments are not used to explain buildings. Yet, in A BUILDING IS A BUILDING mappings, it is conceivable that each of the examples above could be reversed with a theatre box conceived as a boudoir (private sitting room?), a mansion being described as a hotel (lots of bedrooms?) or an atrium considered as a living room (full of couches and places to sit with a sense of privacy?). The important aspect of symmetrical metaphors is that the same type of domain knowledge is not involved when the direction of the metaphor is reversed (Grady 1997: 221). It becomes more important to understand *what aspects* of a domain is mapped rather than simply the domain itself.

There are issues with considering A BUILDING IS A BUILDING as an instance of GENERIC IS SPECIFIC, however. The first is that “it is difficult to make a clear distinction between GENERIC-IS-SPECIFIC metaphors and metaphors of the resemblance type” (Grady 2007b: 330).

What Grady noted was that instances of GENERIC IS SPECIFIC operate with the same conceptual structure as resemblance metaphors using a specific reference to activate concepts that are part of a generic class. This would make GENERIC IS SPECIFIC a category for a collection of associated metaphors rather than a conceptual metaphor itself, equivalent to any resemblance mapping that uses a specific reference to activate a larger concept. As such, there is nothing in this metaphorical structure which would explain how a building can be used to create a metaphor for another building nor why it is done so often in architectural discourse.

The second issue is if the examples (129) – (131) are cases of specific terms as the most salient examples of a general concept, what generic concepts do the specific examples of theatre box, mansion and atrium represent? None of these source domains are well understood as best-in-class examples of concepts with clearly defined salient features and one must remember that “salience of characteristics alone is not the answer, since (among other problems) salience can vary depending on context” (Sullivan and Sweetser 2010: 311). The theatre box, for example, is not a general cultural expression but being used to explain very specific architectural knowledge in this very specific situation.

The most likely resolution to metaphorical expressions that have a building or building room used as a source for another building or building room lies in the understanding of what domain information is being used in the mapping. If we examine the examples to understand what exactly is being mapped, we find the following:

- theatre box
 - cloistered space which provides full visibility to a target (stage) but without visibility or exposure.
 - activates issues of publicness and privateness
 - has a directional field of view and provided a clear focus to the organization of the space.

- mansion
 - historical reference to pre-war decadence
 - naming a large-scale luxury object to create an artificial sense of authenticity
- atrium
 - well connected (public) and large open space in a building
 - not normally found in residences unless a larger, more expensive building
 - is usually open to the sky or has skylights which provide a sense of openness and light

Each of the source terms have characteristics attached to them but these are not simple nor salient examples of a generic category. Concepts ranges from spatial characteristics with social status (atrium) to social interactions based in control (theatre box) and cultural interpretations through memory (mansion). None of the concepts are conventionally associated with the domain of BUILDING yet they are part of architecture as a disciplinary discourse. In architecture, this is considered part of typology or the relationship of social and cultural information to formal composition. Rooms are not just physical spaces but contain a large collection of associated concepts that are recognized by architects. Rather than the examples using A BUILDING IS A BUILDING as a metaphor, typological characteristics would consider each building and room type as bounding a set of specific physical characteristics and abstract ideas. The specificity of the content maintains a conceptual boundary in the same way as a domain. The question if this is actually a domain or some other form of conceptual structure is outside the scope of the current study.

Room and building types are thus conceived as isolated and specific knowledge domains rather than as an aspect of the BUILDING domain i.e. they have nothing to do with wood or steel framing, drywall, roofs, flooring material, etc. The point can be reinforced by considering a metaphorical expression in the corpus that uses the same knowledge relationship of comparing the intimate boudoir space of a domestic residence to a theatre box

in a public building found in (129). Rather than being a resemblance metaphor, however, this example uses correlational information.

(132) The *theater boxes* in the Moller and Muller houses are spaces marked as ‘*female*,’ the domestic character of the furniture contrasting with that of the adjacent ‘*male*’ space, the libraries (figure 9). In these, the leather sofas, the desks, the chimney, the mirrors, represent a ‘public space’ within the house - *the office and the club invading the interior* (Colomina 1992: 81)

The earlier example using the same context, (129), follows the general format of GENERIC IS SPECIFIC using the theatre box as a best-in-class example of a room composition that stresses privacy and directional internal-to-external visibility. As an expression, it is fairly straightforward and uses comparison in an easily identifiable semantic structure. In the passage above, (132), the same boudoir is referenced but the discussion extends into a larger context. The first metaphorical expression in the example, “The *theater boxes* in the Moller and Muller houses are spaces marked as ‘*female*’”, extends the previous metaphor of A BOUDOIR IS A THEATRE BOX, or A BUILDING (ROOM) IS A BUILDING (ROOM), to consider space having a gender through a personification. This metaphorical mapping is not based on GENERIC IS SPECIFIC but gives human social and biological identity to an inanimate space as a correlational metaphor that contains no similarity content. The second metaphorical expression in the example, “the office and the club *invading* the interior” is also a correlational metaphor and creates a mapping between the two public, commercial spaces of the workplace and the gentleman’s club to the private libraries in the house. The expression gives human agency to the abstract idea of the office/club and then sets up dynamic relationship between the office/club, the library rooms and the boudoir/theatre box through the personification of building spaces as gendered. The club as a bounded concept forces its way into the domestic interior as an intruding entity.

The use of personification and action motivates a correlational mapping in (132) as opposed to the resemblance metaphor found between the boudoir and the theatre box in (129). In the resemblance version of the expression, a few characteristics from the source domain are mapped directly onto aspects found in the target domain, creating a blend between the involved concepts. In the correlational version, the concept of the business office or gentlemen's club is clearly a separate entity. The metaphor does not blend the qualities of one space with the second but presents the source and target domains in conflict with each other. As such, the library and the club co-exist as separate entities in the same spatial location. The *invasion* of the club into the library suggests that the target domain of the library is being replaced wholesale by the source domain of the club. The choice of a correlational metaphor expressing human concepts of conflict through force dynamic schema is most likely reinforcing the intention of the author to consider the domestic house as a conflict between (negative) 'masculine' characteristic of violence and physical control with 'female' characteristics of privacy and voyeurism.

The introduction of the metaphoric expressions in (132) exemplifies how the room types are considered as discrete and bounded concepts by architects rather than being just physical walls and spaces in a building. In this example, the boudoir/theatre box, the library and the office/club all exist as independent entities with bounded qualities, individual identities and particular abilities. The only way this is possible is if the room and building types found in the metaphorical expressions are not references to concrete spaces but rather bounded abstractions that are associated with physical spaces. As an abstraction, the named rooms operate as metonymies for larger social and cultural ideas that organize form. The bounding of distinct abstract ideas linked to a building type creates a typological frame that acts as a domain. This allows one typological frame to be used as a source domain for another typological frame as a target domain. At the same time, both frames are associated with the

domain of ARCHITECTURE and manifest in physical examples of BUILDING or BUILDING ROOMS.

The other way to consider expressions that include a seemingly circular mapping between BUILDING and BUILDING is to consider the mapping of abstract typological architectural concepts not conceptual metaphors but cognitive similes. If an expression such as (132) is considered at the physical level, there is clearly incongruence as theatres are not houses and clubs are not offices, making these expressions metaphors. But if they are considered as abstractions, the mapping is a literal transfer between architectural concepts in one context reapplied in another context such as privacy, visibility, circulation, exposure, and so on. As such, the literalness of the association would make the expression a cognitive simile. For example, the domain mapping at an abstract concept level between a boudoir and a theatre box is the literal transfer of notions of privacy and view from the source domain to be applied in the target domain. The way that privacy works in the theatre box is exactly the same as the way privacy works in the boudoir. The use of view follows the same pattern with a literal reapplication of concepts and formal structures of visibility. In this case, the boudoir uses architectural principles that are found in both source and target domains making the mapping literal rather than metaphorical. While the boudoir is not a theatre box, the principles of the theatre box can be directly applied to the house without a metaphorical mapping.

The examination of the type of knowledge involved in mapping between buildings and building rooms illustrates a distinct difference between the abstract focus of ARCHITECTURE and the physical objects of BUILDING. To identify the metaphorical expressions in this section as being part of the metaphor A BUILDING IS A BUILDING is to misappropriate the nature of the mapping and the type of involved knowledge.

8.2 Suspension of scale between domains

The question of what makes a domain of knowledge within a discipline such as architecture is not the only one raised when examining metaphorical expressions used in architecture. A second point of discussion is the role, or lack of role, that scale plays in metaphors when addressing aspects of the physical environment. Scale in this sense means relative relationship in size rather than relative position on a gradient. There are many domain mappings that associate the built environment with physical actions and do not require the involvement of issues of scale. For example, metaphors are created by mappings between bounded aspects of cities and islands, building walls and woven textiles, as well as grass landscaping and carpets. As objects in different source and target domains, all could easily be objects of the same relative size. However, the dominant pattern for metaphors found in architecture are not between equal sized object but mappings between source terms of very small size used to discuss target terms of very large size. While metaphors are recognized by the incongruence they create between concepts, that incongruence does not seem to extend to issues of scale. The lack of difficulty in associating widely different sized elements suggests that metaphorical conceptual space is a scaleless environment.

The suspension of scale can be most easily seen in metaphorical expressions that map resemblances between small objects such as machines, artefacts, or bounded substances and large objects such as buildings. The following examples fall into this category:

- (133) the *house* itself *is a camera* pointed at nature. (Colomina 1992: 113)
- (134) hovering roof that shelters the house *like an umbrella* (Hartoonian 2006: 107)
- (135) The proliferation of *bubble* buildings, *bubble* furniture and *bubble* objects in the last decade is difficult to explain as a simple coincidence (Zaera Polo 2008: 78)

The expressions above use small objects to allow for a more enriched understand of buildings. The buildings either operate on the same principles as the small objects so a house is a system of capturing images through the comparison between the window and the camera lens in (133) or there is a mapping between images such as a roof being an umbrella in (132) and buildings with curved and integrated walls and roof are bubbles in (135). While buildings are large compared to the objects used in the metaphorical associations, there is no difficulty in understanding the relationship between source and target domains in these examples. The same process of small-to-large mapping can be seen in other target domains as well. A large environmental condition such as a *storm*, *wind* or *weather* as well as an environmental abstraction such as *ecology*, can be associated to body sized objects, such as:

(136) *Like stacked tables*, one [ecology] sits on top of the other. (Lerup 2001: 56)

The metaphor ECOLOGIES ARE STACKED TABLES bounds two aspects of the environment as abstract ecologies. The first is the ground plane of city and its tree canopy while the second is the bounded conceptualization of the atmosphere. This creates a perceived separation between the land below and the air above. The two ecologies are then understood through the metaphor of stacked tables, an easily recognizable formal relationship based in common experiences.

One explanation for the suspension of mapping in the above resemblance metaphors, especially those with image content, can be found in the proposal that humans employ objects in mappings based on familiarity. As such, objects are ones “usually commonly encountered, human-scale artifacts chosen for maximum familiarity and hence maximal explanatory power” (Risch 2008: 5). This theory is supported by corpus examples which commonly has large scale architectural and urban objects understood through projecting objects that have both a relationship with the human body and are commonly encountered. Once the city and

the atmosphere are understood as objects, the nested tables allows a familiar form to quickly describe a complex relationship.

Metaphors using very large objects as source domains to understand buildings are rare in the corpus. When it does occur, it is commonly experienced aspects of landscape shapes reduced to understand building form. The only two examples of this scale relationship in the corpus are:

(137) The exposed wooden structure of the roof floats over interior volumes while its sloping form echoes the *mountains of Malibu* (Hartoonian 2006: 111)

(138) The ceiling is a crumpled plate *like the Alps* (Koolhaas 2002: 181)

The metaphorical expressions above both use mountains as an object experienced at some distance for their iconic shape. Other than mountains, there are no other occurrences found in the architectural metaphors to use large objects to understand small objects. All other examples are based in comparison using a small, well-known object mapped to a large object or a conceived object in the built environment.

Transcalar mappings occur regardless to whether the metaphor is based in resemblance or correlational information. The following passages both use the same operation of joining small objects through the human action of stitching:

(139) spaces would tend to be defined and subsequently joined *like the pieces of a quilt*, (Evans 1997: 78)

(140) the installation's valiant efforts *to suture* everything back together were destined—indeed, designed—to fail (Lavin 2011: 76)

The first example (139) is a resemblance metaphor that uses HANDICRAFTS with the particular reference to QUILTING as the source domain to understand the relationship between enclosed spaces. The intention is to bring the pieces of space together to make a new, if patchworked, whole using the metaphor SPACE IS A QUILT and JOINING SPACES IS STITCHING FABRIC. The

major structure of the metaphor is through the figurative form of a simile with incongruity between spaces and quilt pieces. There is no incongruity between the size of a quilt and the size of a building, however. The second example, (140), also uses a situation of stitching but the source domain is the HUMAN BODY with a particular reference to SKIN. This metaphor is a correlational mapping between an organic body and objects in the environment of an exhibition (chairs, beds and walls) that contains no resemblance information. Regardless, the same intention is present – to bring small pieces together to make a whole through the metaphor JOINING SPACES IS STITCHING FLESH. The relative scale difference between the size room and the size of the metaphorical body is ignored in the correlational metaphor as well as the resemblance metaphor. The common thread that ties (139) and (140) together is the action of the human hand which is involved in both the sewing of a quilt and the suturing of flesh.

One hypothesis might be that scale is not suspended or ignored at all but the rather elements in the metaphorical structure are conceptually adjusted to a single, relational scale as part of the metaphor use. The conceptual environment created by the metaphorical expressions above consider all the elements through the relative association with a conceived human body. The body then acts as the standard for scale. Even though (139) uses the metaphor SPACE IS A QUILT and (140) uses BUILDING ELEMENTS ARE ORGANIC BODIES, the commonality between them is the action of a human to make both fabric and flesh pieces into a whole. In order for that action to be possible, the thing conceived must be able to be manipulated by the human hand and, therefore, at a scale in relation to that hand. In fact, all the examples so far in this section have this property – the camera (133), the umbrella (134), bubbles (135) and tables (136) are all objects which humans can manipulate, move, push, click and engage. The exception is the mountains (137 and 138) but these metaphors did not have any particular action ascribed to them and were used for their shape as an image value.

The hypothesis is supported by the presence of implied human hands found in metaphors without clearly defined source objects. These metaphors are part of how architects use metaphors to discuss the built environment and often operate through an action or the result of an action. The follow two examples consider the ability to manipulate the large scale built environment through the expression of action of a human hand as conventionalized in architectural discourse.

(141) these forms are not just *fragments scattered in the park*. (Aureli 2011: 192)

(142) the three units [of the condominium] are simultaneously *woven together* (Martin 2010: 161)

The two passages above are interpretations of the built environment through considering physical actions in conceptual interpretations, a continuation of the role of the architect as agent on the environment (c.f. chapter 6.2.2). In example (141), the very large buildings of a casino, villa, and pavilion and a series of small pagodas in the Parklandschaft Klein Glienicke²⁷ of Berlin are conceived as small objects arranged by the human hand. Even though the buildings were planned, zoned and constructed over years, they are interpreted as if objects temporarily cast onto the ground from the throw of a hand because they are “placed in the garden without any axial reference” (Aureli 2011: 192). In the next example, (142), three buildings are conceptually made into a whole through the circulation of the interior corridors rather than the exterior forms. The void space of the corridors is mapped to the

²⁷ The Parklandschaft Klein Glienicke was a 30-year project that started in 1824 under the direction of Prince Charles of Prussia. The design involved some of the most important architects and landscape architects in Germany at the time, including Karl Friedrich Schinkel and Peter Joseph Lenné. The park consists of extensive gardens with small buildings, pavilions, follies, furniture, sculptures and fountains interspersed without a strong grid or classical organization.

small physical objects of threads through SPACE IS A FABRIC and then manipulated by the hand into a new relationship. Again, this transgression of scale relationship creates no incongruence and goes essentially unnoticed. The buildings in (141) exist as large objects in the landscape while simultaneously being small objects thrown from the architect's hand. In the same way, the void space of the building corridors in (142) coexist as large passages and small threads.

A further example of the same operation can be found in the discussion of the proposed Josephine Baker's house (unbuilt)²⁸. In the example below, the passage is referring to a corridor surrounding an indoor swimming pool that has symmetrical details and windows on its inside and outside walls. The metaphorical interpretation of this area of the building is that the corridor is conceptually bounded and is considered a thick wall rather than a corridor. The architectural theorist describes it thus:

(143) [the wall] has been pulled apart, leaving a narrow passage surrounding the pool (Colomina 1992: 95)

Metaphorically, the corridor and its two walls are considered as originating as a thin, layered but single object that is "pulled apart" through FORM IS ACTION. The expression clearly implies the presence of human hands in manipulating the surroundings as if, impossibly, there was equivalency between a person's ability to act and the scale of the two sides of the wall. The metaphorically separated wall then involves another implied mapping. While the first metaphor is produced by a sense of action, it was used to allow the wall to maintain its sense of conceptual wholeness. Rather than two literal walls and a space between them, the metaphor produces conceptual one wall which is very wide. The result of the pulling apart

²⁸ The Josephine Baker house was a proposal (unbuilt) by Adolf Loos, an important turn-of-the-century architect involved in the shift between 19th century and Modernist positions in architectural theory. The house included an interior swimming pool on the third floor lit by skylights and a black-and-white horizontally striped façade.

creates a novel metaphor in this situation, namely A CORRIDOR IS A WALL. The inhabitant of the house is perceived to move through the ‘middle’ of the wall when it is really a circulation space that circles the pool. Whether the physical environment is reduced to an object able to be grasped by human hands or the human interpreter is projecting themselves into the much larger environment, the end result is the same since it transgresses issues of scalar relationships.

The examples in this section open up more questions beyond the initial question of transscalar relationships and suspension of size differences between source and target elements. The exploration suggests a hypothesis of why scale does not seem a factor in metaphorical structures. The references to the wall in (143) uses the past tense to describe the action – the wall is not being pulled apart but has *been* pulled apart. This refers not to the space itself but to the design process that created the space. The same is occurring with the circulation space that join the condominium buildings in (142). Rather than a metaphor between bounded space of the corridor and thread woven into a fabric as an object, the metaphor involves the action of weaving. Weaving is a time-based event that would have been a metaphorical action as part of the design process well before the building was constructed. When applied to a finished, physical building, the consideration of the physical object and the process of designing that object allows two different conceptual frames to be overlaid – the presence of the physical building and the manipulation by the hand of the architect as the conceptual actions which created the building. It is this second conceptual interpretation that reduces the built environment to the scale which can be controlled and manipulated by the human body.

The hypothesis put forward by this exploration is that transcalar association is possible because concrete objects and bounded spaces are not just physical but also exist as abstractions and a set of associated concepts. When the urban composition as scattered

fragments in (141), the corridors as woven fabric in (142) and the pulled-apart wall in (143) are considered by human cognition, they are conceptualized and brought into relationship with the human observer at the scale of the human body overlaid on the physical composition of form. The proposal requires an examination of the theory that we “typically conceptualize the nonphysical *in terms* of the physical (Lakoff and Johnson 1980: 59). Clearly architects are conceptualizing the physical in terms of the nonphysical.

8.3 Conceptualizing the physical in terms of the nonphysical

The hypothesis that metaphors used by architects to address the built environment operate as an association between nonphysical concepts as a way to understand the physical experiences is supported by evidences in both sections above. It does question the expectation that correlational metaphors move only from grounded concrete experiences to abstractions and “we conceptualize the less clearly delineated in terms of the more clearly delineated” (Lakoff and Johnson 1980: 59). The intention is not to claim that concrete experience is not used to understand the nonphysical, as metaphorical expressions in the architectural theory corpus support this premise. However, another common conceptualization occurs when architects address the built environment in terms of their disciplinary knowledge. As the nonphysical is conceptualized in terms of the physical, the physical is then re-conceptualized in terms of the nonphysical creating a more enriched experience or understanding²⁹. The presence of

²⁹ The process of understanding physical space in terms of intellectual content has been termed “respatialization” by Brook Muller (2009: 189) in an extension of Lakoff and Johnson’s original theory of spatialization metaphors (1980: 17). Muller recognizes the use of metaphors as part of design “inspiration” where the original metaphor opens up additional formal possibilities as a literal experience of the conceptual metaphor. His example of the Exeter Library by Louis Kahn discusses how LIGHT IS KNOWLEDGE produced the original building composition of moving from dark book stacks to light reading areas. Muller’s analysis then

nonphysical-to-physical correlational mapping does, at the very least, require an elaboration on the basic theory.

When the architect Le Corbusier “brings the negative space of the context into the spatial force-field of his own building” (Allen 2000: 104), he is not bringing the space itself but the idea of the space. When a theatre box in the examples above is used as a source domain for a boudoir, it is not the physical object of the room but the conceptual content of privateness, visibility, oversight, layering, and so on, bounded by the concept of the room type. The same is true for the other examples presented in this chapter as each space of the building is overlaid with disciplinary knowledge which includes both socio-cultural (status, identity, etc.) and physical associations (light, movement, etc.). In these cases, the environment is not simply considered as a physical object but as an abstraction of which the physical is an aspect.

Conceptual metaphors used in architecture involve isolating integrated aspects of the physical environment (both built and natural) through the creation of discreteness and formulations of conceived boundaries as abstractions. This creates multiple instances where elements in the built environment are commonly construed as separate to their context in order to be considered, interpreted or acted upon. Accordingly, that bounding includes an overlay of disciplinary knowledge about that isolated aspect (typological content) or understanding the isolated aspect as a representation of the intellectual ideas associated with it (*plan* as a disciplinary construct, *dwellings* as a philosophical idea). Even a fairly basic part of the built environment, such as a ramp, exists as both the object of the ramp and the concept

identifies several other formal moves (placement of the stacks, circulation, inside-outside relationship) which use light as an organizing concept to create a richer architectural experience. Respatialization is being used as an architectural concept in the design process rather than the cognitive operation addressed in this section.

of the ramp. When Stan Allen writes of the Le Corbusier's Carpenter Center for the Visual Arts, he considers that:

(144) The ramp does not so much *penetrate* the building, as *slip in between* its parts (Allen 2000: 104)

The physical ramp is an indivisible, integrated part of the building since the structure, construction and materiality of the ramp are a component of the rest of the building. Yet the ramp is being considered as a discrete part of the environment as if its integration did not exist (i.e. there is incongruence between perception and reality) through a mapping such as A (PHYSICAL) RAMP IS AN OBJECT. This metaphor does not make much sense as a ramp is literally a class of object – i.e. it is not a metaphor but a taxonomy. The point becomes that the ramp is not only a physical object but also a conceptual idea for architects, a doubling that is required if the ramp to be considered as a design element³⁰. As a *conceptually* discrete object which has a physical presence, there is a metaphor present, namely be A CONCEPT (RAMP) IS AN OBJECT which clearly maps between domains where (PHYSICAL) RAMP IS AN OBJECT does not. Once the ramp is an abstract concept, it can be correlated back to being an object, entity, substance or organism through standard metaphorical mappings. In (144), the ramp is an integrated aspect of the building, a discrete object that is in action (“penetrate”) and an organism in motion (“slip”) *at the same time*.

Once the physical is conceptualized in terms of the nonphysical, many other actions and abilities are available through metaphorical constructions. As the next example exemplifies, objects in the world have capacities through their abstract extensions:

(145) Some things (stairs, kitchens, hearths) *act as stable anchors* around which these social dynamics *are allowed to evolve* (Till 2009: 215)

³⁰ For an architect, this would be the idea of *rampness* or the *ontology of the ramp* as the intellectual ideas associated with the nature of ramps.

The elements in the example (“stairs, kitchens, hearths’) are not simply named parts of a building but each, in and by itself, is a separate, discrete object. That object has a series of entailments and associated conceptual content. As the ramp in (144) is both a physical ramp and the idea of a ramp, the stairs, individual rooms such as kitchens, and parts of rooms such as hearths maintain individual existence as concepts in the same way. The hearth, for example, contains ideas of centrality from typological associations, sociability and comfort on social levels and cultural concepts of family, nurturing and safety. The other physical objects are also conceptual complex with kitchens holding concepts of family, belonging, and nurturing while stairs activate accessibility, connectivity and dynamic voids combined with mobility.

Abstract concepts in architecture are not confined to content directly related to the spatial composition such as social issues of circulation or privacy. Many of the metaphors in the corpus use higher level, nonphysical concepts to map onto physical spaces. These include concepts such as *spirit, knowing, aspiration, experience, conviction, define, and condition of being* as abstract constructs developed through human social interaction, spirituality and purpose. These concepts based in human identity and aspirations are involved in many of the metaphorical mapping between PEOPLE and (ARCHITECTURAL) OBJECTS. They allow us to generate a relationship between humans, the larger context and effect of the object. The mapping from nonphysical concepts to understand physical space is the process that occurs when buildings and building spaces are personified. This includes metaphors that give life to buildings or cities to consider that they have conditions of health, can recuperate, get sick and die.

The overlay of a nonphysical concept on a physical space is used in architecture as a way to understand, interpret and judge our physical environment. Conceptualization of space

can be identified in disciplinary tools that are metonymies for a collection of associated ideas.

Schindler's Armon House in Mount Washington, California is described with:

- (146) an expressive roof and exposed wooden structure *shelter* an otherwise
a disjunctive plan where three volumes *penetrate* into each other.
(Hartoonian 2006: 112)

There are two metaphorical expressions in the example. The first is the sheltering of a “disjunctive plan” by an “expressive roof and exposed wooden structure”. The second is the “three volumes penetrate into each other”, an expression presented earlier in section 6.2.1 (example 93). The term ‘plan’ refers to the floor layout of a building but it includes more than just the physical dimensions. The example involves two metaphorical expressions that separates several aspects of the house into discrete objects including the physical structure, the roof, the layout of the floor below (“plan”) and from the contained space of the building (“volumes”). Some of the discrete objects are references to real physical things but others are clearly abstract concepts. The roof and the wooden structure exist physically but the plan is a conceptual abstraction. While both the roof and the building structure are clearly physically present and fully integrated into the building, they are also conceptually isolated from their context as discrete objects. Those objects are then enriched with an overlaid abstract content of identity. The floor layout (“plan”) is both a physical space and a conceptual idea for architects involving two-dimensional distribution of form on the ground plane but also ideas of movement, circulation, human activities and environmental qualities. The plan is isolated as a bounded conceptual idea and then mapped to an organism. The mapping is inferred through the need for “shelter”, something required for organic entities (CONCEPTS ARE ORGANISMS).

The second metaphorical expression in the example involves a metaphor in which volumes of space are being conceptually understood as objects (SPACE IS AN OBJECT). The

spaces are being perceived to not only have boundaries as objects but also force dynamics and implied movement and momentum (“penetrate”). The co-existence of elements of the built environment as a physical object and conceptualized entity is present when any aspect of our built environment is enriched with metaphorical content. While this includes additional abstract content, it also allows for human agency and personification.

The discussion in this chapter uses deep disciplinary architectural knowledge combined with metaphor analysis that introduces subtleties in how abstract information used as a source domain to understand buildings and building spaces. It is not simply the physical that is used to understand the nonphysical since once we move into human environments, nonphysical and abstract ideas are mapped back onto the physical as an enrichment of that context. This chapter will conclude with two examples that show the presence of a circular mapping between physical and nonphysical domains using the same domains in each. The hope is to bring some more clarity to the observations above without requiring the deep architectural knowledge of building typology and disciplinary conceptual overlays.

(147) There was a commonplace analogy in seventeenth-century literature that compared a man’s *soul to a privy chamber*, (Evans 1997: 74)

(148) These are intended to convey the essential *spirit of the building* and its programme (Buchanan 2012: 20)

In the first expression, (147), the building room type of the privy chamber is being used to understand the abstract concept of a human soul. A privy chamber is an English building term to refer to the private rooms of the King which holds personal staff, bedroom, library, and study. This is a space of influence as access to the chamber is access to the King, and therefore power. It is also a space of extreme privacy and heavily guarded. Thus, the metaphor is THE HUMAN SPIRIT IS A (PRIVATE) BUILDING. The next expression, (148), is discussing the interpretation of a building through considering it to have spiritual human capacities. The content being addressed is the building’s ability to engage memory,

atmosphere and temporal cultural associations. The metaphor is A BUILDING IS A HUMAN SPIRIT, a close inversion of the first example. In the first example, the building as a physical experience is used to understand an abstract idea of the human spirit. In the second example, the conventionalized metaphorical bounding of the conceptual idea of the human spirit is mapped back the physical existence of the building as a complex abstraction of human spiritual associations. The process of doing so allows the physical space to be enriched with more complicated human concepts.

A final question is raised by this hypothesis of abstract, nonphysical sources being used to understand concrete, physical targets, namely what is the role of image schema as the primary structure in metaphorical mappings? If all conceptual metaphors are built from foundational image schema, what schema is present in an expression such as “the house knows the rest of the world”? To say “the house knows” is obviously a metaphor based on BUILDINGS ARE PEOPLE as the house does not, and cannot, think nor has memory in a biological sense. However, in nonphysical to physical mappings, it seems that the knowledge reduces to more complex disciplinary and cultural gestalts rather than just sensori-motor schema. While this observation opens some interesting questions, they are currently beyond the current scope of the dissertation.

9. CONCLUDING REMARKS

This dissertation explores the discipline of architecture through an examination of the metaphors found in architectural theory texts. Theory in architecture is known to be factional in its defence and positioning towards unsubstantiated positions of personal or small group ideology (Johnson 1994). The corpus of architectural theory texts compiled for this study contained many of these diverse viewpoints connected by the commonality of the situated building in physical space. However, the metaphors found in the architectural corpus displayed a consistent tendency towards certain types of knowledge and source domains regardless to the specific article, author or ideology. These metaphors indicate a set of values and ways of thinking about the built environment that are not recognized, acknowledged or clearly addressed by architects.

Patterns in the corpus data indicate the substantial presence of source domains based in actions, interactions, types of motion and human capacities. Image schemas were present as building blocks associated with these concepts but when addressing metaphor interpretation, source content had a tendency towards more complex gestalts and higher functions such as identity, purpose and emotions, as presented in Chapter 5. Many of the metaphors present also infer the presence or projection from a human body onto nonhuman things, be it physical objects in the environment or abstract architectural concepts. These are inferred mappings rather than direct references to body parts such as *arms*, *head*, *torso*, *spine* or *heart*. The expected metaphorical sources using the shape or relational content of

machines, organisms and the human body are also present. While these metaphors are recognized by architects and are commonly acknowledged to be important, they are less common than the correlational metaphors based in actions, interactions and motion.

The most common type of metaphor in the corpus are those categorized as conventionalized and based in correlational motivations. However, the line between novel and conventionalized as well as resemblance and correlational categories was not as clear as is often assumed. Often several metaphors with different classification would be blended into a single expression. This can be seen in the discussion of the metaphor SKIN IS (BUILDING) ENCLOSURE in Chapter 6. In addition, many resemblance metaphors can be found to be both used knowingly and unknowingly while accessing the same source domains. In discourse situations, a resemblance metaphor is often built on a correlational structure, extending a primary metaphor for a nuanced semantic expression. The one exception was that it was extremely rare to find a correlational metaphor used in a novel and knowingly applied situation.

The line between strictly abstract concepts and physical objects was blurred in architectural texts. Architecture is a conceptually complex topic and does not simply refer to the construction process of a building as can be seen through the many examples of metaphorical expressions discussed throughout this dissertation. Many of the expressions in the corpus engage the building, the built environment and space defined by built objects as abstractions, using metaphors to grapple with deep disciplinary socio-spatial concepts including privacy, threshold, occupation, visibility, exposure and procession. As such, the findings of this research are in alignment with the definition of metaphor use in architectural discourse provided by Caballero (2006: 229). This definition considers metaphor as a tool to address the “difficult, elusive nature of space, and the complexities involved in its handling for human use”. Human use through the making of a human environment is a key point. As

discussed in Chapter 6, architecture's role as the adaptation of space for humans often operates through the projection of agency, human agency and personification into our surroundings. In this way, not only is the space made *for* humans, it is made *to be* a human.

Architectural priorities are less easily identified through metaphors found in theory texts. Some metaphors are clearly used as tools to explain and position architectural disciplinary ideas and aspects of the built environment. The ideological positions used by individual architects can be identified by the choice of source domains of metaphors, such as the intellectual conflicts between those architects who identify with machinic metaphors as opposed to those who support organic metaphors as source domains for design (c.f. Ballantyne 2011). However, metaphors used knowingly to communicate ideological positions have less significance in the corpus than the unrecognized correlational metaphors using actions, interactions and motion. This latter group of source domains is used to interpret and understand the built environment as opposed to present a position. These correlational metaphors are found throughout the texts regardless to ideological stance of the author. The result is not so much a clear priority but rather evidence of underlying values held by the architect (as a human) developed through the cognitive engagement with the environment. The common denominator for metaphorical expressions addressing architecture is the grounding of our understanding through the projection of ourselves into our environment. It could be theorized that we understand ourselves through our presence in the environment (Johnson 1987) and then we understand our environment as a metaphorical extension of ourselves.

The projection of ourselves into the environment returns our attention to questions raised in the introduction to this dissertation regarding the ability to engage qualitative factors and evaluation in architecture through metaphor. The interest originated through the proposed role of image schemas as an aspect of metaphors in embodied cognition (Johnson 2005;

Gibbs 2005). While image schemas seem fundamental to understanding metaphors, the focus is mostly on their structural relationship leaving open their role as a “motivating force, and relevance to human meaning” (Johnson 2005: 27). There is support to understand image schemas as experiential gestalts which are contextual based on organism state (Gibbs 2005) but there is also a concern that they are too skeletal to hold qualitative, evaluative content (Johnson 2005). The discussion of axiological theory in Chapter 7 does recognize that there are tendencies to understand image schemas as related to negative or positive poles but this can be affected, distorted and even reversed through discourse context. The meaning provided by image schemas is often too basic to operate as an important governing factor in issues of semantic meaning as part of discourse. Evaluative meaning was generally produced through the socio-cultural, richer and more complex gestalts such as IDENTITY, CONTROL, RELATIONSHIP, FREEDOM and EXISTENCE rather than sensori-motor information. Each of these concepts were then aligned with positive or negative outcomes generally based on the benefits to an individual.

The theory of axiology and aligning domains with the concepts of good and bad does raise a question; although one that is too complex to be addressed in this conclusion and remains open for future research. The construction of metaphors like UP IS GOOD or FORWARD IS GOOD seem to correlate two domains of knowledge with the target always being a statement of value. However, when looking at the richer gestalts that take the same form such as CONTROL IS GOOD or TO BE WHOLE IS GOOD, the relationship between the domains is causal rather than correlational. In these examples, to have control is literally good as control gives a real, concrete advantage and not just a metaphorical one. In this way, many of the expressions using GOOD and BAD as domains only look like metaphors but operate, instead, in the same way that CANDY IS GOOD is simply a statement of fact based in causality. If these expressions

simply look like metaphors, the question becomes whether GOOD and BAD are domains of knowledge or some other type of experiential construct?

The final question raised in the introduction asks if architecture is a clearly identified domain of knowledge when used as either a source or target for metaphors. This question originated by questioning the use of the terms ARCHITECTURE and BUILDING which seem to duplicate the same territory of knowledge. In addition, BUILDING and CONSTRUCTION are also often joined as being a single domain in cognitive linguistics literature (Kövecses 2010). Concepts assigned to the joined BUILDING AND CONSTRUCTION domain are shown in Chapter 1 to align with neither buildings or construction as containing domains when considering the context of the metaphorical expressions. These distinctions are important as metaphors must include a mapping of concepts between domains that create incongruence. The importance of domain boundary definition is reinforced in Chapter 8 as identifying domain membership clearly is important when expressions recognized to be metaphors by architects seem to have an interdomain mapping of BUILDINGS ARE BUILDINGS and A (BUILDING) ROOM IS A (BUILDING) ROOM. What becomes clear through the examples presented is that ARCHITECTURE does not cover the same domain territory as BUILDING. Rather, ARCHITECTURE as a domain consists of abstractions associated with building form rather than the forms themselves. The practice of generalizing concepts into generic domain categories sometimes confuses metaphor identification by misrepresenting the classification of involved concept. It also abandons any nuanced meaning held in the specific associations of the term rather than the general category (i.e. visibility and privacy patterns in room type creating a bounded frame rather than the general domain of ROOM).

Architecture is clearly a field of study and a domain of knowledge, one that is usually considered equivalent to the study of buildings and building assembly. Yet, it is clear that architecture contains more concepts and associated knowledge than is found in the BUILDING,

BUILT ENVIRONMENT or CONSTRUCTION domains when considering the evidence provided by the architectural texts. Much of the knowledge claimed by architecture has nothing to do with the fabrication of buildings but is synonymous with the interaction of the human body in the environment. This suggests why architects make claims to entire categories of image schemas and socio-spatial concepts as part of their domain of knowledge (see Section 1.1). Anything that is associated with the interaction of a human body in a human constructed context could thus be considered as part of architectural knowledge.

The expansive and human-focused information inferred through metaphor in architectural texts is also complex, nuanced, abstract, and highly specific to the application within architectural disciplinary discourse. An example is the conceptual metaphor A (BUILDING) ROOM IS A (BUILDING) ROOM. The association of two rooms or building types is understood by architects to be a metaphor. Yet, if this metaphor is identified through the surface information provided by an expression, such as the named presence of two rooms, there is a question raised by non-architects to what information is being associated through the metaphorical construction. We can understand that for architects, rooms are not just physical objects defining enclosed spaces but also a bounded collection of abstract concepts. There is little difficulty for the members of the architectural discipline to understand the complex meaning inferred when a room name is used as a metonymy for the associated salient but abstract characteristics it represents. This meaning is not transferred through a one-dimensional metaphor mapping between shapes but through layered correlational and resemblance metaphors to communicate more sophisticated concepts. As such, there is a significant risk of miscomprehending metaphor use in context if additional perspectives of knowledge structures are not considered. As suggested by Caballero (2006), ignoring or abandoning discourse context, cultural knowledge and disciplinary perspective from the

study of metaphor analysis thus seems highly problematic if meaning is part of the expected outcome.

Probably the most unexpected observation to come from analysis of the corpus is the hypothesis that nonphysical-to-physical mapping in metaphor is common in architecture. This understanding developed through the separate observations of interdomain mapping and suspension of scale in metaphorical expressions in the corpus, discussed in the sections of Chapter 8. The general theory of CMT has developed strong evidence that our cognition is embodied and uses physical aspects of our bodies and environment to understand more abstract concepts (Lakoff and Johnson 1980; Lakoff 1987; Johnson 1987). The architectural metaphoric expressions in the corpus support this position with many examples of sensori-motor and environmental experiences used to manipulate and communicate abstract concepts. However, architectural discourse also contains the reverse. Complex abstractions are mapped back to the physical environment as a way to understand that environment. The claim is not that this nonphysical-to-physical mapping always occurs as instances of FORM IS MOTION do not necessarily seem to involve conceptual overlays of content. Yet, the process is present when architectural disciplinary knowledge is applied to the built environment in order to consider how to design, interpret or discuss that context. The type of abstract information varies but clusters around concepts of agency, human agency and personification, as discussed in Chapter 6, and intellectualization of non-formal forces including environmental and social factors such as sunlight, visibility and privacy, as discussed in Chapter 8.

It seems undeniable from the corpus examples that architecture is intrinsically tied to buildings but also clear that buildings are only the outcome of the architectural process and not the discipline itself. The metaphors present in the texts are complex and move well beyond simple shape associations. While all metaphors contain image schema knowledge, many of the metaphors require cultural knowledge and more complex gestalts such as

identity and truth in order to be qualitatively interpreted. As a clear example of embodied cognition, architecture seems to be fertile ground for metaphor scholarship through the intellectual engagement with the physical environment as well as access to the cognitive process of shaping that environment. The metaphors involved in this process produce examples of how humans both consider the shaping of space as well as the interpretation of that space. One concern this is raised, however, is the requirement for discourse intentions, disciplinary knowledge and metaphor hierarchy to be involved in the analysis. Shown throughout this dissertation, it is easy to misunderstand the purpose of the metaphor without a careful examination of the situated context.

REFERENCES

- Aizawa, K. (1997). Explaining systematicity. *Mind & Language*, 12(2), 115-136.
doi:10.1111/j.1468-0017.1997.tb00065.x
- Alberti, L. B. (1486/1755). *The architecture of Leon Batista Alberti in ten books*. London: Edward Owen.
- Alberti, L. B. (1486/1991). *On the art of building in ten books*. Cambridge, Mass: MIT Press.
- Alexander, C. (1964). *Notes on the synthesis of form*. Cambridge, Mass: Harvard University Press.
- Allan, K. (2006). On groutnolls and nog-heads: A case study of the interaction between culture and cognition in intelligence metaphors. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 175-190). Berlin; New York: Mouton de Gruyter.
- Allen, S. (2000). Le Corbusier and modernist movement: The carpenter center for visual arts. *Practice: Architecture, technique and representation* (pp. 102-121). Amsterdam: G+B Arts.
- Ansari, I. (2013). Interview: Peter Eisenman. Retrieved from <http://www.architectural-review.com/view/interviews/interview-peter-eisenman/8646893.article>
- Applebaum, A. (2003). *Gulag: A history*. New York: Doubleday.
- Bafna, S. (2008). *How architectural drawings work: and what that implies for the role of representation in architecture* doi:10.1080/13602360802453327
- Ballantyne, A. (2002). *Architecture: A very short introduction*. New York: Oxford University Press.
- Ballantyne, A. (2011). Architecture, life, and habit. *Journal of Aesthetics and Art Criticism*, 69 (1), 43-49.
- Barnden, J. A. (2010). Metaphor and metonymy: Making their connections more slippery. *Cognitive Linguistics*, 21(1), 1-34. doi: DOI 10.1515/COGL.2010.001
- Behne, A. (1926/1996). *The modern functional building*. Santa Monica, CA: Getty Research Institute for the History of Art and the Humanities.

- Belogolovsky, V. (2016). *Conversations with Peter Eisenman: The evolution of architectural style*. Berlin: DOM Publishers.
- Berlage, H. P., & Whyte, I. B. (1996). *Hendrik Petrus Berlage: Thoughts on style, 1886-1909*. Santa Monica, CA: Getty Center for the History of Art and the Humanities.
- Blondel, J. (2004). Lessons on architecture (Vol. 1) (1771). In L. Lefaivre, & A. Tzonis (Eds.), *The emergence of modern architecture: A documentary history from 1000 to 1810* (pp. 388-395). New York: Routledge.
- Boffrand, G. (2003). In van Eck C. (Ed.), *Book of architecture containing the general principles of the art and the plans, elevations and sections of some of the edifices built in France and in foreign countries* (D. Britt Trans.). Burlington, VT: Ashgate.
- Boullée, É. (1953). Architecture, essay on art. In H. Rosenau (Ed.), *Papiers de E.-L. Boullée (ms. 9153) in the Bibliothèque Nationale, Paris* (S. de Vallée Trans.). (pp. 82-116). London: A. Tiranti.
- Bowdle, B. F., & Gentner, D. (2005). The career of metaphor. *Psychological Review*, 112(1), 193.
- Broccias, C. (2006). Cognitive approaches to grammar. In G. Kristiansen, M. Achard, R. Dirven & F. Ruiz de Mendoza (Eds.), *Cognitive linguistics: Current applications and future perspectives* (pp. 2-4). Berlin; New York: Mouton de Gruyter. doi:10.1016/S1074-7540(03)06001-X
- Buchanan, R. (1985). Declaration by design: Rhetoric, argument, and demonstration in design practice. *Design Issues*, 2(1), 4-22.
- Caballero, R. (2006). *Cognition and shared cultural models: The role of metaphor in the discourse of architects*. Berlin: Mouton de Gruyter.
- Caballero, R. (2011). Metaphor and genre as cultural and cognitive templates in disciplinary acculturation: The case of architecture students. *International Journal of Innovation and Leadership in the Teaching of Humanities*, 1, 45-63.
- Caballero, R. (2012). The role of metaphor in tennis reports and forums. *Text & Talk*, 32(6), 703-726. doi:10.1515/text-2012-0033
- Caballero, R. (2013). The role of metaphor in architects' negotiation and (re)construction of knowledge across genres. *Metaphor and Symbol*, 28(1), 3-21.
- Caballero, R. (2014). Language, space and body. sensing and construing built space through metaphor. In J. Bamford, F. Poppi & D. Mazzi (Eds.), *Space, place and the discursive construction of identity* (pp. 107-134). Bern: Peter Lang.
- Cameron, L. (2008). Metaphor and talk. In R. W. Gibbs (Ed.), *Cambridge handbook of metaphor and thought* (pp. 197-211). Cambridge; New York: Cambridge University Press.

- Cameron, L. (2010). Finding systematicity in metaphor use. In L. Cameron, & R. Maslen (Eds.), *Metaphor analysis: Research practice in applied linguistics, social sciences and the humanities* (pp. 116-146). London: Equinox.
- Cameron, L. (2010). What is metaphor and why does it matter? In L. Cameron, & R. Maslen (Eds.), *Metaphor analysis: Research practice in applied linguistics, social sciences and the humanities* (pp. 3-25). London: Equinox.
- Cameron, L., & Maslen, R. (2010). Identifying metaphors in discourse data. In L. Cameron, & R. Maslen (Eds.), *Metaphor analysis: Research practice in applied linguistics, social sciences and the humanities* (pp. 87-115). London: Equinox.
- Cameron, L., Maslen, R., Todd, Z., Maule, J., Stratton, P., & Stanley, N. (2009). The discourse dynamics approach to metaphor and metaphor-led discourse analysis. *Metaphor and Symbol*, 24(2), 63-89. doi:10.1080/10926480902830821
- Carbonell, J. G., & Minton, S. (1983). *Metaphor and common-sense reasoning*. Pittsburg: School of Computer Science, Carnegie Mellon University Repository.
- Carpo, M. (2001). *Architecture in the age of printing: Orality, writing, typography and printed images in the history of architectural theory*. Cambridge; London: The MIT Press.
- Casakin, H. (2007). Metaphors in design problem-solving: Implication for creativity. *The International Journal of Design*, 1(2), 23-35.
- Casakin, H. (2011). Metaphorical reasoning and design expertise: A perspective for design education. *Journal of Learning Design*, 4(2), 29-39.
- Casakin, H. (2013). Metaphorical reasoning and design creativity: Consequences for practice and education. In D. Villani, & A. Antonietti (Eds.), *Encyclopedia of creativity, invention, innovation and entrepreneurship* (pp. 1260-1267) Springer. doi:10.1007/978-1-4614-3858-8
- Casakin, H., & Goldschmidt, G. (1999). Expertise and the use of visual analogy: Implications for design education. *Design Studies*, 20(2), 153-175. doi:10.1016/S0142-694X(98)00032-5
- Casakin, H., & van Timmeren, A. (2015). Analogies as creative inspiration sources in the design studio: The teamwork. *Athens Journal of Architecture*, 1(1), 51-63.
- Charteris-Black, J. (2004). *Corpus approaches to critical metaphor analysis*. New York: Palgrave Macmillan.
- Ching, F. D. K. (2007). *Architecture - form, space, and order*. Hoboken: John Wiley & Sons.
- Cienki, A. (1997). Some properties and groupings of image schemas. In M. Verspoor, K. D. Lee, & E. Sweetser (Eds.), *Lexical and Syntactical Constructions and the Construction of Meaning* (pp. 3-15). Amsterdam/Philadelphia: John Benjamins.

- Cienki, A. (2005). Image schemas and gesture. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 421-441). Berlin: Mouton de Gruyter.
- Cienki, A., & Müller, C. (2008). Metaphor, gesture and thought. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 483-501). New York: Cambridge University Press.
- Clarke, G., & Crossley, P. (2000). Introduction. In G. Clarke, & P. Crossley (Eds.), *Architecture and language: Constructing identity in European architecture c. 1000-1650* (pp. 1-19). Cambridge: Cambridge University Press.
- Clausner, T. C., & Croft, W. (1999). Domains and image schemas. *Cognitive Linguistics*, 10(1), 1-31. doi:10.1515/cogl.1999.001
- Clausner, T. C. (2005). Image schema paradoxes: Implications for cognitive semantics. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 93-110). Berlin: Mouton de Gruyter.
- Collins, P. (1965/2003). *Changing ideals in modern architecture 1750-1950* (2nd ed.). Montreal, Kingston, London, Ithaca: McGill-Queen's University Press.
- Collins, P. (1971). *Architectural judgement*. London: Faber.
- Conway, H., & Roenisch, R. (2005). *Understanding architecture: An introduction to architecture and architectural theory*. New York: Routledge.
- Coulson, S. (2006). Conceptual blending in thought, rhetoric, and ideology. In G. Kristiansen, M. Achard, R. Dirven & F. Ruiz de Mendoza (Eds.), *Cognitive linguistics: Current applications and future perspectives* (pp. 187-208). Berlin; New York: Mouton de Gruyter.
- Cousins, M. (1994). The ugly [part 3]. *AA Files, Autumn*, 65-68.
- Coyne, R. (2005). Wicked problems revisited. *Design Studies*, 26(1), 5-17. doi: 10.1016/j.destud.2004.06.005
- Coyne, R., & Snodgrass, A. (1992). Models, metaphors and the hermeneutics of designing. *Design Issues*, 9(1), 56-74. doi: 10.2307/1511599
- Coyne, R., & Snodgrass, A. (1995). Prevalent within setting problem of design metaphors. *Design Issues*, 11(2), 31-61.
- Coyne, R., Snodgrass, A., & Martin, D. (1994). Metaphors in the design studio. *Journal of Architectural Education*, 48(2), 113-125. doi:10.2307/1425318
- Croce, B. (1922). *Aesthetic as science of expression and general linguistic* (2d ed.). London: Macmillan.
- Croft, W., & Cruse, D. A. (2004). *Cognitive linguistics*. Cambridge: Cambridge University Press.

- Crowhurst, S. H. (1974). A house is a metaphor. *Journal of Architectural Education*, 27(2), 35-4153.
- De Souza, C. S. (2005). *The semiotic engineering of human-computer interaction (acting with technology)*. Cambridge, MA; London: MIT Press.
- Deane, P. D. (2005). Multimodal spatial representation: On the semantic unity of over. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 235-282). Berlin: Mouton de Gruyter.
- Deignan, A. (2006). The grammar of linguistic metaphors. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 106-122). Berlin; New York: Mouton de Gruyter.
- Deignan, A. (2008). Corpus linguistics and metaphor. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (). Cambridge, New York: Cambridge University Press.
- Dewell, R. B. (2005). Dynamic patterns of CONTAINMENT. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 369-393). Berlin: Mouton de Gruyter.
- di Mari, A., & Yoo, N. (2012). *Operative design: A catalog of spatial verbs*. Amsterdam: BIS Publishers.
- Di Palma, V. (2006). Architecture and the organic metaphor. *The Journal of Architecture*, 11(4), 385-390. doi:10.1080/13602360601037644
- Dirven, R., & Ruiz de Mendoza, F. (2010). Looking back at 30 years of cognitive linguistics. In E. Tabakowska, M. Choinski & L. Wiraszka (Eds.), *Cognitive linguistics in action: From theory to application and back* (pp. 13-70). Berlin; New York: Walter de Gruyter.
- Dodge, E., & Lakoff, G. (2005). Image schemas: From linguistic analysis to neural grounding. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 57-91). Berlin: Mouton de Gruyter.
- Dong, A. (2007). The enactment of design through language. *Design Studies*, 28(1), 5-21. doi: 10.1016/j.destud.2006.07.001
- Donougho, M. (1987). The language of architecture. *Journal of Aesthetic Education*, 21(3), 53-67.
- Downing, F. (1992). Conversations in imagery. *Design Studies*, 13(3), 291-319. doi:10.1016/0142-694X(92)90224-X
- Durand, J. (1802/2000). *Partie graphique des cours d'architecture faits a l'ecole royale polytechnique depuis sa réorganisation; English: Précis of the lectures on architecture; with graphic portion of the lectures on architecture*. Los Angeles, CA: Getty Research Institute.

- Eisenman, P. (1998). Aspects of modernity: Maison dom-ino and the self-referential sign. In K. M. Hays (Ed.), *Oppositions reader: Selected readings from a journal for ideas and criticism in architecture, 1973-1984* (pp. 189-198). New York: Princeton Architectural Press.
- Eisenman, P. (1999). *Diagram diaries*. New York, NY: Universe Publishing.
- Eisenman, P. (2004). *Inside out: Selected writings 1963 - 1988*. New Haven: Yale University Press.
- Evans, R. (1997). Figures, doors and passages. *Translations from drawing to building and other essays* (pp. 55-91). London: Architectural Association Publications.
- Feldman, J. A. (2006). *From molecule to metaphor: A neural theory of language*. Cambridge, Mass.: MIT Press.
- Fez-Barrington, B. (2011). An architectural history of metaphors. *AI and Society*, 26(1), 103-111. doi:10.1007/s00146-010-0280-8
- Fillmore, C. J. (1982/2006). Frame semantics. In D. Geeraerts, R. Dirven & J. R. Taylor (Eds.), *Cognitive linguistics: Basic readings* (pp. 111-137). Berlin; New York: Mouton de Gruyter.
- Fisher, S. (2015). Philosophy of architecture. In E. N. Zalta (Ed.), *Stanford Encyclopedia of Philosophy*. Retrieved from <<https://plato.stanford.edu/archives/win2016/entries/architecture/>>.
- Forceville, C J. (Ed.) & Urios-Aparisi, E. (Ed.) (2009). *Multimodal Metaphor*. Berlin, Boston: De Gruyter Mouton
- Forceville, C. J., & Renckens, T. (2013). The GOOD IS LIGHT and BAD IS DARKNESS metaphors in feature films. *Metaphor and the Social World*, 3(2), 160-179.
- Forty, A. (2000). *Words and buildings, A vocabulary of modern architecture*. London: Thames & Hudson.
- Gandelsonas, M. (1998). From structure to subject: The formation of an architectural language. In K. M. Hays (Ed.), *Oppositions reader* (pp. 200-223). New York: Princeton Architectural Press.
- Geeraerts, D. (2006a). Introduction: A rough guide to cognitive linguistics. In D. Geeraerts, R. Dirven & J. R. Taylor (Eds.), *Cognitive linguistics: Basic readings* (pp. 1-28). Berlin; New York: Mouton de Gruyter.
- Geeraerts, D. (2006b). Methodology in cognitive linguistics. In G. Kristiansen, M. Achard, R. Dirven & F. Ruiz de Mendoza (Eds.), *Cognitive linguistics: Current applications and future perspectives* (pp. 21-49). Berlin; New York: Mouton de Gruyter.
- Geeraerts, D., & Cuyckens, H. (2007). Introducing cognitive linguistics. In D. Geeraerts, & H. Cuyckens (Eds.), *The Oxford handbook of cognitive linguistics* (pp. 3-21). Oxford; New York: Oxford University Press.

- Geeraerts, D., Dirven, R., & Taylor, J. R. (2006). *Cognitive linguistics: Basic readings*. Mouton de Gruyter.
- Gelernter, M. (1995). *Sources of architectural form: A critical history of western design theory*. Manchester; New York: Manchester University Press.
- Gentner, D., & Bowdle, B. (2008). Metaphor as structure-mapping. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 109-128). Cambridge; New York: Cambridge University Press. doi:10.2307/1130388
- Gentner, D., Bowdle, B. F., Wolff, P., & Boronat, C. (2001). Metaphor is like analogy. *The Analogical Mind: Perspectives from Cognitive Science*, (pp. 199-253). doi:10.1.1.5.5863
- Gentner, D., Falkenhainer, B., & Skorstad, J. (1988). Viewing metaphor as analogy. In D. H. Helman (Ed.), *Analogical reasoning: Perspectives of artificial intelligence, cognitive science, and philosophy* (pp. 171-177). Dordrecht: Springer Science+Business Media.
- Gentner, D., & Markman, A. B. (1997). Structure mapping in analogy and similarity. *American Psychologist*, 52(1), 45-56. doi:10.1037//0003-066X.52.1.45
- Gentner, D., & Toupin, C. (1986). Systematicity and surface similarity in the development of analogy. *Cognitive Science*, 10, 277-300.
- Gibbs, R. W. (1994). *The poetics of mind: Figurative thought, language, and understanding*. New York: Cambridge University Press.
- Gibbs, R. W. (2005). The psychological status of image schemas. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 113-135). Berlin: Mouton de Gruyter.
- Gibbs, R. W. Jr. (2006). Cognitive linguistics and metaphor research: Past successes, skeptical questions, future challenges. *DELTA: Documentação De Estudos Em Lingüística Teórica E Aplicada*, 22(Especial), 1-20. doi:10.1590/S0102-44502006000300003
- Gibbs, R. W., Jr. (2008). Metaphor and thought: The state of the art. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 3-13). Cambridge; New York: Cambridge University Press.
- Gibbs, R. W., & Colston, H. L. (2006). Image schema. In D. Geeraerts, R. Dirven & J. R. Taylor (Eds.), *Cognitive linguistics: Basic readings* (239-268). Berlin; New York: Mouton de Gruyter.
- Gibbs, R. W., Costa Lima Paula Lenz, & Francozo, E. (2004). Metaphor is grounded in embodied experience. *Journal of Pragmatics*, 36(7), 1189-1210. doi: 10.1016/j.pragma.2003.10.009
- Gibbs, R. W., & Matlock, T. (2008). Metaphor, imagination, and simulation psycholinguistic evidence. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 161-176). Cambridge, New York: Cambridge University Press.

- Giedion, S. (1941/1971). *Space, time, and architecture: The growth of a new tradition* (5th ed.). Cambridge, Mass.: Harvard University Press.
- Giora, R. (2008). Is metaphor unique? In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 143-160). Cambridge; New York: Cambridge University Press.
- Glucksberg, S. (2008). How metaphors create categories - quickly. In R. W. Gibbs (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 67-83). Cambridge; New York: Cambridge University Press.
- Glucksberg, S., & Keysar, B. (1993). How metaphors work. In A. Ortony (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 401-424). Cambridge; New York: Cambridge University Press.
- Goatly, A. (1997). *The language of metaphors*. London; New York: Routledge.
- Goldschmidt, G., & Sever, A. L. (2011). Inspiring design ideas with texts. *Design Studies*, 32(2), 139-155. doi: 10.1016/j.destud.2010.09.006
- Grady, J. E. (1997). *Foundations of meaning: Primary metaphors and primary stress*. (Unpublished Department of Linguistics). UC Berkeley, Berkeley.
- Grady, J. E. (2005). Image schemas and perception: Refining a definition. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 35-55). Berlin: Mouton de Gruyter.
- Grady, J. E. (2007a). Metaphor. In D. Geeraerts, & H. Cuyckens (Eds.), *The Oxford handbook of cognitive linguistics* (pp. 188-213). Oxford, New York: Oxford University Press.
- Grady, J. E. (2007b). A typology of motivation for conceptual metaphor: Correlation vs . resemblance. In V. Evans, B. K. Bergen & J. Zinken (Eds.), *The cognitive linguistics reader* (pp. 316-334). London; Oakville: Equinox Publishing.
- Grady, J. E., & Johnson, C. (2003). Converging evidence for the notions of subscene and primary scene. In R. Dirven, & R. Pörings (Eds.), *Metaphor and metonymy in comparison and contrast* (pp. 533-554). Berlin: Mouton de Gruyter.
- Gropius, W. (1965). *The new architecture and the Bauhaus (Neue architektur und das Bauhaus)*. Cambridge: Mass., M.I.T. Press.
- Gropius, W. (1974). *Scope of total architecture*. New York: Collier Books.
- Hampe, B. (2005). Image schemas in cognitive linguistics: Introduction. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 1-12). Berlin: Mouton de Gruyter.
- Hanks, P. (2006). Metaphoricity is gradable. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 17-35). Berlin; New York: Mouton de Gruyter.

- Harries, K. (1998). *The ethical function of architecture*. Cambridge, MA: MIT Press.
- Hartoonian, G. (2006). Frank Gehry: roofing, wrapping and wrapping the roof. *Crisis of the object: The architecture of theatricality* (pp. 104-132). Oxon, New York: Routledge.
- Haser, V. (2005). *Metaphor, metonymy, and experientialist philosophy: Challenging cognitive semantics*. Berlin; New York: Mouton de Gruyter.
- Hays, K. M. (1984). Critical architecture: Between culture and form. *Perspecta*, 21, 14-29.
- Hays, K. M. (1998). *Oppositions reader: Selected readings from a journal for ideas and criticism in architecture, 1973-1984*. New York: Princeton Architectural Press.
- Hays, K. M. (2000). *Architecture theory since 1968*. Cambridge, Mass: The MIT Press.
- Hearn, M. F. (2003). *Ideas that shaped buildings*. Cambridge, Mass.: The MIT Press.
- Herbert, D. M. (1988). Study their drawings properties medium in design: Architectural graphic. *Journal of Architectural Education*, 41(2), 26-38.
- Hilpert, M. (2006). Keeping an eye on the data: Metonymies and their patterns. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 123-151). Berlin; New York: Mouton de Gruyter.
- Hogarth, W. (1810). *The analysis of beauty. written with a view of fixing the fluctuating ideas of taste*. London: R. Scholey.
- Holl, S., (Ed.). (1998). *Pamphlet architecture 1-10*. New York: Princeton Architectural Press.
- Hollander, J. (1996). The poetry of architecture. *Bulletin of the American Academy of Arts and Sciences*, 49(5), 17-35. doi:10.1017/CBO9781107415324.004
- Hollier, D. (2000). Architectural metaphors. In K. M. Hays (Ed.), *Architecture theory since 1968* (pp. 190-197). Cambridge, Mass: The MIT Press.
- Hurtienne, J., & Blessing, L. (2007). Metaphors as tools for intuitive interaction with technology. *Metaphorik.De*, 12, 21-52.
- Hvattum, M. (2006). 'Unfolding from within': Modern architecture and the dream of organic totality. *The Journal of Architecture*, 11(4), 497-509.
- Ibelings, H. (2002). *Supermodernism: Architecture in the age of globalization*. Rotterdam: NAI Publishers.
- Isabel, D. V. O. (2001). Metaphor, metonymy, and image-schemas: An analysis of conceptual interaction patterns. *Journal of English Studies*, 3(December), 47-63.
- Jencks, C. (2000). Jencks' theory of evolution, an overview of 20th century architecture. *The Architectural Review*,

- Johnson, M. (1987). *The body in the mind. the bodily basis of meaning, imagination, and reason*. Chicago: University of Chicago Press.
- Johnson, M. (2005). The philosophical significance of image schemas. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (pp. 15-33). Berlin: Mouton de Gruyter.
- Johnson, M. (2007). *The meaning of the body: Aesthetics of human understanding*. Chicago: University of Chicago Press.
- Johnson, N. (1992). Metaphor and design. *Studies in Art Education*, 33(3), 144-153. doi: 10.2307/1320896
- Johnson, P. (1994). *The theory of architecture: Concepts, themes & practices*. New York: Van Nostrand Reinhold.
- Kanekar, A. (2010). Between drawing and building. *The Journal of Architecture*, 15(6), 771-794. doi: 10.1080/13602365.2011.533543
- Karatani, K. (1995). *Architecture as metaphor: Language, number, money* (S. Kohso Trans.). Cambridge; London: MIT Press.
- Kazmierczak, E. T. (2003). Design as meaning making: From making things to the design of thinking. *Design Issues*, 19(2), 45-59. doi: 10.1162/074793603765201406
- Kennedy, J. M. (2008). Metaphor and art. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 447-461). Cambridge; New York: Cambridge University Press.
- Kieltyka, R. (2008). Axiological bias in semantics. *Studia Anglica Resoviensia*, 5, 36-44.
- Kimmel, M. (2004). Metaphor variation in cultural context: Perspectives from anthropology. *European Journal of English Studies*, 8(3), 275-294. doi: 10.1080/1382557042000277395
- Kimmel, M. (2005). Culture regained: Situated and compound image schemas. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 285-311). Berlin: Mouton de Gruyter.
- Kimmel, M. (2008a). Image schemas in narrative macrostructure. In J. Auracher, & W. van Peer (Eds.), *New beginnings in literary studies* (pp. 158-184). Newcastle: Cambridge Scholars Publishing.
- Kimmel, M. (2008b). Metaphors and software-assisted cognitive stylistics. In S. Zyngier, M. Bortolussi, A. Chesnokova & J. Aurache (Eds.), *Directions in empirical literary studies* (pp. 193-210). Amsterdam: John Benjamins.
- Kimmel, M. (2008c). Properties of cultural embodiment: Lessons from the anthropology of the body. *Body, Language and Mind*. Berlin: Mouton de Gruyter.

- Kimmel, M. (2009). Analyzing image schemas in literature. *Cognitive Semiotics*, 9(5), 159-188. doi: 10.3726/81609_159
- Kimmel, M. (2010). Why we mix metaphors (and mix them well): Discourse coherence, conceptual metaphor, and beyond. *Journal of Pragmatics*, 42(1), 97-115. doi: 10.1016/j.pragma.2009.05.017
- Kimmel, M. (2012). Optimizing the analysis of metaphor in discourse. *Review of Cognitive Linguistics*, 10(1), 1-48.
- Kimmel, M. (2013). The arc from the body to culture: How affect, proprioception, kinesthesia, and perceptual imagery shape cultural knowledge (and vice versa). *Integral Review*, 9(2)
- Kintsch, W. (2008). How the mind computes the meaning of metaphor: A simulation based on LSA. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 129-142). New York: Cambridge University Press.
- Koller, V. (2006). Of critical importance: Using electronic text corpora to study metaphor in business media discourse. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 237-266). Berlin; New York: Mouton de Gruyter.
- Koller, V., Hardie, A., Rayson, P., & Semino, E. (2008). Using a semantic annotation tool for the analysis of metaphor in discourse. *Metaphorik.De*, 15, 141-160.
- Kövecses, Z. (2010). *Metaphor: A practical introduction*. New York: Oxford University Press.
- Kruft, H. (1994). *A history of architectural theory: From Vitruvius to the present*. London; New York: Zwemmer; Princeton Architectural Press.
- Krzeszowski, T. P. (1990). The axiological aspect of idealized cognitive models. In B. Lewandowska-Tomaszczyk, & J. Tomaszczyk (Eds.), *Meaning and lexicography* (pp. 135-165). Amsterdam: John Benjamins.
- Krzeszowski, T. P. (1993). The axiological parameter in preconceptual image schemata. In R. A. Geiger, & B. Rudzka-Ostyn (Eds.), *Conceptualizations and mental processing in language*. (pp. 307-329). Berlin; New York: Mouton de Gruyter.
- Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago: University of Chicago Press.
- Lakoff, G. (1990). The invariance hypothesis: Is abstract reason based on image-schemes? *Cognitive Linguistics*, 1(1), 39-74.
- Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (2nd ed., pp. 203-251). New York: Cambridge University Press.

- Lakoff, G. (2008). The neural theory of metaphor. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 17-38). New York: Cambridge University Press.
- Lakoff, G., Espenson, J., & Schwartz, A. (1991). *Master metaphor list* (Second Draft Edition ed.). Berkeley: University of California at Berkeley.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. New York: Basic Books.
- Lakoff, G., & Turner, M. (1989). *More than cool reason: A field guide to poetic metaphor*. Chicago: University of Chicago Press.
- Lattimore, R. (1947). *The Odes of Pindar*. Chicago: The University of Chicago Press.
- Laugier, M. (1977). *An essay on architecture (1753)* [Essai sur l'Architecture] (W. Herrmann, A. Herrmann Trans.). Los Angeles: Hennessey & Ingalls, Inc.
- Lavin, S. (2011). Current kisses. *Kissing architecture* (pp. 65-113). Princeton: Princeton University Press.
- LaVine, L. (2008). *Constructing ideas: Understanding architecture*. Dubuque: Kendall/Hunt Publishing Company.
- Le Corbusier. (1986). *Towards a new architecture*. New York: Dover Publications.
- Le Corbusier, & Jeanneret, P. (1971). Five points towards a new architecture (1926). In U. Conrads (Ed.), *Programs and manifestos in twentieth century architecture* (M. Bullock Trans.). (pp. 99-101). Cambridge: MIT Press.
- Leach, N. (1997). *Rethinking architecture: A reader in cultural theory*. New York: Routledge.
- Lefavre, L., & Tzonis, A. (2004). *The emergence of modern architecture: A documentary history from 1000 to 1810*. London; New York: Routledge, Taylor & Francis Group.
- Lerup, L. (2001). Stim and dross: Rethinking the metropolis. *After the city* (pp. 47-63). Cambridge: The MIT Press.
- Libeskind, D, TEDx Talks & TEDxDublin. (2012, September 8th, 2012). *Architecture is a language: Daniel Libeskind*. [Video/DVD] Dublin:
- Logan, C. (2007). Metaphor and pedagogy in the design practicum. *International Journal of Technology and Design Education*, 18(1), 1-17. doi: 10.1007/s10798-006-9009-x
- Low, G. (2008). Metaphor and education. In R. W. Gibbs Jr. (Ed.), *The Cambridge handbook of metaphor and thought* (pp. 212-231). New York: Cambridge University Press.

- Mandler, J. M. (2005). How to build a baby III: Image schemas and the transition to verbal thought. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 137-163). Berlin: Mouton de Gruyter.
- Mansilla, P. Ú. (2003). Metaphor at work: A study of metaphors used by European architects when talking about their projects. *Ibérica*, (5), 35-48.
- Martin, J. H. (2006). A corpus-based analysis of context effects on metaphor comprehension. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 214-236). Berlin; New York: Mouton de Gruyter.
- McClung, W. A. (1981). The matter of metaphor: Literary myths of construction. *Journal of the Society of Architectural Historians*, 40(4), 279.
- McEwen, I. K. (2003). *Vitruvius: Writing the body of architecture*. Cambridge: MIT Press.
- McGlone, M. S. (2007). What is the explanatory value of a conceptual metaphor? *Language and Communication*, 27(2), 109-126. doi: 10.1016/j.langcom.2006.02.016
- McLaughlin, B. P. (2009). Systematicity redux. *Synthese*, 170(2), 251-274. doi:10.1007/s11229-009-9582-0
- Melles, G. (2008). New pragmatism and the vocabulary and metaphors of scholarly design research. *Design Issues*, 24(4), 88-101. doi: 10.1162/desi.2008.24.4.88
- Mitchell, W. J. (1990). *The logic of architecture: Design, computation and cognition*. Cambridge, MA: MIT Press.
- Moloney, J. (2011). Literal and notional force fields in architecture. *The Journal of Architecture*, 16(2), 213-229. doi: 10.1080/13602365.2011.570096
- Morris, W. (1891). *News from nowhere; an epoch of rest, being some chapters from a utopian romance*. Boston: Roberts.
- Muller, B. (2009). Metaphor, environmental receptivity, and architectural design. In G. Backhaus, & J. Murungi (Eds.), *Symbolic landscapes* (pp. 185-199). New York: Springer.
- Navarro-Ferrando, I., & Vandeloise, C. (2005). Image schemas vs. complex primitives in cross-cultural spatial cognition. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 343-366). Berlin: Mouton de Gruyter.
- Nesbitt, K. (1996). *Theorizing a new agenda for architecture: An anthology of architectural theory, 1965-1995* (1st ed.). New York: Princeton Architectural Press.
- O'Donnell, C. (2015). *Niche tactics: Generative relationships between architecture and site*. Oxon; New York: Routledge.

- Oakley, T. (2005). Force-dynamic dimensions of rhetorical effect. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 443-473). Berlin: Mouton de Gruyter.
- Oakley, T. (2010). Image schemas. In D. Geeraerts, & H. Cuyckens (Eds.), *Handbook of cognitive linguistics* (pp. 214-235) Oxford University Press.
- OMA, The Office of Metropolitan Architecture. *Jussieu – Two libraries*. Retrieved from <http://oma.eu/projects/jussieu-two-libraries>
- Oxman, R. (1999). Educating the designerly thinker. *Design Studies*, 20(2), 105-122. doi: 10.1016/S0142-694X(98)00029-5
- Oxman, R. (2002). The thinking eye: Visual re-cognition in design emergence. *Design Studies*, 23(2), 135-164. doi: 10.1016/S0142-694X(01)00026-6
- Oxman, R. (2004). Think-maps: Teaching design thinking in design education. *Design Studies*, 25(1), 63-91. doi: 10.1016/S0142-694X(03)00033-4
- Palladio, A. (1570/1997). *The four books on architecture*. Cambridge, Mass: MIT Press.
- Pallasmaa, J. (2005). *The eyes of the skin: Architecture and the senses*. Chichester: Wiley Academic.
- Panther, K., & Thornburg, L. L. (2007). Metonymy. In D. Geeraerts, & H. Cuyckens (Eds.), *The oxford handbook of cognitive linguistics* (pp. 236-263). Oxford; New York: Oxford University Press.
- Paradis, C. (2006). Cognitive grammar. In D. Geeraerts, R. Dirven & J. R. Taylor (Eds.), *Cognitive linguistics: Basic readings* (pp. 1-8). Berlin; New York: Mouton de Gruyter.
- Partington, A. (2006). Metaphors motifs and similes across discourse types: Corpus-assisted discourse studies (CADS) at work. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 267-304). Berlin; New York: Mouton de Gruyter.
- Plowright, P. (2014). *Revealing architectural design: Methods, frameworks & tools*. Oxon: Routledge.
- Popova, Y. (2005). Image schemas and verbal synaesthesia. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 395-419). Berlin: Mouton de Gruyter.
- Pragglejaz Group (2007). MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, 22(1), 1-39. doi: 10.1207/s15327868ms2201{_1
- Proctor, R. (2006). Architecture from the cell-soul: René Binet and Ernst Haeckel. *The Journal of Architecture*, 11(4), 407-424. doi: 10.1080/13602360601037818

- Radden, G., & Kövecses, Z. (1999). Towards a theory of metonymy. In K. Panther, & G. Radden (Eds.), *Metonymy in language and thought* (pp. 17-59). Amsterdam; Philadelphia: John Benjamins Publishing Company.
- Rakova, M. (2003). *The extent of the literal*. New York: Palgrave Macmillan.
doi:10.1057/9780230512801
- Richardson, D., Spivey, M. J., Edelman, S., & Naples, A. J. (2001). "Language is spatial": Experimental evidence for image schemas of concrete and abstract verbs. Paper presented at the *Proceedings of the 23rd Annual Meeting of the Cognitive Science Society*, 873-878. Retrieved from <http://conferences.inf.ed.ac.uk/cogsci2001/pdf-files/0845.pdf>
- Risch, J. S. (2008). On the role of metaphor in information visualization. *CORR - Computing Research Repository, 0809.0*, 1-20. doi: 10.1177/1473871611415996
- Rohrer, T. (2006). Three dogmas of embodiment: Cognitive linguistics as a cognitive science. In G. Kristiansen, M. Achard, R. Dirven & F. Ruiz de Mendoza (Eds.), *Cognitive linguistics: Current applications and future perspectives* (pp. 119-146). Berlin; New York: Mouton de Gruyter.
- Rohrer, T. (2005). Image schemata in the brain. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 165-196). Berlin: Mouton de Gruyter.
- Ruiz de Mendoza Ibáñez, Francisco José, & Pérez Hernández, L. (2011). The contemporary theory of metaphor: Myths, developments and challenges. *Metaphor and Symbol, 26*(3), 161-185. doi: 10.1080/10926488.2011.583189
- Ruskin, J. (1886). *The stones of Venice*. New York: Wiley.
- Salinas, N. (2014). A theory of architecture part 1: Pattern language vs. form language. Retrieved from <http://www.archdaily.com/488929/a-theory-of-architecture-part-1-pattern-language-vs-form-language/>
- Sant'Elia, A., Caramel, L., & Longatti, A. (1988). *Antonio Sant'elia, the complete works*. New York: Rizzoli.
- Saunders, W. S. (2007). Accept, resist, or inflect? Architecture and contemporary capitalism. In W. S. Saunders (Ed.), *The new architectural pragmatism* (pp. vii-xvii). Minneapolis; London: University of Minnesota Press.
- Schmitt, R. (2005). Systematic metaphor analysis as a method of qualitative research. *The Qualitative Report Volume, 10*(2), 358-394.
- Scully, V. J., & Levine, N. (2003). *Modern architecture and other essays*. Princeton, NJ: Princeton University Press.
- Seligmann, K., & Seligmann, C. (1977). Architecture and language: Notes on a metaphor. *Journal of Architectural Education, 30*(4), 23-27.

- Semino, E. (2006). A corpus-based study of metaphors for speech activity in British English. In A. Stefanowitsch, & S. T. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 36-62). Berlin; New York: Mouton de Gruyter.
- Semper, G. (1860/2004). *Style in the technical and tectonic arts; or, practical aesthetics* (H. F. Mallgrave Trans.). Los Angeles: Getty Publications.
- Serlio, S. (1537/1982). *The five books of architecture: An unabridged reprint of the English edition of 1611* (Dover ed.). New York: Dover Publications.
- Smith, K. (Ed.). (2012). *Introducing architectural theory*. Oxon, New York: Routledge.
- Snodgrass, A., & Coyne, R. (2006). *Interpretation in architecture: Design as a way of thinking*. New York: Taylor & Francis.
- St. Amant, R., Morrison, C. T., Chang, Y., Cohen, P. R., & Beal, C. (2006). An image schema language. *The Proceedings of the 7th International Conference on Cognitive Modelling* Trieste, Italy. 292-297.
- Steen, G. J. (2011). The contemporary theory of metaphor - now new and improved! *Review of Cognitive Linguistics*, 9(1), 26-64.
- Stefanowitsch, A. (2004). HAPPINESS in English and German: A metaphorical-pattern analysis. In M. Achard, & S. Kemmer (Eds.), *Language, culture, and mind* (pp. 137-149) CSLI Publications.
- Stefanowitsch, A. (2006). Words and their metaphors: A corpus-based approach. *Corpus-based approaches to metaphor and metonymy* (pp. 61-105)
- Stefanowitsch A., & Gries S. T. (2006) Corpus-based approaches to metaphor and metonymy. In Stefanowitsch A., Gries S. T. (Eds.), *Corpus-Based Approaches to Metaphor and Metonymy* (pp. 1-16). Berlin; New York: Mouton de Gruyter.
- Sullivan, K., & Sweetser, E. (2010). Is "generic is specific" a metaphor? *Meaning, form and body* (pp. 309-328) Retrieved from <http://www.linguistics.berkeley.edu/~sweetser/SullivanSweetser09.pdf>
- Sullivan, L. (1918/2012). *Kindergarten chats and other writings (documents of modern art)*. New York: Dover Publications.
- Summerson, J. (1978). *The classical language of architecture*. Cambridge: MIT Press.
- Sykes, A. K. (Ed.). (2010). *Constructing a new agenda: Architectural theory 1993-2009*. New York: Princeton Architectural Press.
- Talmy, L. (1998). The relation of grammar to cognition. In B. Rudzka- Ostyn (Ed.), *Topics in cognitive linguistics* (pp. 165-205). Amsterdam; Philadelphia: John Benjamins.
- Talmy, L. (2005). The fundamental system of spatial schemas in language. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 199-234). Berlin: Mouton de Gruyter.

- Talmy, L. (2006). Grammatical construal. In D. Geeraerts, R. Dirven & J. R. Taylor (Eds.), *Cognitive linguistics: Basic readings* (69-108). Berlin; New York: Mouton de Gruyter.
- Talmy, L. (2007). Attention phenomena. In D. Geeraerts, & H. Cuyckens (Eds.), *The oxford handbook of cognitive linguistics* (pp. 264-293). Oxford;New York: Oxford University Press.
- Till, J. (2007). Architecture and contingency. *Field*, 1(1), 120-135.
- Till, J. (2009). The selfless plan. *Pattern, purpose, place: The work of Proctor and Matthews* (pp. 209-217). London: Black Dog Publishing.
- Tomes, A., Oates, C., & Armstrong, P. (1998). Talking design: Negotiating the verbal-visual translation. *Design Studies*, 19, 127-142. doi: 10.1016/S0142-694X(97)00027-6
- Tschumi, B. (1994). *Architecture and disjunction*. Cambridge, Mass: MIT Press.
- Tseng, M. (2007). Exploring image schemas as a critical concept: Toward a critical-cognitive linguistic account of image-schematic interactions. *Journal of Literary Semantics*, 36(2), 135-157. doi: 10.1515/JLS.2007.008
- Tversky, B., & Lee, P. (1998). How space structures language. *Spatial Cognition*, 157-176. doi: 10.1007/3-540-69342-4_8
- Valenzuela, J. (2008). Methods in cognitive linguistics. *Annual Review of Cognitive Linguistics*, 6, 302-310. doi: 10.1075/arcl.6.13val
- Veale, T. (2003). Systematicity and the lexicon in creative metaphor. *Proceedings of the ACL Workshop on Figurative Language and the Lexicon*, 28-35. doi: 10.3115/1118975.1118979
- Venturi, R. (1990). *Complexity and contradiction in architecture* (2nd ed.). New York; New York: Museum of Modern Art in association with the Graham Foundation for Advanced Studies in the Fine Arts, Chicago; Distributed by Harry N. Abrams.
- Vignola, & Mitrovic, B. (1562/1999). *Canon of the five orders of architecture*. New York: Acanthus Press.
- Viollet-le-Duc, E. (1990a). In Hearn M. F. (Ed.), *The architectural theory of Viollet-le-Duc: Readings and commentary*. Cambridge, Mass: MIT Press.
- Viollet-le-Duc, E. (1990b). *The foundations of architecture: Selections from the dictionnaire raisonné* (1st ed.). New York: G. Braziller.
- Vitruvius Pollio, M. (1914). In Morgan M. H., Warren H. L. (Eds.), *Vitruvius, the ten books on architecture*. Cambridge: Harvard University Press.
- Vitruvius Pollio, M., & Granger, F. S. (1962). *Vitruvius, on architecture*. Cambridge, Mass.: Harvard University Press.

- Wagner, O. (1902/1988). *Modern architecture: A guidebook for his students to this field of art*. Santa Monica, Calif: Getty Center for the History of Art and the Humanities.
- Wallington, A. M. (2010). Systematicity in metaphor and the use of invariant mappings. In G. Low, Z. Todd, A. Deignan & L. Cameron (Eds.), *Researching and applying metaphor in the real world* (pp. 209-244). Amsterdam, Philadelphia: John Benjamins Publishing Company.
- Watson, D. (1984). Model, metaphor and paradigm. *Journal of Architectural Education*, 37(3/4), 4-9. doi: 10.1017/CBO9781107415324.004
- Whyte, W. (2006). How do buildings mean? Some issues of interpretation in the history of architecture. *History and Theory*, 45(2), 153-177. doi: 10.2307/3874104
- Wright, F. L. (1953). *The future of architecture*. New York: Horizon Press.
- Wright, F. L. (1992). *Frank Lloyd wright collected writings, vol. 1: 1894-1930*. New York: Rizzoli.
- Zinken, J. (2007). Discourse metaphors: The link between figurative language and habitual analogies. *Cognitive Linguistics*, 18(3), 445-466. doi: 10.1515/COG.2007.024
- Zinken, J., Hellsten, I., & Nerlich, B. (2008). Discourse metaphors. *Body, Language and Mind*, 2, 363-386. doi: 10.1515/COG.2007.024
- Zlatev, J. (2005). What's in a schema? bodily mimesis and the grounding of language. In B. Hampe, & J. E. Grady (Eds.), *From perception to meaning: Image schemas in cognitive linguistics* (Cognitive ed., pp. 313-341). Berlin: Mouton de Gruyter.
- Zumthor, P. *Thinking architecture* (2010th ed.). Basel; Boston; Berlin: Birkhäuser Architecture.

APPENDIX A: ARCHITECTURAL THEORY CORPUS

- Allen, S. (2000). Le Corbusier and modernist movement: The carpenter center for visual arts. *Practice: Architecture, technique and representation* (pp. 102-121). Amsterdam: G+B Arts.
- Aureli, P. V. (2011). The city within the city. In C. C. Davidson (Ed.), *The possibility of an absolute architecture* (pp. 177-227). Cambridge: The MIT Press.
- Ballantyne, A. (2011). Architecture, life, and habit. *Journal of Aesthetics and Art Criticism*, 69(1), 43-49.
- Benedikt, M. (1987). *For an architecture of reality*. New York: Lumen Books.
- Buchanan, P. (2012). The big rethink: Lessons from Peter Zumthor and other living masters. *The Architectural Review*, September (1387), 83-93.
- Cadwell, M. (2007). Swimming at the Querini Stampalia Foundation. *Strange details* (pp. 3-46). Cambridge: The MIT Press.
- Colomina, B. (1992). The split wall: Domestic voyeurism. In B. Colomina (Ed.), *Sexuality & space* (pp. 73-128). New York: Princeton Architectural Press.
- Eisenman, P. (1986). miMISes READING: Does not mean A THING. In J. Zukowsky (Ed.), *Mies reconsidered: His career, legacy, and disciples* (pp. 86-98). New York: Rizzoli.
- Evans, R. (1997). Figures, doors and passages. *Translations from drawing to building and other essays* (pp. 55-91). London: Architectural Association Publications.
- Hartoonian, G. (2006). Frank Gehry: roofing, wrapping and wrapping the roof. *Crisis of the object: The architecture of theatricality* (pp. 104-132). Oxon, New York: Routledge.
- Hays, K. M. (1984). Critical architecture: Between culture and form. *Perspecta*, 21, 14-29.
- Hill, J. (2006). Centuries of ambiguity: Sublime and beautiful weather at the Farnsworth house. In J. Rendell, J. Hill, M. Fraser & M. Dorrian (Eds.), *Critical architecture* (pp. 170-181). Oxon, New York: Routledge.
- Jones, W. (2001). Stillness. *Oz Journal*, 23
- Kipnis, J. (2013). Recent Koolhaas. In A. Maymind, & C. C. Davidson (Eds.), *A question of qualities: Essays in architecture* (pp. 115-145). Cambridge: MIT Press.
- Koolhaas, R. (2002). Junkspace. *October*, 100(Spring), 175-190.

- Kwinter, S. (2008). The geometry of cinders. *Far from equilibrium* (pp. 164-175). Barcelona, New York: Actar.
- Lavin, S. (2011). Current kisses. *Kissing architecture* (pp. 65-113). Princeton: Princeton University Press.
- Leach, N. (2002). Belonging: Towards a theory of identification with place. *Perspecta*, 33, 126-133.
- Lerup, L. (2001). Stim and dross: Rethinking the metropolis. *After the city* (pp. 47-63). Cambridge: The MIT Press.
- Lynn, G. (1998). Differential gravities. In G. Lynn (Ed.), *Folds, bodies & blobs: Collected essays* (pp. 95-108). Brussels: La Lettre volée.
- Martin, R. (2010). Architecture. *Utopia's ghost: architecture and postmodernism, again* (pp. 147-179). Minneapolis: University of Minnesota Press.
- Schumacher, P. (1999). Rational in retrospect - reflections on the logic of rationality in Recent Design. *AA Files* 38, Annals of the Architectural Association School of Architecture, 32-36.
- Somol, R. E. (1999). IntraCenter: The seduction of the similar. *Assemblage*, 40, 68-79.
- Sorkin, M. (2002). Brand aid or, the Lexus and the Guggenheim (further tales of the notorious B.I.G.ness). *Harvard Design Magazine*, (17), 1-5.
- Till, J. (2009). The selfless plan. *Pattern, purpose, place: The work of Proctor and Matthews* (pp. 209-217). London: Black Dog Publishing.
- Tostrup, E. (2006). A critical Architectural Icon and its Contextual Argumentation. In J. Rendell, J. Hill, M. Fraser & M. Dorrian (Eds.), *Critical architecture* (pp. 269-278). Oxon, New York: Routledge.
- Tschumi, B. (1994). Violence of architecture. *Architecture and disjunction* (pp. 121-140). Cambridge: The MIT Press.
- Vidler, A. (2000). Building in empty spaces: Daniel Libeskind and the postspatial void. *Warped space* (pp. 235-242). Cambridge: The MIT Press.
- Wigley, M. (1998). Whatever happened to total design. *Harvard Design Magazine*, (5), 1-8.
- Zaera Polo, A. (2008). The politics of the envelope: A political critique of materialism. *Volume*, 17, 76-105.

APPENDIX B: METAPHORS AND IMAGE SCHEMAS

This appendix includes a list of all the identified conceptual metaphors, primary metaphors and image schemas identified in the architectural corpus that are associated with architectural target domains. The image schemas are organized by previously published categories while both primary metaphors and conceptual metaphors are presented by their containing frames. Conceptual metaphors are also further divided by the presence of evaluative connotation.

B.1 Image Schemas

Basic

ENTITY
OBJECT
SUBSTANCE
SPACE
ABOVE/BELOW
ALIGNMENT
BEHIND
BESIDE
BETWEEN
CENTER/PERIPHERY
CONTACT
FOREGROUND-BACKGROUND (FIGURE/GROUND)
FRONT/BACK
LEFT/RIGHT
LOCATION
NEAR/FAR
ORIENTATION
OVER-UNDER
PROXIMITY
STRAIGHT
UP/DOWN
VERTICAL ORIENTATION/LACK OF VERTICAL ORIENT.

Spatial motion

FORWARDS/BACKWARDS
INWARDS/OUTWARDS
MOMENTUM
PATH
ROTATION
SPEED (FAST/SLOW)

Shape relationships

INDENTATION
PROTRUSION

Force

ATTACHMENT
ATTRACTION
BEND/FOLD
BLOCKAGE
COMPRESSION
COMPULSION
CONNECTION
CONTRACTION
COUNTERFORCE
DISCONNECTION
DIVERSION
ENABLEMENT
EXPANSION
FLOAT
FLOW
FORCE
FRAGMENTATION
IMPACT
INTERSECTION
PENETRATION
PLASTICITY
PRESSURE
PROJECTION
PULL
PUSH
REMOVAL OF RESTRAINT
RESISTANCE
RESTRAINT
RIPPLE
ROLL
SEPARATION
SLICE

SLIPPAGE
STRAIN
TEAR (RIP)
TENSION
TWISTING
WEAVE

Containment

BOUNDARY/EDGE
CONTAINER
CONTENT
FULL/EMPTY
IN/OUT
OPEN/CLOSED
SURFACE
WRAP

Balance

BALANCE

Attribute

BIG/SMALL
DARK/BRIGHT
DEEP/SHALLOW
DISTINCT/OBSCURE
DRY/WET
FIXED/FLUID
HARD/SOFT
HEAVY/LIGHT
HUED/DULL
LENGTH (EXTENDED TRAJECTOR)
LOOSE/TIGHT
LOUD/SILENT
MAT/REFLECTIVE
MORE/LESS
NEW/OLD
OPAQUE/TRANSPARENT
SHARP/BLUNT (POINT BASED)
SCALE
SHARP/BLUNT (POINT BASED)
SHARP/DULL (LINE BASED)
SHORT/TALL
SMOOTH/TEXTURED (PATTERN)
SMOOTH / ROUGH
SOLID/VOID
SOLIDITY/INSUBSTANTIAL

STRAIGHT/CURVED
STRAIGHT/CROOKED
STRONG/WEAK
THIN/DENSE
THIN/THICK
TRANSITORY/PERSISTENT
WARM/COLD

Identity

ISOLATION
MATCHING
ORDER-DISORDER
STRUCTURE/LACK OF STRUCTURE
SUPERIMPOSITION

Multiplicity

COLLECTION
COUNT/MASS
ITERATION
LAYERING
LINKAGE
MERGING
PART/WHOLE
REPETITION
SEQUENCE
SPLITTING (DIVISION)
STACKING

Existence

AGENT
CONTINUITY
COVER
CYCLE
CYCLIC CLIMAX
DECAY
GOAL
PRESENCE (MANIFESTATION)
PROCESS
REMOVAL
RISK/REWARD
SOURCE

B.2 Conceptual Metaphors (non-evaluative)

The metaphors listed below are grouped by theme rather than whether they are primary or conceptual. They are provided here to establish both the large range of metaphors present in architectural discourse but also how most of them are founded in body experience.

Abstractions

ACTIVITIES ARE OBJECTS
AMOUNT OF STRUCTURE OR STABILITY IS QUALITY OF EFFECT OR ABILITY TO INFLUENCE
CONCEPTUAL CONNECTION IS PHYSICAL CONNECTION
CONCEPTUAL EVENTS ARE ACTIONS
CONCEPTUAL EVENTS ARE BODY EVENTS
CONCEPTUAL EVENTS ARE PHYSICAL SPACES [SPACES ARE CONTAINERS]
CONCEPTUAL IDEAS ARE CONTAINERS (SURFACE, VOLUME, DISCRETENESS)
CONCEPTUAL IDEAS ARE DISEASES
CONCEPTUAL IDEAS ARE FOOD AND NUTRITION
CONCEPTUAL IDEAS ARE FORMS OF ENERGY
CONCEPTUAL IDEAS ARE LANDSCAPES OR TERRITORIES
CONCEPTUAL IDEAS ARE LIGHT (TYPE OF, PROJECTED ONTO, REVEALING WITH)
CONCEPTUAL IDEAS ARE PHYSICAL LIQUIDS
CONCEPTUAL IDEAS ARE PHYSICAL OBJECTS
CONCEPTUAL IDEAS ARE PHYSICAL ORGANISMS
CONCEPTUAL IDEAS ARE SOUNDS
CONCEPTUAL IDEAS ARE WEATHER EVENTS (WIND, RAIN, STORM, ETC)
CONCEPTUAL IDEAS HAVE PHYSICAL LOCATIONS AND ORIENTATIONS
CONCEPTUAL INFLUENCE/WORK IS A PHYSICAL ACTION
CONCEPTUAL INTERPRETATIONS ARE PHYSICAL EFFECT
CONCEPTUAL NEEDS ARE PHYSICAL NEEDS
CONCEPTUAL PROPERTIES ARE PHYSICAL PROPERTIES
EVENTS ARE LIQUIDS
EXPERIENCE IS A BODY PROCESS
EXPERIENCE IS A LIQUID
EXPERIENCE IS A LOCATION IN SPACE [SITUATION IS LOCATION]
EXPERIENCE IS A PHYSICAL SPACE (QUALITIES)
EXPERIENCE IS A WEATHER EVENT
EXPERIENCE IS AN OBJECT
GAINING CONCEPTUAL KNOWLEDGE IS A CONFLICT
HUMAN CONCEPTUAL (SOCIAL) INTERACTION IS PHYSICAL ACTION
KNOWLEDGE AREAS ARE CONTAINERS
MENTAL THOUGHT IS A PHYSICAL SPACE
RELATIONSHIP IS AN OBJECT

Agency

CITIES, BUILDINGS AND THEIR PARTS ARE AGENTS
CONCEPTS ARE AGENTS

IDEAS ARE ENTITIES THAT CAN MAKE ACTIONS (NOT HUMAN SPECIFIC)
IDEAS CAN EXERT FORCES (ATTRACTION, REPULSION)
LANDSCAPES EXERT FORCES ONTO ENTITIES
OBJECTS (STATIC) CAN MAKE KINETIC ACTIONS [FORM IS ACTION]
OBJECTS (STATIC) HAVE BIOLOGICAL BODIES (ENTITIES)
OBJECTS CAN ACT IN RELATIONSHIP TO EACH OTHER (NOT HUMAN SPECIFIC)
OBJECTS EXERT (INVISIBLE) FORCES FROM THEIR SURFACES
SPACES (VOIDS) HAVE BIOLOGICAL BODIES (ENTITIES)
SPACES CAN EXERT FORCES AND MAKE ACTIONS

Buildings

A BUILDING IS A LANDSCAPE
A BUILDING IS A NATURAL ENVIRONMENT (BIOME)
BUILDINGS ARE PEOPLE
BUILT FORM (CITIES, BUILDINGS) IS AN ANIMAL
CITIES ARE ORGANS

Body

AN ARGUMENT IS AN OBJECT
ARGUMENT IS CONFLICT
EXPENDING ENERGY MEANS PROGRESS (WORK=RESULTS)
HUMAN-TO-HUMAN INTERACTION IS CONFLICT
LACK OF ATTENTION IS LACK OF LIFE
MODE OF MOVEMENT IS QUALITY OF EXPERIENCE
THE INTERACTION OF ONE IDEOLOGY WITH ANOTHER IS CONFLICT
TO BE ACTIVE IS TO BE ALIVE (NOT MOVEMENT SPECIFIC)
TO BE EATEN IS TO BE REMOVED
TO BE HIT OR TOUCHED IS TO PAY ATTENTION
TO BE INSIDE OR UNDER IS TO BE PROTECTED
TO BE LOCATED IN AN AREA THAT IS NOT "NATURAL" IS TO BE IN A STATE OF CONFLICT WITH
THAT AREA
TO BE TOUCHED IS TO BE INFLUENCED
TO CATCH SOMETHING IS TO BE RESPONSIBLE FOR IT
TO EAT IS TO MAKE SOMETHING PART OF YOURSELF
TO HOLD SOMETHING IS TO ACCEPT SOMETHING
TO HOLD SOMETHING IS TO CONTROL SOMETHING [CONTROLLING IS GRASPING]
TO HOLD SOMETHING IS TO UNDERSTAND SOMETHING
TO HOLD SOMETHING IS TO USE SOMETHING
TO MAINTAIN FORM AGAINST FORCES IS CONFLICT
TO MAINTAIN INDIVIDUALITY IS A CONFLICT
TO TOUCH SOMETHING IS TO INFLUENCE IT

Human experience

AN ENTITY THAT CAUSES SOMETHING TO COME INTO EXISTENCE IS A PARENT
ANIMALS ARE PEOPLE
ARCHITECTURE (BUILDINGS ARE HUMAN BODIES OR BODY PARTS)

ASSEMBLIES (INDUSTRIES AND SECTORS) HAVE HUMAN BODIES AND ACTIONS
CONCEPTUAL IDEAS HAVE HUMAN BODIES AND CAPACITIES (ACTIVITIES)
CONCEPTUAL IDEAS HAVE HUMAN PERSONALITIES
CONCEPTUAL IDEAS HAVE SOCIAL STATUS
DISCRETE ENTITIES HAVE SOCIAL RELATIONSHIPS AND STANDING
EMOTIONS ARE ENERGY (FIRE, FURNACE, BOILER, ETC.)
EVENTS ARE PEOPLE
HUMAN CAPACITIES ARE ARCHITECTURAL SPACES
HUMAN CAPACITIES ARE PHYSICAL OBJECTS (SUBSTANCES)
HUMAN CAPACITIES HAVE HUMAN BODIES AND INDEPENDENT EXISTENCE
HUMAN RELATIONSHIPS ARE CONTAINERS
HUMAN-TO-HUMAN INTERACTION (LIFE) ARE GAMES (BOARD GAME, SPORT)
ONE HUMAN ACTIVITY DEFINES ANOTHER HUMAN ACTIVITY (PROFESSION, ACTION)
PEOPLE ARE ANIMALS (HAVE ANIMAL CHARACTERISTICS)
PEOPLE ARE LIQUIDS
PEOPLE ARE OBJECTS
PHYSICAL OBJECTS HAVE HUMAN BODIES OR CAPACITIES (ACTIVITIES)
SMOOTH IS SEDUCTIVE (DESIRABLE)
SPACES HAVE HUMAN CAPACITIES AND SENSES (SIGHT, SPEECH+)
SPACES HAVE HUMAN PERSONALITIES AND EMOTIONAL STATES
STATES ARE LOCATIONS
THE ENVIRONMENT HAS ASPECTS OF THE HUMAN BODY
THE MIND (CONCEPTUAL PROCESSES) IS A CONTAINER
THE MIND (CONCEPTUAL PROCESSES) IS A SURFACE
THE MIND IS A MACHINE [THINKING IS A MECHANICAL PROCESS]
TO INTERACT WITH CLOSE PROXIMITY IS TO HAVE SEX

Machine

IDEAS ARE MACHINES (MECHANISMS)
TO DELIVER AN OUTCOME OR OUTPUT IS TO BE A MACHINE
TO PERFORM A FUNCTION EFFICIENTLY IS TO BE A MACHINE
TO REPRODUCE EXACTLY IS TO BE A MACHINE (NON-HUMAN)

Motion

CONCEPTUAL EVENTS ARE MOVEMENTS [EVENTS ARE MOTIONS]
DEVELOPMENT IS FORWARD/MOVEMENT
DIFFERENT DIRECTIONS ARE DIFFERENT IDEAS
FORM IS MOTION
LENGTH OF MOVEMENT IS VOLUME OF EFFECT
MOVEMENT IS A LIQUID
MOVEMENT IS AN OBJECT
MOVEMENT IS LIFE
MOVING FORWARD OR UPWARDS IN SPACE MEANS TO PROGRESS (GOAL BASED)
RELATIONSHIP BETWEEN FORMS IS MOVEMENT
RELATIONSHIPS ARE JOURNEYS
(REPEATED) FORM IS MOTION
TEMPERATURE IS SPEED OF MOVEMENT

THINKING IS ACTION
THINKING IS MOVEMENT
TO BE STOPPED (MOVEMENT) IS TO PAY ATTENTION TO WHAT STOPPED YOU
TO CHANGE THE DIRECTION OR LOCATION IS TO CHANGE THE TYPE OR WAY OF THINKING
TO FOLLOW IS NOT TO BE IN CONTROL
TO MOVE IN DIFFERENT DIRECTIONS IS TO EXPLORE DIFFERENT IDEAS
TO MOVE IN DIFFERENT DIRECTIONS IS TO LACK A RELATIONSHIP
TO RETURN TO A PLACE IS TO RETURN TO AN IDEA

Object

AMOUNT OF MATERIAL IS AMOUNT OF INFORMATION
AMOUNT OF STRUCTURE IS AMOUNT OF ORGANIZED KNOWLEDGE
ATTITUDES, EXPERIENCES, ACTIONS AND BELIEFS ARE OBJECTS
CONTAINED FIELD OF VIEW IS AN OBJECT (SIGHT TO OBJECT MAPPING)
ENVIRONMENTAL EVENTS ARE PHYSICAL OBJECTS (SMALL TO LARGE TRANSFER)
EXPERIENCE IS WEIGHT
FORM (SOLID) IS A FLUID (LIQUID)
FORM IS A TEXT
FORM IS DISCOURSE
LIQUIDS ARE SOLIDS
MECHANICAL SYSTEMS ARE ORGANIC SYSTEMS
ABSTRACT IS PHYSICAL
OBJECTS ARE ANIMALS
OBJECTS ARE CONTAINERS
OBJECTS ARE PLANTS
PHYSICAL ATTRIBUTES (COLOUR, TEXTURE) ARE DIFFERENT POINTS OF VIEW
PHYSICAL ATTRIBUTES (COLOUR, TEXTURE) ARE EMOTIONAL EFFECTS OR ACTIONS
SCALE (VOLUME, THICKNESS, SIZE) IS AMOUNT OF KNOWLEDGE/INFORMATION
SHAPE (FORM) IS WEIGHT
SHAPE IS ACTION
SHAPE IS EXPRESSION (PERSONALITY)
SURFACE QUALITY (SMOOTH, ROUGH) IS EFFORT OF MOVEMENT (EASY, HARD)
SURFACE QUALITY (SMOOTH, ROUGH) IS EXPERIENCE (EASY, HARD)
THE OPERATION OF A TOOL IS A CONCEPTUAL EVENT
TO BE PHYSICALLY CONNECTED IS TO HAVE A RELATIONSHIP
TO BE WHOLE IS TO BE CONTINUOUS
TO COVER IS TO BE WITHIN ITS INFLUENCE OR AREA OF EFFECT
WEIGHT IS INFLUENCE OR EFFECT
LANDSCAPES ARE ORGANISMS (ANIMAL/HUMAN)
PHYSICAL ACTIONS ARE CONCEPTUAL EFFECTS

Scale

LARGER SCALE (BIGGER) IS MORE IMPORTANT
SCALE IS EFFECT
SIZE IS WEIGHT
UP IS MORE

Sight

BRIGHT OR LIGHT IS IMPORTANT
ENGAGEMENT IS VISIBILITY
HUMAN VIEWSHED IS AN OBJECT
LACK OF VISUAL RECOGNITION IS LACK OF ATTENTION
LACK OF VISUAL RECOGNITION IS LACK OF CONCEPTUAL UNDERSTANDING
SEEING IS TOUCHING
THINKING IS SEEING
TO BE SEEN IS TO BE IMPORTANT
TO BE SEEN IS TO BE PRESENT
TO LOOK AT SOMETHING IS TO GIVE IT IMPORTANCE
TO MOVE VISUALLY IS TO BE ALIVE
TO PUSH DOWN, BEHIND OR UNDER IS TO MOVE OUT OF SIGHT
TO PUT FORWARD, LAY OUT OR BRING IT UP IS TO BRING INTO VISUAL VIEW
TO REFLECT THE IMAGE OF SOMETHING IS TO HOLD SOMETHING
TO SEE SOMETHING IS TO PAY ATTENTION TO IT [SEEING IS ATTENTION]
TO SEE SOMETHING IS TO TAKE IT INTO THE BODY (PHYSICALLY)
TO SEE SOMETHING IS TO TOUCH IT/HOLD IT
TO SEE THE SHAPE OF SOMETHING IS TO KNOW IT CONCEPTUALLY
VIEW, SEEING AND VISION IS AN OBJECT
VISIBLE SURFACE MAINTAINS SOCIAL RELATIONSHIPS AND ENFORCES NORMS
VISUAL APPEARANCE IS A DIALOGUE WITH THE VIEWER
VISUAL APPEARANCE IS SPEED OF MOTION
VISUAL APPEARANCE REPRESENTS NON-VISUAL CHARACTERISTICS
VISUAL CONNECTION IS PHYSICAL CONNECTION
VISUAL DIFFERENCES IS TO BE IN AN ARGUMENT
VISUAL INTERPRETATION IS PHYSICAL EFFECT
VISUAL INTERPRETATION IS PHYSICAL MOVEMENT [FORM IS MOTION]
VISUAL RECOGNITION IS CONCEPTUAL UNDERSTANDING [KNOWING IS SEEING]
VISUAL SEPARATION IS PHYSICAL SEPARATION

Social

HUMAN RELATIONSHIPS ARE LIQUIDS

Sound

ATTITUDES AND POSITIONS ARE SOUNDS (MUSIC)
OBJECTS (FORM) ARE SOUNDS
SIGHTS (VISION) ARE SOUNDS
SOUND IS A LIQUID
SOUNDS ARE CONTAINERS
SOUNDS ARE OBJECTS

Space

BEING AHEAD (LINEAR) OR BEYOND (EPICENTER) MEANS PROGRESS
HEIGHT IS QUANTITY

HEIGHT IS VALUE
TO BE CONTAINED IS TO BE CONTROLLED
DISTANCE IS RELATIONSHIP [PROXIMITY IS EFFECT]
ENVIRONMENTS ARE A LIQUID
EXTENTS OF ACTIVITIES ARE BOUNDARIES OF CONTAINER (PROGRAM)
FLUIDS (LIQUID) IS A GAS (SPACE)
GRAVITY IS A GAS
MOVING THROUGH TIME-BASED EVENTS IS MOVING THROUGH PHYSICAL SPACE
PASSAGE OF TIME IS MOVEMENT THROUGH DISCRETE SPACES (CONTAINERS)
PERCEIVED (PSYCHOLOGICAL) SPACE IS PERCEIVED TIME
PHYSICAL PROXIMITY IS CONCEPTUAL EFFECT [CLOSE IS TO BE INFLUENCED]
PHYSICAL SPACE AND FORM HAVE ORGANIC PROPERTIES
SOCIAL STANDING IS A LOCATION IN SPACE
SPACE (GAS) IS A FLUID (LIQUID)
SPACE (GAS) IS A OBJECT (SOLID)
SPACE HAS VARIABLE DENSITY (PSYCHOLOGICAL)
SPACE IS TEXT (CAN BE READ LIKE A BOOK)
TIME IS A CONTAINER
TIME IS A LIQUID
TIME IS AN OBJECT
TIME IS AN ORGANISM
TIME IS CHANGE
TIME IS MOVEMENT
TIME IS SPACE
TIME-BASED EVENTS (HISTORY/FUTURE) IS AN OBJECT
TIME-BASED EVENTS ARE A LIQUID
TO OPEN IS TO HAVE ACCESS TO NEW IDEAS
TO UNFOLD (OR EXPAND) IS TO BE ACTIVE
UP IS IMPORTANT

Taste

QUALITY OF TASTE (FLAVOUR) IS QUALITY OF EXPERIENCE

Temperature

PSYCHOLOGICAL STATE IS A TEMPERATURE

B3. Conceptual Metaphors (evaluative)

The following list of conceptual metaphors had a clear association with an evaluative category (good, interesting, positive, bad, difficult) were found in the corpus. These types of metaphors are primary and do not reduce any further. They are also often a second metaphor in an expression rather than being the main association.

Body

ABOVE/FRONT CONTROLS BELOW/BACK
BODY CONTACT (NON-VIOLENT) IS GOOD
LACK OF COMFORT HAS ATTRIBUTES OF HARD, ROUGH, COLD, ETC.
LACK OF CONTROL IS BAD
LACK OF CULTURE (REFINED) IS BAD
LACK OF LIFE IS BAD
LACK OF PRESSURE OR TENSION IS GOOD
LACK OF RICH TASTE OR FLAVOUR IS BAD
LACK OF SIGHT IS BAD
LACK OF VOICE IS BAD
LIGHT (BRIGHTNESS) IS GOOD
NOT EXPENDING ENERGY (AT REST) IS GOOD
PASSIVE IS BAD
POSSESSION IS GOOD (TO HAVE THINGS)
PRESSURE OR NON-WANTED ACTIVITY ON THE BODY IS BAD
SURFACE IS SUPERFICIAL, COMPLEXITY IS IN DEPTH
TO BE ABLE TO DEFEND YOURSELF PHYSICALLY IS GOOD
TO BE AT REST IS GOOD
TO BE PHYSICALLY CLOSE IS TO BE IN AGREEMENT
TO BE CONSTRAINED IS BAD
TO BE FIRM (UNMOVING) IS TO BE CONFIDENT
TO BE HIT OR POKED IS BAD (BODY HURT)
TO BE MORE THAN WHOLE IS BETTER THAN JUST BEING WHOLE
TO BE ON STABLE GROUND IS GOOD (SAFE)
TO BE ON THE SURFACE BETWEEN GROUND AND SKY IS GOOD
TO BE SEXUAL ACTIVE AND ABLE (PROCREATION) IS GOOD
TO BE SEXUAL ACTIVE BUT INDISCRIMINATE IS BAD
TO BE STRONG IS GOOD
TO BE UPRIGHT (VERTICAL, STAND) IS TO BE ACTIVE
TO BE WHOLE IS GOOD
TO CARRY SOMETHING HEAVY IS HARD
TO CONTAIN SOMETHING IS TO CONTROL SOMETHING
TO COVER IS TO PROTECT (GOOD)
TO CREATE NEW LIFE IS GOOD
TO EXPEND ENERGY TO ACHIEVE SOMETHING (WORK) IS GOOD
TO HAVE A BODY IS TO BE ABLE TO ENGAGE WITH OTHERS (GOOD)
TO HAVE A NON-STABLE FORM OR NON-FIXED LOCATION IS BAD

TO HAVE A STABLE FORM (OR LOCATION) IS GOOD
TO IMPACT SENSES BEYOND THEIR THRESHOLDS IS BAD
TO LET GO OF SOMETHING IS TO HAVE NO INFLUENCE OR CONTROL OVER IT
TO LIE DOWN IS TO BE PASSIVE (HARD TO SEE, SURRENDER)
TO MAINTAIN BALANCE IS GOOD
TO PLAY IS NOT TO TAKE THINGS SERIOUSLY OR TO COMMIT
TO RESTORE OR RETURN TO ORIGINAL STATE IS GOOD
TO TAKE SOMETHING INTO THE BODY IS TO BE NOURISHED
TO TOUCH THE GROUND LIGHTLY (LOW IMPACT) IS GOOD

Body (orientation)

SAME ORIENTATION IS AGREEMENT
TO FACE DIFFERENT DIRECTIONS IS TO BE OPPOSED BUT NOT IN CONFLICT
TO FACE OR BLOCK SOMETHING (PHYSICAL) IS TO BE IN DISAGREEMENT

Human experience

ABSENCE OF CONTENT IS BAD
ACHIEVING A GOAL IS GOOD (FAILURE IS BAD)
BEGINNINGS ARE HOPEFUL
ENERGY (POWER) IS GOOD (LACK IS BAD)
INSIDE IS ACCESS
MODERATION IS POSITIVE
REACTING TO THE SURROUNDING ENVIRONMENT IS GOOD
THINGS OUTSIDE OF THE PRESENT SITUATION ARE GOOD
TO BE ALIVE IS GOOD (DEAD IS BAD)
TO BE FREED OF RESPONSIBILITY IS GOOD
TO BE PRECISE IS POSITIVE
TO CONTINUE TO EXIST PAST USEFULNESS IS BAD
TO FIND SOMETHING IS GOOD (POSSESSION)
TO HAVE CHOICES IS GOOD
TO HAVE NON-FIXED USE IS GOOD (FLEXIBILITY)
TO HAVE PLENTY (EXCESS, OVERFLOW) OF NEEDED THINGS IS GOOD
TO HAVE PURPOSE (USE) IS GOOD
TO KNOW SOMETHING IS GOOD
TO MANIPULATE THINGS (SHAPE) IS GOOD
TO PAY ATTENTION MAKES SOMETHING SIGNIFICANT
TO REPEAT EXACTLY IS TO BE THOUGHTLESS WHICH IS BAD

Identity

LACK OF CONTROL IS EXCITING
REFINEMENT AND REFINED ACTION IS GOOD (MINIMAL)
TO BE GIVEN VALUE IS GOOD
TO BE HOMOGENOUS IS GOOD
TO BE HONEST IS GOOD (TRUTH)
TO BE INTELLECTUALLY BASED (COGNITIVE) IS TO BE PROGRESSIVE (GOOD)
TO BE WHAT YOU ARE IS GOOD (ESSENCE) - HUMAN TRUTH BIAS

TO HAVE A NON-FIXED MEANING IS GOOD
TO HAVE PRECISE THINKING IS GOOD
TO JOIN TWO OR MORE THINGS TO MAKE A NEW WHOLE IS GOOD
TO MAINTAIN A SENSE OF ONESELF IS GOOD

Movement

FREEDOM OF MOVEMENT IS GOOD
LACK OF MOVEMENT IS BAD
THE INABILITY TO MOVE MEANS LACK OF INFLUENCE OR ACTION
TO ARRIVE AT A DESTINATION IS GOOD
TO BE BEHIND OR UNDER SOMETHING IS TO BE CONTROLLED BY IT
TO BE FLUID (MOVEMENT, FORM) IS GOOD
TO BE SMOOTH IS TO BE EASY (LESS ENERGY)
TO KNOW WHERE YOU ARE GOING IS GOOD (TO SEE THE TERRAIN AND AVOID DANGER)
TO MOVE AROUND, OVER OR THROUGH AN OBSTACLE (GOOD)
TO MOVE AWAY FROM SOMETHING IS TO NOT HAVE A RELATIONSHIP
TO MOVE BEYOND IS TO BE MORE ADVANCED (BETTER)
TO MOVE FORWARD IS GOOD (BACK IS BAD)
TO MOVE FORWARD WITHOUT WAVERING IS TO BE DETERMINED (GOOD)
TO MOVE IN A STRAIGHT LINE IS NOT A COMPLICATED MOVEMENT
TO MOVE QUICKLY IN A FORCEFUL MANNER
TO MOVE SWIFTLY
TO MOVE WELL (UPRIGHT, FORWARD, PRECISE) IS GOOD
TO MOVE WITHOUT VIGOUR OR BEING DOCILE IS LACK OF AMBITION OR PROGRESS
TO STOP MOVING IS TO STOP DEVELOPING

Object properties

BIG OR DEEP (VASTNESS) IS IMPORTANT
HARD IS CONTROLLING
HARD IS DECISIVE (GOOD)
LIGHTNESS (WEIGHT) IS GOOD
ROUGH TEXTURE IS UNCOMFORTABLE (BAD)
SMOOTH SURFACE IS GOOD (SAFER, EASIER, NOT DANGEROUS)
SOFT IS FLEXIBLE (COMPASSIONATE/GOOD)
SOFT IS YIELDING (GOOD)
TO MOVE BEYOND ABILITY OR PROPERTY LIMITS IS BAD (BREAKS)

Organism

GROWTH IS PROGRESS
INCREASE IN SIZE WITHOUT INCREASE IN MATERIAL IS BAD
OLDER IS BIGGER
REDUCING IN SIZE IS BAD
TO BE CONSIDERED WHOLE IS POSITIVE (NOT COLLECTION OF PARTS)
TO BE DEFENCELESS IS TO BE PREY
TO BE IN A NON-NOURISHING ENVIRONMENT IS BAD (LACK OF THRIVING)

TO BE IN A NOURISHING ENVIRONMENT IS GOOD (FOOD, NEEDS, NUTRIENTS)
TO HAVE ORDER/STRUCTURE IS GOOD
TO HAVE PART OF A WHOLE REMOVED IS BAD (NON-FUNCTIONING)
TO RESTORE OR RETURN TO A WHOLE IS DIFFICULT
UNCONTROLLED GROWTH IS BAD

Sight

INCREASED CONTRAST IS GOOD (EASIER TO SEE)
SEEING IS RELATIONSHIP
TO BRING UP IS TO KNOW
TO MISS SEEING SOMETHING THAT IS THERE IS BAD
TO PUSH OUT OF SIGHT (COVER, PRESS DOWN) IS NEGATIVE
UGLY IS BAD
VISUAL CONNECTION IS POSITIVE

Social

COMMUNICATION (TRANSFER OF INFORMATION) IS GOOD
NEED TO MAINTAIN STATUS OR STANDING IN COMMUNITY
PROGRESS IS GOOD
PROGRESS IS GOOD
TO BE ABLE TO THINK FOR YOURSELF IS GOOD
TO BE CONNECTED (RELATIONSHIPS) IS POSITIVE
TO BE GUIDED (PHYSICAL MOVEMENT) IS GOOD
TO BE IMPORTANT IS TO HAVE MEANING WHICH IS GOOD
TO BE IN AGREEMENT IS GOOD
TO BE ISOLATED IS BAD
TO BE ISOLATED IS TOO BE SAFE OR PROTECTED
TO BE OVERPOWERED BY SOMETHING IS GOOD
TO BE PART OF A LARGER WHOLE IS GOOD
TO BE REJECTED SOCIALLY IS BAD
TO BE UNABLE TO MAKE YOUR OWN DECISIONS IS BAD (INDEPENDENT THOUGHT)
TO BE WHERE YOU ARE NOT WANTED OR NOT ALLOWED IS BAD
TO BE WHERE YOU BELONG (OR ARE WANTED) IS GOOD
TO HAVE A HIGH SOCIAL STATUS IS GOOD
TO HAVE SOMETHING/SOMEONE ELSE BE COMPLIANT IS GOOD
TO PROTECT OTHERS IS GOOD (VIRTUE)
TO PUSH OR CONTROL ANOTHER, TO FORCE ACTION FOR PERSONAL BENEFIT IS GOOD
CONTROL IS GOOD
TO RESIST BEING CONTROLLED BY ANOTHER IS GOOD
TOO FAR FROM A NORM (CENTRE OR STANDARD) IS BAD

Sound

PLEASING SOUNDS (HARMONY) ARE GOOD

Space

BIG OR DEEP IS GOOD

CHANCE OR LACK OF PRECISE DIRECTION

DEEP IS SIGNIFICANT

DOWN IS BAD

OBJECTS IN ALIGNMENT OR WELL FITTED ARE GOOD

SOMETHING CONTRASTING WITH BACKGROUND IS IMPORTANT

SOMETHING IN THE CENTRE (MIDDLE) IS IMPORTANT

TO BE BETWEEN THINGS IS TO BE STUCK

TO BE BETWEEN THINGS IS TO HAVE POWER OVER THEM (AUTHORITY, CONTROL)

TO BE CONTINUOUS (NOT ENDING) IS GOOD

TO BE PHYSICALLY CLOSE IS TO HAVE A RELATIONSHIP

TO BE PHYSICALLY DISTANCE IS NOT TO HAVE A RELATIONSHIP

TO BE UNDER THE GROUND IS BAD

TO EXPAND OR OPEN IS GOOD

TO MOVE OFF STANDARD PATHS ALLOWS FOR UNEXPECTED POSSIBILITIES

TO MOVE TO THE PERIPHERAL IS BAD, TO MOVE AWAY FROM SOMETHING (CENTRE) IS BAD

UP IS GOOD

UP IS IDEAS AND CONCEPTS, DOWN IS PHYSICAL

UP IS MORE

Structure

LACK OF ORDER ALLOWS FOR UNEXPECTED EVENTS AND RESULTS (GOOD)

LACK OF ORDER IS BAD

Taste

TOO SWEET IS BAD