Drawing Outside the Bounds: 
Tradition and Innovation in Depictions of the House in Children’s Picturebooks

DISSERTATION

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By

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Abstract

Although the illustrations in picturebooks have been a subject of scholarly inquiry for years, often with an interest in attempting to understand how they work or create meaning, few have attempted to look at particular visual motifs as cultural products and drivers. In taking a material culture approach in combination with semiotic theories, this study explored how images of houses in picturebooks reflect themes of innovation and tradition in comparison with children’s depictions of houses in their artwork. These images reveal how American culture considers the house through its representations of it while suggesting new ideas of how pictures work to convey meaning.

This study took a mixed methods approach, combining qualitative and quantitative analysis of the images to triangulate observations about: a) how houses are depicted in picturebooks; b) how the patterns of house depiction in picturebooks correlated to children’s drawings; and c) how illustrators and children innovated in their depictions of houses. The data collected included a random sample of 110 picturebooks that depicted houses and 84 drawings created by 39 children ages 4 to 8. Each child was asked to first “draw a house” and then “design a house” in an uninhibited manner in order to assess how they innovated. The data was analyzed using a combination of a priori categories as the result of a pilot study and categories developed using grounded theory. Basic inference tests helped describe the features of both sets of data.

The findings identified nine patterns, each with their own conventions of house depiction (iconic, tall, simple, square, urban, neighborhood, haunted, castle, and tree), as well as other characteristics of house depiction: text/picture differences, location within the book, number, variety, criterial aspects, role of the house, and reflections of the American Dream. The patterns found in children’s drawings diverged from those of illustrators along the lines of pattern featured and other characteristics but only to a moderate extent. The children’s creative processes suggested that drawing is a social process influenced through both verbal and visual interactions. Nontraditional shapes and decorative elements were the most common techniques for innovation. However, production practices also appeared to play a role in innovation.

This study concluded that ways of depicting houses are conventional, most commonly following patterns that depict houses as small and simple, and include conservative ideas of dwellings. Although both children and illustrators depict houses as icons, illustrations reflect greater variety fostered by experience and skill. Illustrators occasionally include elements of realism but often choose a symbolic representation that correlates with children’s drawings. However, both groups are limited by the need to communicate,
discouraging innovation. Thus innovation is generally superficial, timid, or merely a substitution of a different building type. This could be improved through exposure to nontraditional houses, additional instruction in observational drawing, and using means of indicating “houseness” other than criterial aspects. Increasing innovation in both depictions and conceptions of houses would better prepare future generations to meet the challenges of providing housing creatively.
Dedication

To Architecture, Art, and Literature,

And where they come together in Children, like Elora, who view and read
Acknowledgments

A project like this would never have possible without the presence of so many wonderful people and institutions in my life. First, my advisor, Dr. Barbara Kiefer- thank you for inviting the adult me into the joys of children’s literature through your contributions to the Charlotte Huck textbook (Huck, Hepler, Hickman, & Kiefer, 2000) and then into the Literature for Children and Young Adults PhD Program at OSU. I have altogether learned more, contributed more, and had more fun than I could have ever imagined. I am so grateful to my entire dissertation committee, including Dr. Barbara Lehman, Dr. Linda Parsons, and Dr. Deborah Smith-Shank, for their time, patience, and support as I grappled with the willful concepts temporarily restrained within these pages. Dr. Brenda Dales from Miami University, who taught my very first children’s literatures classes, was also instrumental in putting me on the road to where I am today. The School of Teaching and Learning has supported me financially and offered many great opportunities to put children’s literature pedagogy into practice. Thank you to Dr. Ken and Sylvia Marantz for their questions, companionship, and fellow fascination with one of the best subjects in scholarly research.

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I am additionally in debt to libraries, those great institutions that make books “open to all.” The Wheaton and Gaithersburg branches of Montgomery County Maryland Public Libraries were where I first
explored widely the wonderful world of reading. The Columbus Metropolitan Library was not only a great place to work for many years but welcomed me into the Hilliard branch’s picturebook collection for my research, provided statistics and conversation, and checked in and out books beyond counting. The OSU libraries provided the magic of access to riches of research and even assisted in my quest to find an obscure online discussion of house icons (Mathis, 2010b). Although not a library, the staff at COSI took their responsibility to teach children about all kinds of science seriously by facilitating my research there with more ease and support than I thought possible.

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Fields of Study

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Table of Contents

Abstract ...................................................................................................................................................... ii
Dedication ................................................................................................................................................. iv
Acknowledgments ...................................................................................................................................... v
Vita .......................................................................................................................................................... vii
Publications .............................................................................................................................................. vii
Table of Contents ...................................................................................................................................... ix
List of Tables ............................................................................................................................................ xv
List of Figures ......................................................................................................................................... xvi
List of Graphs ........................................................................................................................................... xx
Chapter 1: Introduction ............................................................................................................................... 1
  Statement of the Problem........................................................................................................................ 4
  Purpose of the Study............................................................................................................................... 5
  Research Questions and Rationale ........................................................................................................ 6
    Question one. What are the prevalent patterns of house depiction in children’s picturebook illustration and what do these patterns indicate about how picturebooks construct the idea of “house”? .............................. 6
    Question two. How do the prevalent patterns of house depiction visible in children’s drawings of houses correlate with depictions of houses in picturebooks? ......................................................... 6
    Question three. In what ways do illustrators and children depart from prevalent patterns of house depiction?........................................................................................................................................... 6
  Significance of the Study....................................................................................................................... 6
  Definition of Terms .............................................................................................................................. 8
  Limitations of the Study ........................................................................................................................ 11
  Organization of the Dissertation ........................................................................................................... 11
Chapter 2: Review of Related Research .................................................................................................... 13
  The Importance of the House ................................................................................................................ 14
    The house in American culture ........................................................................................................ 14
    House and home in children’s literature ........................................................................................... 15
  Theoretical Perspectives ....................................................................................................................... 16
    Social constructivism. ....................................................................................................................... 16
    Enculturation. ................................................................................................................................. 17
    Material culture ............................................................................................................................... 17
<table>
<thead>
<tr>
<th>Development of categories and findings using grounded theory</th>
<th>56</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical analysis of categories</td>
<td>57</td>
</tr>
<tr>
<td>Legitimation</td>
<td>58</td>
</tr>
<tr>
<td>Dependability</td>
<td>58</td>
</tr>
<tr>
<td>Triangulation</td>
<td>58</td>
</tr>
<tr>
<td>Transferability/external validity</td>
<td>58</td>
</tr>
<tr>
<td>Rich, thick description</td>
<td>59</td>
</tr>
<tr>
<td>Negative case analysis</td>
<td>59</td>
</tr>
<tr>
<td>Sample integration and conversion</td>
<td>59</td>
</tr>
<tr>
<td>Weakness minimization</td>
<td>59</td>
</tr>
<tr>
<td>Instrumental decay</td>
<td>59</td>
</tr>
<tr>
<td>Reflexivity/bias</td>
<td>59</td>
</tr>
<tr>
<td>Chapter 4: Findings of the Study</td>
<td>61</td>
</tr>
<tr>
<td>Summary of Investigations</td>
<td>61</td>
</tr>
<tr>
<td>Investigation one: Depictions of houses in picturebooks</td>
<td>61</td>
</tr>
<tr>
<td>Descriptive characteristics of the books</td>
<td>62</td>
</tr>
<tr>
<td>Selection of exemplar houses</td>
<td>64</td>
</tr>
<tr>
<td>Investigation two: Depictions of houses in children’s drawings</td>
<td>65</td>
</tr>
<tr>
<td>Descriptive characteristics of the participants</td>
<td>65</td>
</tr>
<tr>
<td>Data corpus</td>
<td>66</td>
</tr>
<tr>
<td>Question One: Patterns of House Depiction in Picturebooks</td>
<td>68</td>
</tr>
<tr>
<td>Finding one: Patterns of house depiction</td>
<td>68</td>
</tr>
<tr>
<td>Iconic houses</td>
<td>69</td>
</tr>
<tr>
<td>Other categories</td>
<td>70</td>
</tr>
<tr>
<td>Tall houses</td>
<td>71</td>
</tr>
<tr>
<td>Simple houses</td>
<td>72</td>
</tr>
<tr>
<td>Square houses</td>
<td>73</td>
</tr>
<tr>
<td>Urban houses</td>
<td>74</td>
</tr>
<tr>
<td>Neighborhood houses</td>
<td>75</td>
</tr>
<tr>
<td>Haunted houses</td>
<td>76</td>
</tr>
<tr>
<td>Castles</td>
<td>77</td>
</tr>
<tr>
<td>Tree houses</td>
<td>78</td>
</tr>
<tr>
<td>Prevalence of the patterns</td>
<td>79</td>
</tr>
<tr>
<td>Outliers and other books that could not be categorized</td>
<td>81</td>
</tr>
<tr>
<td>Finding two: Other characteristics of house depictions</td>
<td>83</td>
</tr>
<tr>
<td>Inequality between text and illustration</td>
<td>83</td>
</tr>
<tr>
<td>Associations</td>
<td>84</td>
</tr>
</tbody>
</table>
A diverging case. ................................................................................................................... 85
Frequent locations of depictions within a book................................................................. 86
Number of houses depicted. ................................................................................................. 86
  Associations. ...................................................................................................................... 89
Variety of houses depicted. .................................................................................................. 90
  Associations. ...................................................................................................................... 91
Criterial aspects of houses. ................................................................................................. 92
Finding three: Roles played by houses. ............................................................................... 93
  Plot and participation in the events of the story. ............................................................... 94
  Identity and ties to characterization. .................................................................................. 95
  Houses as origins. ............................................................................................................. 97
  Houses as destinations. ................................................................................................. 97
  Visitors to houses. .......................................................................................................... 98
  Driving by and implying distance. .................................................................................. 98
  Scenery and aesthetic enhancement. ............................................................................... 99
  Indicating setting. ........................................................................................................... 99
  Stories that happen inside. ............................................................................................ 99
  Props: Houses that were acted upon. .............................................................................. 100
  Emphasizing conformity. ............................................................................................... 100
  Portraying variety. ......................................................................................................... 101
  Refuge and the comfort of home. .................................................................................. 101
  Setting the mood. .......................................................................................................... 102
  Symbolic houses with deeper meaning. ........................................................................ 102
Finding four: Ties to the American Dream. ....................................................................... 102
  Economic inferences from house depictions. ................................................................. 102
  Agrarian ideals. .............................................................................................................. 105
Summary.............................................................................................................................. 106
Question Two: Correlations between Drawings and Illustration .................................... 106
  Finding one: Diverging patterns. .................................................................................... 106
  Finding two: Variable attributes. .................................................................................. 108
    Fractional depictions. ................................................................................................. 109
    Focus on the front. ....................................................................................................... 109
    Flatness........................................................................................................................ 110
    Understanding space. ................................................................................................. 111
    Symmetry. ................................................................................................................... 115
    Selective inclusion of details. .................................................................................... 117
  Finding three: Representing wealth. ............................................................................... 118
List of Tables

Table 1. List of books with depictions of uninhabitable houses with depicted media and if the book also contains depictions of inhabitable houses. ................................................................. 204

Table 2. Demographic information about the children who participated in the first day of data collection for Investigation 2 by participant number. Includes gender, age, race, other participants from the same party, other participants that may have influenced the participant, and media of house depictions collected. ..... 210

Table 3. Demographic information about the children who participated in the second day of data collection for Investigation 2 by participant number. Includes gender, age, race, other participants from the same party, other participants that may have influenced the participant, and media of house depictions collected. ................................................................. 211
List of Figures

Figure 1. The Ohio State University 2009 Solar Decathlon House on the National Mall in October 2009. Photograph by Jim Tetro, U.S. Department of Energy................................................................. 1

Figure 2. Fallingwater by Frank Lloyd Wright (Moore, 2002), Villa Savoye by Le Corbusier (Chakroff, 2006), and House VI by Peter Eisenman (madrid2008-09.blogspot.com, n.d.)............................................... 2

Figure 3. Example of an iconic house as on the cover of In A People House (LeSieg, 2007). ...................... 3

Figure 4. The front façade of “Mother’s House” by Robert Venturi from 1964 that plays with the idea of a traditional “house” (Highsmith, 1989). ........................................................................ 4

Figure 5. Diagram depicting units and stories as used to measure the size of the house in elevation (McAlester & McAlester, 1984, p. 25). As these houses are shown without the roof, they also portray the portion of the house indicated with the term body shape. ................................. 10

Figure 6. An example of a indicating a house’s owner as the protagonist at the beginning of Yummy Trip! (DiTerlizzi, 2010). .................................................................................................................................... 65

Figure 7. Two images of the same house in A Dark, Dark Tale (Brown, 1981/1992) illustrated how different depictions can differ on which pattern they best fit. .......................................................... 69

Figure 8. Examples of iconic houses (from left to right): The Dumb Bunnies Go to the Zoo (Pilkey, 1997/1998) with house depicted without an indication of depth similar to the next two images; A Garden for Groundhog (Ballan, 1985/2004) which includes a small but relatively inconsequential wing to the left; Squares (Loughrey, 2010) with pyramidal roof; Sutter, Sutter, Sput (Bell, 2008) which emphasizes the gabled façade with a lighter color; and Old MacDonald Had a Farm (Cabrera, 2008) demonstrating a traditional representation of perspective................................................................................................... 70

Figure 9. Tall houses from The Boy Who Cried Alien (Singer, 2012) that are one unit square in plan with obscured ground floors, although the purple building at center would be considered urban rather than tall. The somber colors and sharp angles are also reminiscent of haunted houses. .................................................. 72

Figure 10. Simple houses and historical references from upper left, top row: Replica of the log cabin where Laura Ingalls Wilder was born in Pepin, WI circa 1867 and one of the first types of post-war suburban home, the Levittown, NY Cape Cod from 1948. Bottom row: Log cabin with hipped roof in Bella Gets Her Skates On (Whybrow, 2007) and a Cape Cod style house in Adiós, Tricycle (Elya, 2009). Photographs by Library Grandma and Bernard Hoffman respectively. ........................................................................ 73

Figure 11. A stylized but symmetrical square house in It’s Not Fair (Harper, 1986/2007) that is two stories tall and two units wide, presumably with a side-gabled roof. ................................................................. 74

Figure 12. A three and a half story, two unit wide urban house with a deck roof (hipped but flat-topped—see McAlester & McAlester, 1984, p. 43) in Hello, Tilly (Dunbar, 2008). ......................................................... 75

Figure 13. Example of a neighborhood house in a Mansard or Neo-French Neoeceltic style with compound volumes, irregular plan, and many corners from Snow Princess (Paradis, 2005)................................................. 76

Figure 14. From left to right, the Davenport House in Saline, MI built in the Second Empire style in 1875 compared to images from Bedtime for Boo (Matheis, 2012) and Halloween Goodnight (Cushman, 2010). Photograph by Robert W. Lane.......................................................... 77

Figure 15. Maddie’s house from Maddie’s Monster Dad (Gibala-Bloxholm, 2011) that combines elements of castle, haunted house, and suburban home in the neighborhood type.......................................................... 78
Figure 16. The Story of the Leprechaun (Tegen, 2011) showing tree houses like that in which the leprechaun lived at the left, mushroom houses for smaller fairies at center, and traditional Irish thatched roof cottages in the human village in the distance.

Figure 17. Historically accurate images of the houses built by the Pilgrims circa 1623 that fit the simple pattern, albeit with a steeper roof than typical, in Thanksgiving on Plymouth Plantation (Stanley, 2004) and This First Thanksgiving (Melmed, 2001).

Figure 18. Depiction of New Mexico with a nonconforming house in How to Make a Cherry Pie and See the U.S.A. (Priceman, 2008).

Figure 19. Three pages from Porkelia (Tucker, 2011) illustrating six total depictions in the lower left, right, and left corners of the pages, respectively, of four distinct houses.

Figure 20. Comparison of style in Moonlight: The Halloween Cat (Rylant, 2003) and The Story of the Leprechaun (Tegen, 2011) as it relates to number of unique houses and total number of house depictions.

Figure 21. Image from My Parents Are Divorced, My Elbows Have Nicknames, and Other Facts about Me (Cochran, 2009) showing how the very vague forms of houses in the background can be identified through association by context. As all the buildings appear to be in a similar setting and share the aspects of scale and color with the houses in the foreground, they can also be identified as houses.

Figure 22. A page at the beginning of The Hinky-Pink (McDonald, 2008). The illustrator has used speech bubbles to indicate the building within the twisting streets of Florence, Italy that is representing the main character before the reader meets her more intimately on the following spread.

Figure 23. "Barn" or house shown in Little Donkey’s Wish (Weigelt, 2005).

Figure 24. Endpapers from Late for School (Calmenson, 2008) depicting the drive-by role. This page foreshadows the entire journey of the book from home in the lower left to school in the upper left.

Figure 25. Houses in the left image performed the conformity role but displayed more variety close up.

Figure 26. Example of the manor house pattern as a secondary drawing by Participant 8 (male, age 6) that appeared in the artwork of two children but not with any regularity in picturebooks.

Figure 27. Design by Participant 4 (female, age 6) that demonstrated some struggle with the orientation and size of the paper. The tower on the right disappeared off the page toward the top and compressed at the bottom in order to fit on the page.

Figure 28. Designs by Participant 25 (male, age 8) and 38 (female, age 7) that show attempted use of perspective. Participant 25 (left) let the ridgeline of the roof trail off to the right rather than complete the side. Participant 38 (right) seems to have struggled with how perspective should be represented with the complex shape.

Figure 29. From left to right, drawing by Participant 18 (male, age 8) and design by Participant 23 (male, age 6) that show interior objects on the outside of the house. According to Participant 18, the rectangles with large dots in the center were the bedroom doors and the rectangles toward the edges with the horizontal lines and vertical row of dots were the dressers. The ladder like piece may have been a staircase. In Participant 23’s design, the rectangle with the line through the center to the left was the couch and the pattern of circles to the left was the money inside the house.

Figure 30. Examples of house depictions simultaneously showing the inside and outside. From left to right, Pete’s house filling up with water as the friends attempt to escape in Pete and Pickles (Breathed, 2008), dollhouses in Curious George Visits a Toy Store (Rey, 2002), and the illustration in Tikki Tikki Tembo (Mosel, 1968) where the artist has approached how children seem to represent space.

Figure 31. Design by Participant 18 (male, age 8) that he verbally described as “as big as COSI,” a 320,000 square foot science museum (COSI, n.d., para. 1).
Figure 32. Comparison of a generous interior space within a much smaller exterior shell at the beginning of *Here Comes Jack Frost* (Kohara, 2009). The proportion of the window to the wall changed drastically between the two images. ................................................................. 115

Figure 33. Participant 26 (female, age 5) appeared to have attempted to incorporate elements of Participant 25’s drawing (male, age 8 at left) in her design (right). She used the same proportions and general form as he did but did not seem to grasp how the perspective lines were supposed to work, depicting only the lowest of the three he used. ................................................................................................................. 120

Figure 34. Stylized drawing by Participant 38 (female, age 7) that shared no characteristics with other children’s work. ................................................................................................................................. 121

Figure 35. Drawing and Design by Participant 24 (male, age 6). In the drawing (left), the rectangular shape was the refrigerator, the lower circle was the counter, and the space inside the outer boundary was “all the space in the house.” He did not want to talk about the design. ................................................................. 122

Figure 36. Images from *Arthur Turns Green* (Brown, 2011) comparing D.W.’s house to her drawing. Without additional information, it would be difficult to determine if the house pictured is intended to be D.W.’s home. ................................................................................................................................. 124

Figure 37. Product packaging designed to look like a house from *Maddie’s Monster Dad* (Gibala-Bloxholm, 2011). The “Build-a-Beast” brand plays on the building-like “Build-a-Bear” box. The styling of the house on this box was similar to Maddie’s house as can be seen in Figure 15. ......................... 125

Figure 38. Degrees of exaggeration contributing to variation in innovation as seen (left to right) in *The Matzo Ball Boy* (Shulman, 2005) and *Mrs. Claus Explains It All* (Claus, 2008)................................................................. 127

Figure 39. Drawing and Design by Participant 2 (female, age 7) demonstrating innovation through change in proportion. ................................................................................................................................. 128

Figure 40. Applications of particular architectural styles to house depictions in *Mrs. Crump’s Cat* (Smith, 2006). The house centered on the left page seems to have drawn inspiration from centered gable gothic revival cottages whereas the two white buildings (at center and to the left) use characteristics of the International style. Mrs. Crump’s house (right center) appears to be a Queen Anne Victorian house. 129

Figure 41. Houses on the front endpapers of *A Cup for Everyone* (Yonezu, 2008) with muted architectural references to the geometric forms of postmodern and classic architecture. The red building with green dome appeared similar in form to the Baptistery in Pisa with modifications such as windows instead of arches on the ground floor that made it seem more private than public space. The teacup toward the right was the shop featured in the story that sold cups, as indicated in the text and by the “open” sign on the door, but could provide another example of turning an uninhabitable object into a building. .................................................. 130

Figure 42. House-like buildings in *The Last Tiger* (Elliott, 2012) that combined elements of glass curtain wall, skyscrapers, water towers, shed roofs, and iconic houses. Although these buildings might not initially be recognizable as houses, the iconic house forms stacked on the building above the boy and the single row of ribbon windows in the water tower-shaped building just to the left of the gutter suggest the sense of subdivision and scale of single family detached housing. .................................................................................. 131

Figure 43. Houses in typically uninhabitable objects. The house in *Charlotte Jane Battles Bedtime* (Wolfe, 2011) was sculpted to resemble a pirate ship boat on dry land but added many of the criticial aspects of a house such as windows, doors, and balconies. The teapot house in *Rolie Polie Olie* (Joyce, 1999) was also personified with human like decorative features, despite the house’s passive participation in the story. .. 132

Figure 44. Children’s work that fit the tree pattern. From left to right, Participant 19’s drawing of mushroom houses (male, age 7) where “lots of things live” and then design of a cave-like house and another mushroom house where “gumdrop people” live. Next, Participant 30’s design of a house that seems to be inside a Christmas tree (male, age 6). ................................................................. 133

Figure 45. Ornamental windows found in children's designs by Participants 9, 17, and 20 (all female, age 8).................................................................................................................................................................. 136
Figure 46. Finials as featured in Where’s the Knight? (Harris, 2013) and Participant 12’s drawing and design (female, age 7).

Figure 47. From left to right, Participant 34’s drawing (male, age 5) in comparison with designs featuring elements of personification by Participants 34 and 37 (female, age 8). The windows on Participant 34’s design (center) took the same position as the brown band, possibly illustrating ribbon windows, on the drawing. Participant 37 also inscribed the eyes of the right face over top previously drawn rectangles or possible window frames.

Figure 48. Progression of drawings by Participant 1 (male, age 4) from left to right. He ended up taking the third drawing home so that he could finish coloring it in.

Figure 49. Set of three houses by Participant 8 (male, age 6) depicting evolution of ideas over time. These were drawn in order from left to right.

Figure 50. From left to right, drawings by Participants 20 and 17 (both female, age 8) with drawing and design by Participant 29 (female, age 6) illustrating some of the appealing aspects of the children’s first impulses.

Figure 51. The image of the primitive hut that resembles the iconic house pattern from the frontispiece of Marc-Antoine Laugier: Essai sur l'Architecture 2nd ed. 1755 by Charles Eisen (WolfgangRieger, 2009). The woman is typically thought to be the personification of architecture bestowing the idea of the house to man.

Figure 52. Non-Eurocentric houses from Tikki Tikki Tembo (Mosel, 1968), Why Christmas Trees Aren’t Perfect (Schneider, 1988) with semi-European castle in the background, and How I Learned Geography (Shulevitz, 2008). Although the first two house forms share some similarities with the simple and iconic patterns, the differences of the protruding windows and hipped roof with Dutch gables in Tikki Tikki Tembo and the stilts in Why Christmas Trees Aren’t Perfect are very distinct.

Figure 53. Castle at the far right of the spread in Don’t Squish the Sasquatch (Redecker, 2012) and elf-dwellings as castle derivatives in Mrs. Claus Explains it All (Claus, 2008).

Figure 54. Illustration of the effects of removing the features of a house (Mathis, 2010a). Mathis (2010b) claimed that the far right image was unidentifiable as a house. Although this may be true in user interface design, picturebooks often provided context clues that would allow continued identification.

Figure 55. Diagram of the relationships between roles. The lines with arrows indicate a significant positive relationship and the dotted lines indicate significant negative relationships. Some roles were not significantly related to others. The spatial relationships are not to scale with the statistical relationships.

Figure 56. The individualized houses from The Big Orange Splot (Pinkwater, 1977) with Mr. Plumbean’s house at the far left.
List of Graphs

Graph 1. Comparison of depictions of pattern types and number of picturebooks. Although the sample population included 110 books, the total population for this figure was 190 because each book could contain multiple types of depictions. ............................................................... 80

Graph 2. Comparison of exemplar house height and width by type. Symbols that would have been on the same data point, for example 1 unit wide and 2 stories tall, have been randomly offset for identification. Excluding outliers, similar types can generally be seen to cluster together. ........................................ 81

Graph 3. Number of books with depictions in physical divisions of the pages and covers. Depictions were more likely to be found toward the beginning of the books. ........................................................................... 86

Graph 4. Numbers of depictions of houses found within picturebooks. ................................................................. 88

Graph 5. Numbers of distinct houses found in picturebooks. .................................................................................... 89

Graph 6. Scatterplot comparing total number of depictions to number of distinct houses within each book. Moonlight: The Halloween Cat (Rylant, 2003) is depicted as an “x” and The Story of the Leprechaun (Tegen, 2011) as a “+”. The maximum case at (211,132) has been discarded as an outlier. ....................... 90

Graph 7. Comparison of similar and different characteristics of houses depicted within each book. If a characteristic was different among the group of houses in a book, it was recorded one book along the positive scale for the characteristic and each characteristic that was similar was recorded as a book along the negative scale. .............................................................................. 91

Graph 8. Number of books with roles played by house depictions................................................................. 94

Graph 9. Exemplar houses by approximate economic class. ................................................................................. 104

Graph 10. Observed settings for houses in picturebooks with proportional indication of the distribution of United States Population. ........................................................................................................ 105

Graph 11. Comparison of patterns of house depiction between the samples of picturebooks, exemplar houses, children’s drawings of houses, and children’s designs of houses. ........................................ 107

Graph 12. Percent of depictions in drawings, designs, and exemplar houses by level of symmetry........ 116
Chapter 1: Introduction

While studying architecture in a Masters program at The Ohio State University, I participated in the 2009 Solar Decathlon Competition. Sponsored by the U.S. Department of Energy, this initiative was for each school to design and build an 800-sq-ft solar powered house over two years (see Figure 1). The houses were then displayed on the National Mall while competing in ten contests measuring architecture, market viability, engineering, lighting design, communications, comfort zone, hot water, appliances, home entertainment, and net metering (“DOE Solar Decathlon: 2009 Contests and Scoring,” n.d.). Surprisingly, one of the struggles our team encountered in the design process of our building was in regard to ideas of “houseness.”

Figure 1. The Ohio State University 2009 Solar Decathlon House on the National Mall in October 2009. Photograph by Jim Tetro, U.S. Department of Energy.

From an architectural perspective, the house is a relatively inexpensive building and involves pleasing only a single family rather than a committee or larger organization. Consequently houses are often
the most provocative building projects, seen as a playground for experimenting with emerging theory and demonstrating innovative design skills. Frank Lloyd Wright was able to create a house that had never been seen before, consisting of sliding horizontal planes cantilevered over a waterfall at Fallingwater. Le Corbusier worked out his revolutionary five points of architecture in a series of houses across France. Peter Eisenman explored deconstructivist architecture in several houses of shifting grids and planes (see Figure 2).

Figure 2. Fallingwater by Frank Lloyd Wright (Moore, 2002), Villa Savoye by Le Corbusier (Chakroff, 2006), and House VI by Peter Eisenman (madrid2008-09.blogspot.com, n.d.).

Whereas the architecture students on the team ascribed to the architectural idea of innovative “houseness,” the students from other disciplines were clearly getting their concepts of “house” from another source. Skeptical of the minimal design, the images and sketches they were drawn to suggested that they were seeking a sense of comfort tied to more traditional forms. Where did their ideas of house come from? The over-sized “McMansion” of suburban America, which our sustainable house stood in opposition to, was an unlikely inspiration. At this time I was also taking courses in children’s literature and I noticed a curious image appearing in many picturebooks: a little square shape with a peaked roof (e.g. Figure 3). Could this be the source of my team members’ vision of a house? It certainly resonated with their ideas and my colleagues would have been exposed to this image from a young age as they learned to read and explore books.
As I started thinking about how my own understanding of “houseness” evolved, I thought about fifth grade, when I had first decided that I was interested in being an architect when I grew up. At that point in time I had started drawing little pictures of houses or mansions for fun. Looking back now, I can see that these sketches were heavily influenced by historic architecture: almost all of the houses I drew had symmetric façades. It is possible that they were influenced by the historic residential architecture my family made visits to see—Monticello, Mount Vernon, and Rose Hill Manor—and an intense fifth grade project on the similarly neoclassical U.S. Capitol Building. My other juvenile forays into design also included a lifetime of building small cozy spaces out of boxes and couch cushions, which I often deemed “houses.” However, when I got to college, this was not the type of architecture being taught nor did there seem to be a sense of comfort or “houseness” encouraged in the design courses. The only time “houseness” came up was when it was being critiqued and played upon in postmodern works (see Figure 4).
Examining the origins of my ideas of what a house looked like and how they came into conflict with other ideas of “houseness” made me contemplate how cultural ideas are communicated visually: Where do children get their ideas of “houseness?” How is the idea of “houseness” depicted in picturebooks? What do these depictions say about the culture that creates and consumes them?

**Statement of the Problem**

The illustrations in picturebooks have been a subject of scholarly inquiry for years, often with an interest on attempting to understand how they work (e.g. Doonan, 1993; J. Evans, 1998; Joanne Marie Golden, 1990; Kiefer, 1995; Lewis, 2001; Moebius, 1986; Nikolajeva & Scott, 2001; Nodelman, 1988; Schwarcz, 1982; Sipe, 1998a). Although theories of how images achieve various effects abounded in the many taxonomic classification schemes produced, few have attempted to look at particular visual motifs as cultural products. In taking a material culture approach, one can explore both how images reflect the culture that created them and how they influence that same culture as the images are consumed. This information will further the understanding of how pictures work in an increasingly visual age.

The iconic image of a house is itself problematic—its form is so rarely transgressed or played upon that its ideology is unacknowledged, unspoken. Stephens and McCallum (2010) remarked that ‘representations of transgression more generally are an important way children's literature makes
ideologies apparent and seeks to redefine or overthrow them” (p. 367). In the case of the iconic house, the ideology of this sign remains unseen. Comparably, “a book which seems to a reader to be apparently ideology-free will be a book closely aligned to that reader’s own unconscious assumptions” (p. 360). The assumption that a traditional house is the only possible structure for a comfortable home is based in the middle class and packaged in the so-called American Dream. Hayden (1986) wrote, “Americans cannot solve their current housing problems without reexamining the ideal of the single-family house—that is, reexamining its history, and the ideals of family, gender, and society it embodies, as well as its design and financing” (p. 12). This image’s prevalence also devalues the many apartment buildings, duplexes, flats, and rowhouses where children, often of lower economic classes, live.

If attention is called to this pattern of iconic houses, the opportunity to disrupt tradition emerges. In 2008, *Food Inc.* (Kenner, 2009) brought attention to the subversive nature of the small pastoral farm depicted in advertising compared to the megacorporations that rule the food market. Since then, recognition of problems with the food industry has increased through the combined efforts of many media (e.g., Kingsolver, 2008; Local Matters, n.d.; Mercil, 2008; Pollan, 2009) and as a result reforms have been initiated. On the other hand, recognizing and highlighting the potential for innovation within traditional forms may encourage more work that is similarly provocative. In a world of limited resources, a more fluid image of home allows for creative solutions to rapidly changing problems. For example, the increase in non-married households sharing a single housing unit has led to the interest in houses with two master bedroom units (Stanton Homes, 2008). In the case of the Solar Decathlon competition, a less traditional form allowed our team to better provide comfortable amenities in a sustainable structure. If art for children can open to new possibilities, perhaps so may what children can imagine and create for their future.

**Purpose of the Study**

The purpose of this study is to investigate the culturally constructed image of the house as portrayed in children’s picturebooks and art. It reveals how American culture considers the house through its representations of it. I also wanted to explore the possibilities and limits of innovation within this motif. In the end, my hope is that this research presents a theory of the effects that images may have upon children who view them.
Research Questions and Rationale

The following questions have guided this research:

**Question one.** What are the prevalent patterns of house depiction in children's picturebook illustration and what do these patterns indicate about how picturebooks construct the idea of “house”? This question establishes the pervasiveness and characteristics of the image of the iconic house and other patterns of house depiction found in picturebooks. The purpose of this inquiry was to theorize why and how these constructions of house were produced. How these images reflect American culture as a whole is also discussed.

**Question two.** How do the prevalent patterns of house depiction visible in children’s drawings of houses correlate with depictions of houses in picturebooks? Whereas it is impossible to see what happens in the minds of children as they view illustrations in picturebooks, this study attempts to glimpse some of the effects of illustration through the physical manifestations of response. In this case, children’s drawings of houses were compared to the patterns of illustration found in picturebooks. This question aimed to highlight similarities and differences of house depiction that might suggest the influence of illustration and children’s drawings upon each other.

**Question three.** In what ways do illustrators and children depart from prevalent patterns of house depiction?

With absence of much variation in the iconic form, a particular area of interest here was how and when illustrations and children displayed innovation in their depictions of houses. This question suggests opportunities for questioning the traditional patterns of house depiction as well as identifying subversive undercurrents in attitudes towards domestic architecture.

Significance of the Study

Children's Literature is considered to have a profound effect upon youth in the United States as demonstrated by the number of scholars who have been its advocates (e.g. Colomer, 2010; Hunt, 1999; Kiefer, 1995, 2010; Nodelman & Reimer, 2003; Sipe, 2007; S. Wolf, Coats, Enciso, & Jenkins, 2010). In particular, scholars have noted that the picturebook is one of the first pieces of visual media that a child encounters (e.g. Hillard, 2002; Kiefer, 1995; Wiesner, 2012). Through teaching the next generation to read,
elements of culture are communicated, constructing preferences and common practices (Rogoff, 2003). Paley (1992) suggested “[literary works for children] exist as socially constructed objects that function as part of the wider cultural context and reflect many of that culture’s preoccupations, aesthetic themes, and systems of thought” (p. 152). Books, then, are a product capable of enculturating children who hear the stories and view the images over and over.

Since picturebooks are usually created, published, purchased, and performed by adults, they serve to create and ratify an artifact imbued with adult ideas that are transferred to children. Wilkie (1999) noted that “this makes children the powerless recipients of what adults choose to write for them” (p. 131; see also Nodelman, 2008). As a point of interaction between literate adults and pre-literate children, the picturebook presents a visualization to accompany the words the adult is reading. Therefore, the text and pictures “constitute two semiotic modes of communicating thought and emotion to readers/viewers” (Sipe, 2010, p. 248). However, this study explores the impact of the illustrations in picturebooks upon children through a specific visual motif.

This research study produces intriguing findings about visual culture and how it is communicated. Specifically, insight is shed on how children are enculturated by visual media that could be extended to forms beyond picturebooks such as television, billboards, and other advertisements. Additionally, this study hypothesizes that culture is transmitted from generation to generation through images. A visual pattern such as that of the iconic house which is no longer in sync with contemporary dwelling spaces could be an example of conservatism. On the other hand, the findings suggest that, either additionally or alternatively, signs are passed from generation to generation representing real world concepts that have been simplified in order to communicate more expediently.

Confronted with this new insight into picturebook illustrations, respect for the power of this media can only increase. Picturebooks both reflect cultural ideas and project ideas, ensuring their continuation. Based on this understanding, it is clear that more innovative images would encourage the concept of “houseness” to evolve beyond traditional patterns.
Definition of Terms

For the purposes of this study, the following terms will have these meanings when referred to in this text:

1. **House.** “A building that serves as living quarters” (“House,” 2011) typically for one nuclear family often referred to as a single-family detached house. In this dissertation the term will refer to the exterior of these dwellings unless otherwise qualified, not to discount the importance and interest of interior spaces with a house.

2. **Sign.** In accordance with Peircean semiotics, “something which stands to somebody for something in some respect or capacity” (Peirce 1931-1958, 2.228 as cited in Chandler, 2002, p. 29). In daily usage, “symbol” is more likely to be found but has been avoided herein except when referring to Peirce’s idea of a sign “based purely on conventional association” (emphasis in original) (p. 38).

3. **The iconic house.** The “distillation of the word ‘house’” (Bradbury, 2009, p. 304) in the depiction of a house that complies with the pattern of a square or rectangular front façade presenting the gable end of a roof. This term references both the idea of iconic as conventional and popular as well as Peirce’s idea of a sign that visually references some of the aspects of the object to which it refers (see Chandler, 2002, p. 37).

4. **Castle.** Although a castle is technically a military fortification, common literary usage suggests a connotation similar to the word “palace,” a “very large and impressive house” often the residence of some dignitary (“Palace,” 2014). In general, these are typically discussed as houses since children appear to have considered them as such, as demonstrated by castle-like buildings in five of their pictures of “houses” (7%).

5. **Picturebook.** “Text, illustrations, total design; an item of manufacture and a commercial product; a social, cultural, historical document; and foremost an experience for a child. As an art form it hinges on the interdependence of pictures and words, on the simultaneous display of two facing pages, and on the drama of the turning page” (Bader, 1976, p. 1). However, Sipe (2007) also observed that “it is also important to note that
picturebooks are less a type of literary genre than a form or format for a variety of genres” (p. 14).

6. **Media/Medium.** “The artform—the medium—...is a vessel which can hold any number of ideas and images” (McCloud, 1999, p. 6). Sometimes this term refers to the artistic medium or the materials of which a work of art is created but this text will principally use media or medium as a traditional form of communication or “[technology] for making and distributing messages” (P. Stein, 2008, p. 876) such as television, movies, advertisements, and books.

7. **American.** The use of “American” as an adjective can refer to both the continents of North America and South America and the country the United States of America. In this case it will be used to mean “of, relating to, or characteristic of the United States or its inhabitants” (“American,” 2012).

8. **American Picturebooks.** Picturebooks commonly available in the United States rather than only those published within the country. Despite originating in other locations, the presence of these books indicates that they are a part of American culture.

9. **The American Dream.** Dating to 1931, the American Dream refers to the idea that America offers “opportunity for each according to ability or achievement” regardless of the socioeconomic class one originated (Adams, 1931, p. 214). Although the actuality of this has been much contested in the years since, the house has become a symbol of such success (Brooks, 2011; Cullen, 2004; Hayden, 1986).

10. **Enculturation.** “The process through which the individual acquires the culture of his [or her] group, class, segment or society” (Spindler, personal correspondence as cited in Shimahara, 1970, p. 143) or “both a conscious and an unconscious conditioning process whereby [a person], as child and adult, achieves competence in his [or her] culture, internalizes his [or her] culture and becomes thoroughly enculturated” (Hoebel, 1972, p. 40), as commonly used in sociology and anthropology.
11. **Artifact.** An “object made or modified by [humankind]” (Prown, 1982, p. 1). When studied through the lens of material culture, artifacts provide “a means of understanding better the societies and cultures that produced the objects and used them” (Berger, 2009, p. 17).

12. **Unit.** In order to compare house depictions which are shown at a variety of scales, the term “unit” is used in both two and three dimensions to refer to “a room-sized module or structural unit” (McAlester & McAlester, 1984, p. 22). They are assumed to measure about 320 square feet (calculated from United States Census Bureau, 2013e). In residential architecture it should be noted that units may or may not correspond to actual room divisions. On a house’s elevation, one unit is one floor or story tall and the width is determined by the number of openings—typically either a door and a window or two windows (p. 25, see Figure 5).

![Figure 5. Diagram depicting units and stories as used to measure the size of the house in elevation (McAlester & McAlester, 1984, p. 25). As these houses are shown without the roof, they also portray the portion of the house indicated with the term body shape.](image)

13. **Size of house.** The size of houses in real life is generally considered in plan but houses in picturebooks and children’s drawings are typically depicted primarily in elevation. Thus the size of house depictions will be measured in terms of squared units of the elevation (see Figure 5).
14. **Body shape.** The shape of a house in elevation without the inclusion of the roof. These range from squat to square to tall and are typically rectilinear but could also be another shape or irregularly shaped (see Figure 5).

15. **Criterial aspect.** Objects are represented by indicating characteristics of the object that are of interest to the creator and are “regarded as adequately representative of the object” (Kress & van Leeuwen, 2006, p. 7). In regards to depictions of houses, these are the elements that describe “houseness.”

16. **Primitive.** From the discipline of architecture, the origin or starting-point from which other forms can be derived, thus describing the essence of the form.

**Limitations of the Study**

It should be noted that this study is limited by the picturebooks commonly available today. These books are most often written in English for audiences in the United States, although British, Canadian, and Australian books are common as well. These books most often represent white European-American culture, as only 216 books (6.0%) of approximately 3,600 books published in 2012 were by Black, American Indian, Asian/Pacific, or Latino/a authors and/or illustrators (Horning, Lindgren, & Schliesman, 2013, para. 12).

The format of this investigation also presents some limitations. Whereas correlation can be established between the drawings of houses by children and the picturebook illustrations of houses, causation is impossible to prove since there is no pre-test/post-test element to the design. Additionally, since reading responses during the reading experience are ephemeral, this study can only address the images manifested in children’s drawings after the fact. These images may also be influenced by other media sources such as advertisements and television or from personal experience.

Additional limitations relating to samples will be addressed in Chapter 3 and limitations in relation to the results in Chapter 5.

**Organization of the Dissertation**

Chapter 2 presents a review of research related to the subjects and issues discussed herein. This begins with the importance of the house in both architecture and children’s literature and includes the
theoretical framework in which this study was situated. The bulk of the discussion focuses on picturebooks in some depth and, to a much lesser extent, children’s drawings. This chapter concludes with a rationale for this study as a means of extending existing research.

Chapter 3 divides the research methodology into two portions. The first addresses the random sampling of picturebooks and associated analysis undertaken. The second section deals with the collection of children’s drawings as a quasi-experiment. Each portion addresses issues of research design, the research site, the sample, data analysis procedures, and measures of trustworthiness.

Chapter 4 presents the findings of the study organized by research question. These findings are then synthesized in Chapter 5 with a focus on the implications of the conclusions. The dissertation ends with a discussion of future research suggested by this line of inquiry in combination with the field of picturebook illustration.
Chapter 2: Review of Related Research

This study seeks to explore how children’s picturebook illustration constructs the idea of “house” in both traditional and innovative modes. In positioning this inquiry, pertinent information can be found among a variety of subjects and from a variety of perspectives. To begin, sources that support the importance of the house demonstrate the value of this study as central to the psyche of mainstream culture in the United States and the culture of the child. The house in architecture is a common area of interest, prompting not only writing on specific houses and housing types but also commentary as to their importance and perceived function. The same theme of “house,” and the often associated concept of “home,” appears in children’s literature. In this domain, however, the focus is often literary rather than visual. Then, several theoretical frameworks set the stage for discussion of “houseness” as it appears in children’s books and drawings. Theories of constructivism, semiotics, and material culture ground the study and provide tools for commenting upon the findings of the study. This combination of perspectives, theories, and subjects has informed and inspired this investigation. Next, an examination of the differences between textual and visual aspects of picturebooks argues for further research into the abilities of the illustration. As this study focuses on how a specific motif within illustration works in order to expand generalized research into the workings of picturebooks, existing literature on the subject is explored in some depth. Publications from different eras are compared in order to establish a trajectory of exploration that leads to the study at hand. Additionally, some background information on the meaning-making capabilities of children through drawing is provided. This chapter then concludes with an argument for the need for further study in these areas, recommending these investigations.
The Importance of the House

Although different disciplines such as architecture, cultural studies, and literature see it in different ways, the house seems to be almost universally recognized as an important entity within the lives of humans:

It comes as no great surprise, then, that the house holds such a distinct and honoured place in our imaginations, and that a home can have more of an influence on the way we think about and perceive architecture than a grand museum or an attention-grabbing super structure. (Bradbury, 2009, p. 10)

The realm of architecture places the house in a special category due to the intimate relationship users have with it. Bradbury also noted that:

Of all the kinds of architecture in the world, it is house and home that we relate to most easily and generously. At heart we know that a house is much more than a machine for living. It has an emotional charge and depth, it is among the most personal expressions of our own characters, and it is a place of refuge and escape as well as day-to-day experience. (p. 8)

Instead of the impersonal “machine for living” concept that modernist architect Le Corbusier advanced, Bradbury proposed that an emotional bond forms between the inhabitant and a house through day-to-day use. This creates a place that is seen as representative of personality as well as refuge. Furthermore, he proposed that perhaps “powerful themes, ideas and images can be created” because of the “modest” nature of domestic contexts (p.304).

The house in American culture. Scholarship focusing on American culture has also spoken to the house’s importance. As part of the ethos of the United States, the American Dream has long been associated with house ownership. Hayden (1986) wrote that “single-family suburban homes have become inseparable from the American Dream of economic success and upward mobility” (p. 14). Ellis and Guettler (2009) attributed the origin of the importance of home-ownership to the subsidies offered by the G.I. Bill in 1944 that began a trend of support through national policies (cf. Brown & Webb, 2012).

Addressing the effects of model houses upon the desirability of home ownership after World War II, Wallack (2009) observed that “while certainly houses had embodied meaning beyond shelter [before the war], houses gained new cultural significance” (p. 322) during this time period. This significance has persisted to today: Loh (2010) suggested that “real estate is replacing obsessions with love” (p. 112)—an eternal theme closely tied with the human condition—and Brooks (2011) reported that 73% of Americans
surveyed agreed that owning a home is essential to the American Dream, outranking “retiring comfortably, graduating from college, and becoming wealthy” (p. 3).

Bruner’s work (2004) with narratives also highlighted the symbolic importance of home through research on stories told by a family.

Consider the psychic geography. For each of our narrators, "home" is a place that is inside, private, forgiving, intimate, predictably safe. "The real world" is outside, demanding, anonymous, open, unpredictable, and consequently dangerous. But home and real world are also contrastive in another way, explicitly for the two children, implicitly and covertly for the parents: home is to be "cooped up," restricted by duties and bored; the real world is excitement and opportunity. (p. 703)

Here the family used the idea of home as a refuge and real world as the setting for adventure, a trend which is also featured in many literary patterns.

**House and home in children’s literature.** Within children’s literature, the house is connected with the idea of home and has been commonly studied through the text. Dewan (2004) performed a massive study of this nature on houses within children’s novels. She built upon the premise that the house “exerts a powerful influence on children’s literature” (p. 3), concluding that “for the child, domestic settings are especially meaningful” (p. 275).

The house in children’s literature can also be a crucial symbolic launching point from which story begins and story ends. Waddey (1983) called this the “Odyssean pattern,” where the home functions as a “frame” for the story, an “anchor and refuge” until the child becomes bored with local exploration and goes out into the world (p. 13). The home is also present at the end of the story when the child is “glad to get back” (p.13). However, the theme of “home” is rich enough of a location to provide Waddey with two more patterns of the home- “home as a focus” or primary setting and “home as an evolving reflection of the protagonist” (p.13).

Wolf (1990) lamented the loss of home in literature, quoting Lutwack’s *The Role of Place in Literature* that “despite its rich history and symbolism, ‘the house is no longer a significant place in the time of our writing’” (p. 53). Her article continued that although “much adult literature laments our homelessness… most children’s literature celebrates home and affirms belief in myth” (p. 54). Wolf also gave evidence as to the importance of the house by describing the “celebration of place” and the “abounding” images of the home in children’s literature such as the “little house in the big woods” (p. 54).
It is precisely this richness, celebration, and frequency that makes the home and house so important to
children’s literature.

In *There’s No Place Like Home*, Alston (2004) noted that “the home is presented as a haven of
family and idealized domesticity” (p. 55). Once again the home is presented as a safe haven. Alston refuted
the idea that the home has been lost in the postmodern age, saying that:

The family house, enclosed form the rest of the world, has not lost its value because some texts do
not have it, indeed, by describing those families that do not have it as somewhat inadequate, the
value of the ideal house in children’s literature is actually enhanced. (p. 56)

These architects, anthropologists, and literary theorists have noted a number of themes in common. The
idea of house and home is one that is intimately connected to culture, rich in complexity, symbolic of
safety, and prevalent among many sources. Thus a study into the houses in children’s picturebooks is not
only of much importance but widespread applicability.

**Theoretical Perspectives**

As no research takes place in a vacuum, this research can be situated within several theoretical
perspectives that frame its questions and shape the discussion of its findings. The first of these, social
constructivism, suggests an ontology wherein the lack of absolute truths allow multiple meanings and
interpretations that are individual in nature but also guided by the social milieu. As they contribute more to
discussion of the findings in Chapter 5, more attention is given to material culture and semiotics. These
theories provide a tradition of language and concepts with which to explore the ideas produced through
these investigations; they form the crucial connection between empirical knowledge and conclusions as to
how these findings came to be and what effects they can be attributed to have.

**Social constructivism.** This study is situated within the theory of social constructivism, as are
most studies of children’s literature in today’s age. Nodelman and Reimer (2003) stated allegiance to the
same perspective within the preface of *The Pleasure of Children’s Literature* (p. xi). Most of these
researchers believe that “knowledge [is] an active construction built up by the individual acting within a
social context that shapes and constrains that knowledge but does not determine it in an absolute sense”
(Applebee, 1992, p. 3). Assuming that meaning is socially constructed or a “negotiation” as Watkins (1999,
p. 35) calls it, both the sign of the house and the meaning of this sign are created and interpreted.
Enculturation. Several scholars from a wide variety of disciplines also provided support for the ability of picturebooks to enculturate children. In regards to communication:

“The most distinctive feature of communications is that they inform their recipients, invoke feelings, or cause behavioral changes. Texts can inform their readers about events at distant locations, about objects that no longer exist, about ideas in people’s minds, about available actions—just as symbols represent things in their absence and stories walk their readers through imagined worlds.” (Krippendorff, 2013, p. 29)

Picturebooks are filled with symbolic images and stories or narratives, all informing their readers to both immediate messages and hidden ones (cf. Danesi, 1995; Sarland, 1999). From an interest in how architecture affects the young, Day and Midbjer (2007) declared that children learn unconsciously from the built structures that surround them. Thus their environment can be seen as a “hidden curriculum” and that as such, “it’s hard to identify direct causal links, but its impacts are nevertheless profound” (p. 137).

Although discussing user interface design for technological devices, Inchauste (2010) made an argument for the power of visual images through the process of how the brain processes them:

Design is powerful because of the way our brain processes visuals. We might think of vision working by our eyes pulling in images and projecting them in the back of our mind. If this were the case then there would not be design or art. There are in fact 30 areas in the back of your brain that process different aspects of the image. The various vision processing areas of the brain are individually recreating the design. So, in a way, the viewer is also an artist. In reality, design and art stimulate the mind more than a realistic image would do. Which is why it affects us differently. (para. 6)

Consequently, representations of the real world might be processed differently and may be more potent than the actual objects. Certainly there is the additional layering of the artist’s intent in depiction upon a viewer’s personal interpretation of the work. In particular regard to picturebooks, Hillard (2002) asserted that “children of all ages are influenced by picture books. Perhaps older children do not read picture books as frequently as they once did, but the visual, cognitive, and auditory experience or perusing picture books has been ingrained” (p. 19) Although Hillard did not supply any evidence to this end, this is a common assumption among scholars of children’s literature (e.g. Bishop, 1990; Crabb & Bielawski, 1994; D. Fox & Short, 2003; M. Fox, 1993; Saltmarsh, 2009; Sano, 2009; Smith-D’Arezzo & Musgrove, 2011; Varga, 2013; and others).

Material culture. Material culture studies are based on the premise that “objects made or modified by [humankind] reflect, consciously or unconsciously, directly or indirectly, the beliefs of the
individuals who made, commissioned, purchased, or used them and, by extension, the beliefs of the larger society to which they belonged” (Prown, 1982, p. 1). Prown referred to the discipline as a mode of research in which objects are the primary data sources and the goal is cultural information. These objects are often referred to as artifacts, as in this dissertation, despite the connotation that the word “object” pertains to contemporary times and “artifact” is historical (Berger, 2009, p. 16). Calvert (1992) identified the importance of material culture at being able to access “cultural beliefs and assumptions so basic that they are rarely verbalized” (p. 4) and thus not “explained” elsewhere. Material culture is then a fitting theoretical perspective to take in this examination of how children’s picturebook illustration represents attitudes and feelings toward houses.

Although material culture itself can be described as a theory, studies through this theoretical frame often employ additional theories. Berger (2009) quoted Durham and Kellner, writing that theories are “modes of explanation and interpretation that construct connections and illuminate sociocultural practices and structures” (p. 21). The different theories that he suggested as useful for material culture studies stem from psychology, semiotics, sociology, economics and Marxism, anthropology, and archaeology. This study has focused on Peircean semiotics as described in the following section on theoretical frameworks.

Whereas material culture focuses on how objects reflect their cultural origins, Berger (2009) noted that “objects also affect the cultures in which they are found” (p. 20), complicating the interpretations. Baxter (2005) wrote that “social worlds are as much constituted by material culture as the other way around.” These perspectives affirm this study’s concern with the prevalence of particular images of houses, suggesting that viewers are enculturated by the images they see. The fact that picturebooks are objects created and often chosen by adults for children complicates issues further since the creator is detached from the desired consumer (see Hade, 1993; Lesnik-Oberstein, 1999; Nodelman, 2008; Sarland, 1999; Zornado, 1997). Varga (2013) observed that “as material objects, illustrated stories function as sources of knowledge that perform culture by constructing meanings, values and subjectivities. As such, children’s books are social artifacts that reproduce adult beliefs, values, and actions” (p. 648). This suggests that picturebooks are potent artifacts with which to investigate enculturation through visual media.
**Picturebook studies which have used material culture theories.** Few studies have specifically approached the picturebook from the perspective of material culture. In searches of "material culture" AND ("picture book*" OR "picturebook*") in WorldCat.org, OAIster, Academic OneFile, Academic Search Complete, MasterFILE Complete, Newspaper Source Plus, and Oxford Scholarship Online and an attempted snowball sample from those articles found, only four results proved valid. The two most prominent—“The Social Representation of Material Culture and Gender in Children’s Books” (Crabb & Bielawski, 1994) and “Representations of Material Culture and Gender in Award-Winning Children’s Books: A 20-Year Follow-Up” (Crabb & Marciano, 2011)—are actually related. Crabb and Bielawski analyzed illustrations in children’s picturebooks as artifacts to examine gender roles. Using Caldecott Medal and Honor books, they coded each illustration as to the gender of the character depicted and if each was shown using “household” ("used to produce effects in the home"), “production” ("used to produce effects outside the household"), or “personal” ("not employed in labor and used to produce effects on the immediate person of the user") artifacts (p. 73). From this data, Crabb and Bielawski concluded that female characters were linked with household artifacts, male characters with production artifacts, and that there had been no change in proportion of these links between 1937 and 1989. The follow up study by Crabb and Marciano suggested that there had still been no significant change through 2009 in gendered representations of work. In comparison, women’s work outside the home had dramatically increased during this period. This indicated that contrary to their hypothesis, picturebooks do not reflect the time period in which they were created, that there is cultural lag between illustration and social conditions in real life, or both.

Two other works using picturebooks in a material culture investigation were found. Hillard (2002) also explored gender in a short thesis and Varga and Zuk (2013) wrote about racism in the images of golliwogs (a black rag doll toy) and teddy bears in picturebooks. Varga and Zuk linked the image of the teddy bear with “white childhood innocence” (p. 647). They found that the teddy bear’s depiction shifted from “boyhood mischievousness to early childhood dependency” and the golliwog’s depiction from “itinerant stage entertainer… to domestic servant, to nursery protégé” before both became nostalgic signs
of “illusory personal and societal ‘innocent’ times” (p. 648). Drawing on material culture, these images have then been read as indicative of adult white cultural power (p. 667).

Other picturebook studies (e.g. Epps, 1997; Jackson & Gee, 2005; Kashey, 1993; Reisberg, 2008; Toriyama, Uchida, Duffy, & Itakura, 2006) have tacitly taken a material culture approach but do not frame their discussion specifically within that context. Jackson and Gee cite Crabb and Bielawski (1994) and several other similar studies on gender (Baker & Freebody, 1987; L. Evans & Davies, 2000; Gooden & Gooden, 2001; La Dow, 1976; Peterson, 1990). These works typically focus on the technique—content analysis—rather than material culture as a theoretical frame despite the assumption that these investigations are important because what is observed in picturebook illustration reflects society. They have also gone beyond the bounds of material culture to insist that these images also enculturate children. Thus drawing attention to these depictions, crediting those that include diversity, and advocating for more illustrations that show multiple ways of being becomes important.

Interestingly, studies that have used material culture seem to focus on gender and multicultural issues. This could be due the snowball sampling method used where the sources of each study were dredged for additional likely studies. On the other hand, gender and race are two subjects of concern within children’s literature which can be represented visually and are consequentially apt for study through material culture. Crabb and Marciano (2011) proposed that “illustrations in children’s books may be especially efficacious in transmitting information about gender” (p. 391). They supported this with evidence from a variety of scholars that “children’s visual attention is directed at pictures more than at text,” “parents or others who read to preliterate children may call children’s attention to pictures more than to text,” and “children may ask more questions about pictures than about text … because they are better able to relate to the illustrations than to yet-unlearned words.” However, these observations do not pertain to just gender but can be expanded to any information that is conveyed visually in picturebooks.

Books on material culture studies of the objects of childhood address picturebooks in combination with other artifacts of childhood (e.g. Baxter, 2005; Calvert, 1992; Derevenski, 2000). These scholars came to conclusions about childhood at particular times from investigations of objects made particularly for
children. The sources discussed above with implicit links to material culture studies have often referenced these works, even if they do not discuss material culture or picturebooks directly.

**Semiotics.** The application of semiotic theories to picturebooks is quite fitting. Chandler (2002) noted: “Semiotics provides us with a potentially unifying conceptual framework and a set of method and concepts for use across the full range of signifying practices” (p. 214). These theories also address the two major media that compose the picturebook—text and images. If Peircean semiotics are employed, Peirce’s different types of signs or “modes”—symbols, icons, and indexes (pp. 36-37)—help describe the differences between words and pictures and how each works. Visual semiotics have frequently been applied to art history, graphic design, and advertising, all subjects which have elements in common with picturebooks. Schapiro (1996) is known for his application of visual semiotics to the field of art history, examining the different depictions of religious scenes in art. Picturebooks, too, are typically a visual interpretation of an existing verbal text, be it the retelling of a traditional tale, a song, or an original manuscript.

Skaggs (2011) argued for the use of semiotics in the field of graphic design, noting the emphasis in both areas on communication (p. 1). Similarly, the picturebook aims to communicate by teaching children how to read, moral lessons, and even how to be a child (see Nodelman, 2010, p. 19). Skaggs noted the purpose of graphic design as “to heighten the eloquence of a visual message, to make it more clear, more startling, more emotional, more memorable. Heightening the experience of a visual message is the essence of graphic design” (p. 1). Whereas the illustrator can also contribute to this “heightening,” graphic design of picturebooks is also quite important to the final product. Molly Leach’s work as a book designer on *The Stinky Cheese Man and Other Fairly Stupid Tales* (Scieszka, 1992) brought awareness to new ways of integrating the book design with the story. Leach even compares designing a page in a picturebook to designing a poster in terms of creating meaning and a sequence for the eye to follow (Britton, 2002, p. 29).

**Semiotics in advertisements.** Using Nodelman’s definition of a picturebook—books which “communicate information or tell stories through a series of many pictures combined with relatively slight texts or no texts at all” (1988, p. vii)—the picturebook is remarkably similar to the advertisement; the pictures carry the major responsibility for the meaning and the texts, although often minimal, are crucial to
qualifying the image’s meaning. Among others, Barthes (1977), Danesi (1995), and Kress and van Leeuwen (2006) have used visual semiotics to investigate the connotation of advertisements that lurks behind the denotation. Like the Panzani advertising image that Barthes studied, the picturebook can be said to have three messages: “a linguistic message, a coded iconic message, and a non-coded iconic message” (p. 36). Barthes saw the visual aspects of advertisements as providing two messages: The “non-coded” message was simply what the elements that comprise the image are and the “coded” message is what the collections of elements as a whole means. Similarly, the text can work in two ways, “anchoring” or limiting the text similar to Nodelman’s ideas (1982, p. 60) and “relay” where the text and image “stand in a complementary relationship” (Barthes, 1977, p. 41).

**Semiotics and aesthetics in picturebook research.** In applying semiotics to picturebooks, one danger is the conflation of semiotic theories with aesthetic theories. Nodelman’s description of *Words about Pictures* (1988), “while it is primarily semiotic in orientation, the book represents such a blending of approaches” (p. x), certainly includes ideas of aesthetics as one of these blended approaches. Sipe (2007) is one of the few scholars to try to distinguish semiotic theory from aesthetic theory. He noted the basic idea behind application of semiotic theories to picturebooks: “The literary understanding of picturebooks includes learning to read the visual text of the illustrational sequence according to the conventionally presented systems of codes along with signs” (p. 18). In comparison, visual aesthetic theories suggest: “We see what we learn to see, and the act of viewing a picture involves our active construction of its elements in a meaningful whole rather than a simply passive reception.” Sipe listed several meaning-making techniques such as color and line both under a section on semiotic perspectives as codes and under aesthetics as elements of design (p.19). Catalano (2005) revealed more about the difference between aesthetics and semiotics, saying that “traditional aesthetics [link] art with emotion rather than it being an experience that is completely logic based” (p. 79), with semiotics focusing on how pictures create meaning (p. 85). In the end, the difference seems to be not on what meaning is produced by the image but how it is theorized to have produced meaning. Delahunt (2010) suggested that there is also an element of chronology to the issue, with aesthetics “[having] largely been supplanted by questions of meaning and linguistically based investigations, such as those involving semiotics” (para. 4).
Overall, theories of semiotics have offered much to the study of picturebooks. Not only does the study of visual semiotics help focus the study of the picturebook on the images, fulfilling Kenneth Marantz’s call for the picturebook to be viewed as an art object (1977, p. 148), but one of the most important things that semiotics does is acknowledge the complexity of the media of the picturebook. The common perception is children’s literature in general is simple since it is meant for less mature humans. However, many practitioners would disagree (e.g. Kiefer, 1995, 2010; Nikolajeva & Scott, 2001; Nodelman & Reimer, 2003; Nodelman, 2008; Pantaleo, 2008; Sipe, 2007). Semiotics also brings attention to “the cultural, historical, and political dynamics that are important to a picturebook’s meaning as a social commodity” (Catalano, 2005, p. 79). Social semiotics can be useful in reader response studies of texts, illustrations, and the unique art object of the picturebook since “social semiotics alert us to how the same text may generate different meanings for different readers” (Chandler, 2002, p. 215). Chandler also suggested that structural semiotics that “[seek] to look behind or beneath the surface of the observed in order to discover the underlying organization of phenomena” can be useful for uncovering hidden ideas, leading to “fruitful insights” (pp. 214-215). This could be used in studies of ideological messages in children’s literature like Smith-D’Arezzo and Musgrove’s investigation of portrayals of African Americans (2011).

Picturebook studies which have used semiotic theories. Several scholars have used various semiotic theories in studies of the picturebook. One group of writers used semiotic theories as backbone for their ideas of how the images in picturebooks create meaning. Moebius (1986) drew specifically on Barthes’s concept of codes as “elements of design and expression” (p. 142). Although Nodelman (1988) was not as revealing, he expressed awareness that “contexts and connotations are everywhere; objects always signify more than their literal selves” (p. 9). This suggested Peircean roots with chains of interpretants indicating further signs rather than an object, a potential called “unlimited semiosis” (Cobley & Jansz, 2010, p. 26). More recently Nikolajeva and Scott (2001) used Peircean semiotics to set up a dichotomy between image and text as two different sign types, iconic and symbolic or conventional respectively (p. 1). This allowed them to structure their theoretical arguments around the differences in how these two sign types interact. All three of these scholars produced a “grammar for reading and
understanding pictures in picturebooks” (p. 4) with ideas of how meaning is created and accompanying descriptions. Nikolajeva and Scott attempted to go further and create a “consistent and flexible terminology, a comprehensible international metalanguage” (p. 6) that they hoped would facilitate communication about images.

On a different tack, Kress and van Leeuwen (2006) approached the picturebook as an example of how their social semiotic theory of communication can be applied. They looked at two picturebooks, one that exemplified “old” visual literacy that is “open and interactive from the perspective of the image and authoritarian from the perspective of writing” and one that exemplified how “new” visual literacy worked vice versa (p. 28). This then became an argument that, in the approaching visual age, there will be an “increase in codification and control over the visual” (p. 29).

Researchers working with picturebooks often note theories of semiotics as the basis for how picturebooks make meaning even if this is just an obligatory part of the literature review. Sipe (2007) mentioned semiotics in the literature review before his investigation of literary understanding in the classroom. Even though semiotics was not revisited specifically, semiotic ideas of understanding helped rationalize the meaning from picturebooks that he observed children make. Connors (2010) studied the graphic novel rather than the picturebook, a relationship which could be described as distant relatives, sharing the classification of “sequential art” (McCloud, 1999, p. 9). He also referenced semiotics—this time as a perspective on multimodality, reflecting on how the combined modes of text and pictures work together.

Going further, Catalano (2005) used poststructural semiotic theories as the basis for his analysis of four picturebooks in order to investigate how deeper meaning might be gained from the careful reading of images in picturebooks. Crawford and Hade (2000) drew on a variety of semiotic theories to provide a common language for discussing how children make meaning from wordless picturebooks. Golden and Gerber (1990) used a similar perspective to examine the relationship between words and text as children construct the stories in picturebooks.

Articles that explored semiotic theories in more depth include Sipe (1998a) and Trifonas (2002). These two scholars went beyond using semiotic theories as a reference or as a structure for a study to
discuss them as the main subject of their articles. Sipe drew on Peircean semiotics to create a similar triad of relationships between object, interpretation, and picture/text. Rather than the chains of unlimited semiosis, Sipe argued for a vacillation between pictures and text as the interpretations of each building upon each: “Each new page opening presents us with a new set of words and new illustrations to factor into our construction of meaning” (p. 106). Trifonas (2002) used the picturebook to investigate the possible uses of semiotics with a multimedia genre via complex discussion of methodology, signs, and codes.

Due to the applicability and traditional use of semiotic theories in picturebook research, semiotic theories have become a standard tool drawn on in the course of this study. Semiotics have proven to be adept at providing background for studies interested in the production of meaning or making a solid base for studies creating related theories for specific branches of understanding how pictures mean. Semiotic theories also provide useful “grammars” or common languages with which pictures can be discussed that ideally build upon one another rather than reinventing terminology. In the end, research into picturebooks and meaning benefits from following this rich history of discussion of semiotic theories.

**Differences in the Textual and Visual Elements of Picturebooks**

Both words and pictures are crucial components of the most common type of books for children—the picturebook. Excluding the wordless picturebook, Kiefer (1995) suggested that the key feature of picturebooks is the “interdependence of pictures and text in the unique art object [emphasis in original]” (p. 6). With the entwined relationship between picture and text, few studies have separated the two elements. The several that have, Kiefer critiqued for violating the unity of the art object (pp. 10-12), resulting in little defensible research that explores response to the elements separately. Whereas this study has not sought to examine the text and illustrations of picturebooks separately, the focus herein is clearly on the communicative properties of the illustrations since the motif of the house is not always reflected in the text. Regardless, text and pictures are both important elements of the experience of reading a picturebook that have been interpreted, read, and considered differently.

The multi-modes of the picturebook. Kress (2003) described the picturebook as a multimodal media, combining two modes of communication—the text and the pictures (see also Sipe, 2010, p. 248). Each of these modes is a sign system—“representations whose meaning depends on a repertoire of learned
strategies” (Nodelman & Reimer, 2003, p. 275). As sign systems, both pictures and words are subject to interpretation, at which point the reader/viewer becomes an active party in a transaction—“evoking a poem,” as Rosenblatt (1978) described.

Nikolajeva and Scott (2001) believed that these sign systems work differently from each other—namely that pictures are iconic or representational (“those in which the signifier and the signified are related by common qualities”) and words are conventional signs that “have no direct relationship with the object signified” (p. 1)—whereas Nodelman and Reimer disagreed. They saw both words and pictures as conventional (p. 276), even if Nodelman (2010) noted that “as a system of representation, pictures are, clearly, less arbitrary than words are. They are the kind of sign known as ‘iconic’—i.e. they do in some ways resemble the objects they represent” (pp. 13-14).

As conventions, how to read both pictures and text are skills that must be taught, contrary to traditional belief. Most people believe that children are instinctually able to understand pictures, although Kiefer (1995) noted that “there has been some argument about whether this ability is innate or learned” (p. 9). She cited studies that found that “picture recognition was a cultural convention, although it was easily learned,” suggesting a reason for the assumption that picture interpretation is instinctual. Nodelman and Reimer (2003) noted that “people forget that babies respond to voices before they do pictures, and learn to speak before they draw” (p. 275). Babies pick up both oral language and significant amounts of picture “language” with little direct instruction, in comparison to written language which takes years of modeling and teaching to master (see p. 276). However, just like the idea that response can be deepened with teacher intervention, older children in Pantaleo (2008) report that they “learned to ‘read the illustrations’” (p. 7), increasing what they got out of the pictures in sophisticated picturebooks.

Additionally, the pictures and the text contribute in different ways to the child’s understanding of the story. First, the way that these two modes are usually received must be addressed. In line with all three examples with which Kiefer began The Potential of Picturebooks (1995), the picturebook is typically read aloud to one or more children who follow the visual illustrations while listening to the story (p. 4). These children may be too far away to read the words on their own or they still may be developing text-reading skills. There is “the assumption that pictures communicate more naturally than words, and thus help young
readers to make sense of the texts they accompany” (Nodelman, 1999, p. 70) but these children are clearly already capable of processing the aural story. Instead, it seems more likely that pictures are there to “attract attention and excite interest” (Nodelman & Reimer, 2003, p. 274). Nodelman and Reimer also put forward that people “look at the pictures before reading the words” even when reading to themselves, perhaps due to these initial experiences. Nodelman (1988) went on to suggest that illustrations in picturebooks can be seen as “a means of manipulating children into paying attention and consequently to the words inside” due to their attractive power (p. 4).

Furthermore, although picturebooks range from dependence on pictures to carry the story (in wordless picturebooks) to complete dependence on text (Nikolajeva & Scott, 2001, p. 8), Nodelman (2010) suggested that often “the words are so simple that they don’t make much sense on their own anyway” (p. 12). Mackey (2003) similarly noted that Macaulay’s *Shortcut* (1995) is only about 450 words (p. 102). With text limited by the short attention span of children, the images take greater responsibility for details such as characterization and setting that can be more easily described in pictures (Nikolajeva & Scott, 2001, chapters 2 & 3).

**Response to pictures and text.** The visual aspects of picturebooks are generally considered to evoke more emotional responses than the text. In reference to looking at pictures, Nodelman (1999) explained, “my pleasure seems to be emotional rather than intellectual- a sensuous engagement with the colours, shapes, and textures” (p. 71). Kiefer (1988) described a wordless two-page spread in *Hiroshima No Pika* (Maruki, 1980), suggesting that the author-illustrator used images to express ideas that she did not want to or could not put into words. Through an interview with a third-grader, she finds that children can be aware of this and agree. She concluded that “Kit's recognition of the feelings conveyed through the art of *Hiroshima No Pika* would certainly support Gombrich's (1982) argument that pictures are supreme in their capacity to arouse emotions” (p. 266). Perhaps connection to a book through pictures is easier because of the ability of images to communicate emotion, instigating a connection that then bridges to cognitive thought (see Eva-Wood, 2008). This was also evidenced in a classroom observation of 2nd and 3rd graders (personal notes, September 29, 2011), where the children appeared to respond more to the pictures than the words, suggesting an emotional connection that permits aesthetic reading.
In addition, pictures appear to instigate more physical response than text. Mackey (2003) recorded that “the joint public reading of a picture book is probably at the far end of a continuum of reading that extends from audible and social to silent and private” (p. 109). Within these readings she observes students holding the book, flipping pages, and pointing at the pages. It seems that the physical format of a picturebook, as opposed to a novel, calls for more adjustment of the larger size, perhaps moving the book about to adjust to the appropriate focal distance for illustrations which vary in texture, value, and clarity more than text. The simultaneousness of the pictures in comparison to the linear nature of the text also appears to inspire more flipping of the pages back and forth. Additionally, studies of picturebooks by Sipe (2000, 2007) found that students engaged with picturebooks exhibit a number of performative responses which are often physical. Whereas this is not within the realm of his research, these responses seem unlikely to happen as much with books without illustration for various reasons such as typical age, but perhaps the presence of pictures is also an important factor.

Although these similarities and differences are not exhaustive, they present a brief overview of the similarities and differences between how the textual and visual elements of literature are read.

**The importance of the illustrations.** With a heavy burden on the pictures and their position as the portion of the book that is most accessible to children earliest, it makes sense that children are heavily invested in the illustrations. Evans (2008) found that children ages 3-5 “spent a substantially greater percentage of time looking at the illustrations than the text,” comparable with previous research that asserts that “children attend much more to the illustrations than the print when an adult is reading storybooks to them” (p. 126, see also M. A. Evans & Saint-Aubin, 2005). This investment of time makes sense when the power of the illustrations is considered: Nodelman and Reimer (2003) found that the pictures are “more communicative” than words (p. 277). Nodelman (2010) even added that “the pictures in picturebooks are almost always more complex, more detailed, more sophisticated than texts are” (p. 17). Whereas the text-based story is generally linear and “[takes] place in time,” “most pictures depict only how things look at one moment separated from the flow of time” (Nodelman, 1988, p. 158). Adding to the complexity of the pictures, they are still able to imply movement and the passage of time (p. 159), imbedding even more meaning within each illustration. Recalling that children’s eyes skip around the page, finding details that
adults overlook (Kiefer, 1995, pp. 8–9), these ideas support the child’s tendency to ask for the same books to be read over and over as they “go more and more deeply into its meaning” via the illustrations (Nikolajeva & Scott, 2001, p. 2), perhaps as they investigate the depth of the pictures.

Kiefer (1995) noted that “experts in the field of visual literacy have often neglected the potential of picturebooks to develop visual literacy” (p. 10). She suggested that picturebooks are not often used to the best advantage because of the visual content. Comparatively, Kenneth Marantz (1994) commented:

> For me picturebooks should be perceived and valued as a form of visual art, not literary art. To insist on valuing them as literature makes us appreciate the pictures primarily in relationship to the text, more as handmaidens than symbols having unique personalities. In remaining textbound we fail to exploit sufficiently the visual qualities of books that Comenius astutely identified as those that cause us delight. (p. 1)

These researchers have found that the visual aspects of books are often ignored in order to focus on the word-based text. With this lack of consideration and maybe even respect for the visual aspects of picturebooks, it is not surprising that publications on the subject are limited in comparison to evaluation the textual aspects of literature.

**How Pictures in Picturebooks Work**

With no less than four articles and books with similar titles—*Picture This: How Pictures Work* (Bang, 2000), *How Picturebooks Work* (Nikolajeva & Scott, 2001), “How Picture Books Work” (Nodelman, 1982), “How Picture Books Work: A Semiotically Framed Theory of Text-Picture Relationships” (Sipe, 1998a), and an additional review of Nikolajeva and Scott’s book entitled “How, But Not What or Why” (Nodelman, 2003)—scholars have expressed a long-time interest in understanding how picturebooks work. Nodelman observed that “this fascination with how [emphasis in original] picture books do what they do is fascinating in itself” (p. 93). However, it is not often clear what scholars have been referring to when they use the word “work”; the question remains as to how this concept of “work” has been theorized in terms of what the illustrations in picturebooks do.

As one of the core interests of research on the picturebook, the subject of how pictures in picturebooks work is of high importance. Although the question is common, there has been some difficulty in satisfactorily answering how pictures work. Nodelman (2003) observed that his work, as well as that of many other scholars branching out from the literary, approaches the subject of illustration from the
perspective of “logocentricity, a deeper knowledge of and interest in verbal texts than in the pictures they accompanied” (p. 194). On the other hand, Marantz and Marantz noted that the pictures are more interesting than the text—the visual aspects have a lot of variation but the stories tend to repeat with their focus on child-oriented topics (personal communication, May 30, 2012). Kress and van Leeuwen (2006) suggested that “images play an ever increasing role” (p. 16) and that communication may be about to shift from primarily using written methods to visual communication (see also Crow, 2006). In this type of environment, visual literacy will become an important skill that can be nurtured by using picturebooks.

A review of literature on the subject of picturebook illustrations suggested that the work of pictures revolves around making meaning and communicating to readers/viewers but also that scholars approach this topic from different perspectives. This section will examine what scholars mean by “work,” review the classic sources that are commonly cited, and propose ways that more recent research has theorized how pictures work to convey meaning.

**Defining work.** By nature, illustrations are difficult to discuss. Words and pictures are two different modes of communication (see Kress, 2003; Sipe, 2010) and consequently have no direct translation (see Clarke, 2007). Often it appears to be assumed that readers already understand what work means or what the pictures are expected to do. Nodelman (2003) did not mention anything that could be construed as filling in this information despite commenting “we have certainly at least begun to know how picture books work” (p. 194). However, a children’s literature textbook (Kiefer, 2010) can be used to address the matter explicitly. This text addressed illustrations both as tools for teaching and as a means of communication, outlining a basic perspective of how pictures are expected to work.

**Tools for teaching.** Despite directly addressing the idea of work, *Charlotte Huck’s Children’s Literature* (Kiefer, 2010), a standard textbook, can be used to provide a frame for what children’s literature can do and some of the potentials of the illustrations in picturebooks. Kiefer listed several personal and educational values of children’s literature that can also apply to how pictures work: Children’s literature “provides delight and enjoyment,” “develops children’s imagination,” permits vicarious experiences, offers “insight into human behavior,” suggests universal questions “about the meaning of life and our relationships with nature and other people,” and teaches various educational skills (pp. 8-11). Generally it
is assumed that illustration can do many of the same things that text can do, but that illustration does them in different ways—through a different sign system (Nikolajeva & Scott, 2001; Nodelman, 2010)—and to a greater or lesser extent. For example, although the text-based story is generally linear and “[takes] place in time,” “most pictures depict only how things look at one moment separated from the flow of time” (Nodelman, 1988, p. 158). The visual aspects of picturebooks are also considered to evoke more emotional responses than the text (see Bang, 2000; Kiefer, 1988; Nodelman, 1999) and pictures appear to instigate more physical response than text (see Mackey, 2003; Sipe, 2000, 2007).

The personal values Kiefer (2010) listed seem to apply to both text and illustration in comparison to the visual aspects of picturebooks which can be used for different educational purposes than the text. Some research has proposed illustration as a support system for teaching text-oriented skills (e.g., Chesnov, 1996; Goldsmith, 1984; Lewis, 2001; Nikolajeva & Scott, 2001), viewing illustration in relation to the text. On the other extreme, more recent research has seen picturebooks as tools for early instruction in visual literacy (e.g., Kress & van Leeuwen, 2006; O’Neil, 2011; Short, 1993; Simpson, 2005; Soundy & Drucker, 2010). Although these uses of illustration directly suggest the work that pictures are understood to do as tools for instruction, this work can also be seen as communication.

**Working to communicate.** Kiefer (2010) asked, “How do [words as well as pictures] help the reader perceive pattern, relationships, and feelings that produce an inner experience of art?” (p. 5) in the introductory section on defining literature. The purpose of literature, and by extension the pictures found in literature, can then be said to be to communicate. Examinations of the purposes of art—to commemorate, “record visual data,” tell stories, convey emotion, and interpret the subject (Jirousek, 1995)—also demonstrate a focus on the ability to communicate. Kiefer continued with a direct approach, stating that “the illustrations [contribute] to the meaning of various picturebook formats for very young children” (p. 157). She went on to say that illustrations work by helping to develop plot, “create the basic mood,” and “create convincing character development” (pp. 157-159), of particular importance in books with limited words. Kiefer noted that this is done through stylistic choices, as “the primary decision for the artist to make is how to create visual images that will harmonize with and enhance the meaning of the text” (p. 160).
“Work,” then, can be seen to include all of the observed and potential tasks that pictures in picturebooks might do. They can be used as tools for teaching or as methods of communication. In the next section, I examine how various scholars who have produced the classic resources on the subject have theorized how pictures in picturebooks work before proceeding to how more recent sources have addressed the issue.

A history of theorizing how picturebooks work. The classic sources on picturebook illustration appeared mainly in the 1980s and 1990s. These scholars mark a change from previous experimental research that separated the illustrations from the text. In the following section, I will first turn to Goldsmith (1984) for a brief historical perspective of the type of work that preceded these classic texts before exploring in more depth the classic sources, the “grammars” created by these scholars, and critiques of these grammars.

How pictures in picturebooks work according to research before 1980. In comparison to other classical texts, Goldsmith (1984) presents a literature review of previous research that is quite different from the theoretical stances that the other authors pursue. Goldsmith’s goal was to understand the comprehensibility of pictures or how they communicate and can be understood. She focused primarily on research pertaining to illustrations, mostly ignoring accompanying texts despite originally being interested in “the effect of pictures on the readability of text” (p. 2). Whereas the research that she reviewed presented mixed conclusions on if and how illustrations should be used, Goldsmith appeared to be in favor of using illustrations within the use of her guidelines (see p. 78). A large portion of the remainder of Research into Illustration addressed pictorial techniques and how/if they can be understood by children or people from other cultural traditions through experimental research. These experiments often presented images to participants for a period of time with questions designed to measure a response that was isolated from the context of the story or book. Scholars investigated attributes of what might be considered the best pictures, preferences for different types of pictures, the educational values of pictures and their application to education, and developmental abilities in understanding pictures.

Later, Kiefer (1995) presented several objections to the type of research Goldsmith (1984) reviewed. These experiments removed pictures from books in order to control for all of the variables.
Consequently, they missed responses that occurred in natural classroom settings, together with other children, and over time. The complexity of the picturebook as a multimodal media was also ignored. Kiefer noted: “Reading researchers of the 1960s and 1970s were so intent on helping children acquire reading skills [emphasis in original] at the expense of any other understanding (e.g., aesthetic)” (p. 7) that they attacked picturebooks as being not educational and unsuitable for being considered literature. In response, advocates for picturebooks have had to justify that the pictures—the objectionable part of picturebooks—did valuable work, a legacy that still remains.

_How pictures in picturebooks work in the classic texts._ According to Google Scholar, the 10 most frequently cited sources about picturebook illustration for the late 70s through 2001 were Bader (1976), Schwarcz (1982), Goldsmith (1984), Moebius (1986), Nodelman (1988), Doonan (1993), Kiefer (1995), Sipe (1998a), Lewis (2001), and Nikolajeva and Scott (2001). These sources provide a set of classics which are commonly referred to in most texts about pictures in picturebooks today. These resources were gathered through a snowball sample, wherein references from one source were followed to others, looking for the most common texts which were then checked on Google Scholar for the number of citations. Eight out of ten of these sources are books, suggesting a large volume of writing that is theoretical in nature rather than the empirical research more typical in peer-reviewed journals. This also precluded the use of the Social Science Citation Index (SSCI) to track references instead of Google Scholar, since SSCI does not include books.

Seven of these sources, along with two of the chapters in Lewis, presented similar ideas of how to address how pictures in picturebooks work, as seen below. Bader presented a historical view rather than focusing on the picturebook in general or the specifics of work. Her definition of a picturebook is commonly used as one of the oldest definitions that accounts for the multidimensional aspects of the media—“A picturebook is a text, illustrations, total design; an item of manufacture and a commercial product; a social, cultural, historical document; and, foremost, an experience for a child” (p. 1). Goldsmith presented a literature review of previous research which will be addressed after an investigation of the more typical sources.
This golden age of texts on how pictures in picturebooks work provided valuable theories that are still important today. These texts share much in common with each other including perspective and as well as typically proposing a grammar for illustrations.

*Perspectives in classic texts. Words about Pictures* (Nodelman, 1988) is easily the most referenced work, doubling any other text with at least 358 citations. Nodelman’s background is in literature and he has commented, “I began my own work of this sort because of my ignorance, as a literary scholar, about the nature of visual information—and my awareness that picture book scholarship generally tended to share this ignorance” (Nodelman, 2003, p. 194). Schwarcz, Moebius, and Nikolajeva and Scott share similar perspectives, coming from departments of English and Comparative Languages. In comparison, a contemporary but less fashionable scholar from the discipline of art education, Kenneth Marantz (1977) noted that “a picture book ought to be appreciated as an art object because its expressive potential goes well beyond the mere narrative” (p. 148). The classic authors clearly do not have the training to view these pictures as art but make admirable attempts to do so. Nonetheless, it is not surprising to see a logocentric perspective in these classic works.

Schwarcz (1982), Moebius (1986), and Nodelman (1988) are responsible for moving some of the discourse regarding pictures from the previous experimental studies into theoretical discussions. What is unexpected is Nikolajeva and Scott’s (2001) attempt 15 years later to move the discourse back toward the text by proposing a metalanguage that is only interested in the interactions between picture and text. They found fault with Nodelman’s work for “[emphasizing] extracting information from particular pictures rather than extracting a meaning out of the interaction of picture and words” (p. 4). Furthermore, they asserted: “Together, Schwarcz, Moebius, Nodelman and Doonan introduce enough tools to decode pictures in picturebooks. But we still lack tools for decoding the specific ‘text’ of picturebooks, the text created by the interaction of verbal and visual information.” In the end, like most of the schemes for examining how pictures work, Nikolajeva and Scott’s metalanguage has not found widespread acceptance and is instead one of many tools available that are typically labeled as grammars.

*Focusing on the work of pictures through grammars*. Instead of adopting a uniform language for discussing how pictures in picturebooks work, each scholar proposed a similar but unique set of ways in
which pictures communicate and their own explanations for each. These lists of techniques and conventions of creating meaning can be thought of as grammars: “A grammar is an inventory of elements and rules underlying culture-specific forms of verbal [emphasis in original] communication” (Kress & van Leeuwen, 2006, p. 3). Instead of a verbal grammar, Goldsmith (1984), Schwarcz (1982), Moebius (1986), Nodelman (1988), Doonan (1993), Kiefer (1995), Sipe (1998a), Lewis (2001), and Nikolajeva and Scott (2001) each propose a visual grammar. In some texts, the grammar comprises the entire book or article but in others, like Goldsmith, Kiefer, Sipe, and Lewis, the presentation of a grammar is limited to one chapter or section.

These grammars typically contain elements of design like color, shape, line, and perspective as well as structural qualities like the placement of images on the page and the interactions between the pictures and the texts. They focus on the possible effects of these techniques and how they might be interpreted. The similarity between grammars is not surprising since they typically address the same features that describe specific ways in which pictures work. Many of these authors have drawn on semiotic theories as a frame for their grammars, a logical step for those involved with language. Some have included both aesthetic and semiotic theories but none provided a distinction between the two (cf. Sipe, 2007), suggesting that these two theories hypothesize on similar effects but attribute them to different theoretical causes. In aesthetic theories, the emotional link with art is seen as responsible for meaning in illustrations and logical semiotic connections are responsible for other aspects of meaning (see Catalano, 2005).

Grammars of how pictures in picturebooks work have often originated from models for illustration analysis (see Goldsmith, 1984, p. 123; Kiefer, 1995, Chapter 6; S. S. Marantz, 1992, Chapter 2). The driving concept, then, is that by labeling these artistic techniques and conventions for communicating meaning, the reader’s/viewer’s attention is brought to bear on them. Sipe (1998b) observed that labeling “[aids] our understanding and our thinking. Labels help us to identify and focus on aspects of reality that we might otherwise gloss over or ignore” (p. 66). On the other hand, Kiefer’s (1988, 1995) research suggested that exact vocabulary is not as important to making meaning than recognizing areas in which to look for meaning, as children productively make up their own vocabulary for describing pictures (see also Sipe, 2007). Adding to this, Nodelman (1988) found: “The more we are capable of understanding and finding words to describe our responses to works of art, the more we are able to enjoy them” (pp. x-xi).
Some of these grammars are more complete than others and others are more organized. Kiefer’s (1995) scheme seems to be especially well composed, as she provided a framework which allows the addition of new categories and covered areas such as the technical considerations of the picturebook and the cultural conventions that may be referenced. Nikolajeva and Scott (2001) had a very clear organizational scheme that laid out picturebooks along a continuum from wordless to texts without pictures in order to investigate shifting relationships between text and pictures. However, its narrow focus precluded some of the topics Kiefer addressed or created disorganization when they were introduced into chapters on other subjects.

Critiquing grammars. Although grammars present some advantages for theorizing the meaning-making of pictures, they also present some drawbacks. First, there are many grammars but no authority determining which to use and little consistency between them. Although Nodelman’s grammar (1988) appears to be the most popular, his later critiques of this early work have left doubt as to its accuracy (see Nodelman, 2003). In general, these grammars are supported by applications to particular picturebooks, establishing that a grammar is helpful in unearthing deeper meaning within individual picturebooks. However, there is no transparency into any methodical exploration that led to the creation of any of these grammars, leaving doubt that it could be made up rather than rigorously developed through empirical studies. This is of concern given that the earliest scholars do not have a background in art. There is also no systematic research that supports the use of these grammars with children.

Second, the perspective of these grammars seems to be based on an outdated view of reading. The focus is on the text as where meaning resides (c.f. New Criticism) rather than how the reader might “[bring] all of his/her experiences (cultural, social, cognitive, emotional, literary, linguistic) to bear in the engagement with the text” (Soter, 1999, p. 8) as in the reader response theories commonly used with young children. Readers/viewers are now considered to provide a portion of the meaning of a book themselves but grammars do not present opportunities for individual interpretation. Instead, the focus is on universalizing rather than describing the variety of meanings possible.

One of the disappointments of Nikolajeva and Scott’s book is that it follows a path laid down in *Words about Pictures* and elsewhere—an attempt to catalogue a variety of ways in which pictures and words work together to tell stories—without ever raising questions about or even attempting to justify the path itself.” (p. 194)

These remarks could apply to all of these classic texts—they present grammars without examining how they are addressing the topic at hand, how pictures in picturebooks work. Nodelman also asked if picturebooks are even alike enough to be well served by such a uniform vocabulary as a grammar. If the question is “How picturebooks work?” then readers of these texts must ask if they answer this question satisfactorily. Given the creation of even more recent grammars such as Sipe (2010), it seems likely that they have not fully addressed this question and that it is time for a new approach.

**Connections between early, classic, and recent research.** Comparing Goldsmith’s (1984) work to the other classic scholars can also be seen as illustrative of a shift from looking at pictures as tools for teaching reading to the benefits of using pictures in education based on their own merits. The concern with how pictures in picturebooks work of the classic scholars can be interpreted as part of an argument for the importance of illustration. Focusing on the idea of work suggests that illustrations play important roles in communication in the picturebook, beyond decoration and helping children interpret the written text. In essence, the focus on how pictures in picturebooks work has created a field of study for the investigation of illustration that acknowledges the dual modes of the picturebook, text and picture, but addresses the importance of the visual half of the story. This perspective has been continued by applying many of the theories from these classic resources to empirical research on how children interact with pictures in picturebooks.

**More recent sources addressing how pictures in picturebooks work.** Whereas the previous section has looked at the function of pictures in picturebooks as seen in older sources, this section looks at more recent research in an attempt to derive a direction for future work. I analyze this sample of research according to research methods used, the balance between the text and the reader, and several other features.

**The sample.** Here I focus on articles, books, and book chapters from 1990 to the present that I found through searching for ("picture book*" OR "picturebook*") AND (SU illustration* OR "pictures") AND mean* in Academic Search Complete, Art Full Text (H.W. Wilson), Education Full Text (H.W.
Wilson), Education Research Complete, ERIC, MLA International Bibliography using EBSCOhost. Of these articles, I eliminated those not in English; those that focused on adult readers/viewers instead of children; those that did not specifically address the illustrations; those that featured art, movies, comics, and graphic novels to the exclusion of picturebooks; and those that focused on the peritextual elements of the picturebook like endpapers and page turns rather than the illustrations themselves. Of the 52 results, 27 were suitable for further analysis and 4 (dissertations and papers presented at conferences) were unavailable in full text, leaving a set of 23.

**Research methods in recent research.** Several scholars theorized about illustration in picturebooks solely through their own ideas and a review of related research on the particular topic (17%). However, the rest were evenly split between looking solely at picturebooks (43%) or at the interactions that children have with books (43%). This first group, sources that mostly presented a literature review, seems to be walking the same terrain of most of the classic researchers. The remaining articles then diverge in two directions. The sources that look solely at picturebooks take the theoretical research and begin to apply it to specific sets of picturebooks on subjects or for particular audiences. For example, Reisberg (2008) looked at how paper currency and issues about power work in three picturebooks and Giorgis and Hartman (2000) investigated how 27 picturebooks could be used in middle school curriculum.

Other researchers continue Kiefer’s (1982, 1988) groundbreaking research on picturebooks and children. Kiefer was one of the first researchers on the subject of illustration to use ethnographic methods of investigation where she observed children interacting with picturebooks in classroom settings (Galda & Agee, 1983). However, most of today’s scholars who focus on illustration do not spend enough time in a setting such as a classroom to truly be considered ethnographic research (see Agar, 2006). Although their observations may be more limited than Kiefer’s work, these scholars also recognized the importance of the reader/viewer in the reading experience. Few of these studies on children and books (17%) directly reference reader response theories but all seem rooted in the premise that “[readers] actively make the meaning they find in literature” (Tyson, 2006, p. 170).

Although no sources could be considered quasi-experimental, some sources were rigorous in their application of empirical research methods (26%). Most pieces of research (61%) observe either books or
children interacting with books in non-rigorous ways. This suggests that much of the research being done would not be considered scientific because it would not meet standards of validity used in other qualitative research (c.f., Lather, 1986). It is also possible that there are natural difficulties inherent in research into ideas of meaning.

**The balance between the book and the reader/viewer in recent research.** In comparison to the classic sources which focus on the books themselves with the exception of Kiefer (1995), some of the more recent sources balance between the child reader/viewer and the books. The majority still primarily address the books (52%) with just a few approaching the picturebooks from the child’s perspective (17%) and 30% neither leaning toward one or the other. There does not seem to be a definite shift from one to the other however different from the classic these newer sources may be.

One source that did not come up in my search that I partially expected was Sipe (2007). Sipe’s book was about how picturebooks are understood but coming from the perspective of how children respond to these picturebooks. Although their responses are evidence of their meaning making, the focus on response seemed to replace inquiry into how illustrations are involved in creating meaning. Consequently the amount of research from a reader/viewer perspective may be underrepresented.

**Other trends in recent research.** This set of articles also demonstrated several other trends in research into how pictures in picturebooks create meaning. The biggest tendency was to move the focus from theoretical writing to classroom applications. 14 sources (61%) suggested or examined recommended classroom activities in using illustrations in picturebooks. Correspondingly, 13 sources (57%) addressed the importance of attention to the pictures in picturebooks in terms of teaching visual literacy. On the other hand, only a couple (17%) included a grammar of design elements.

These articles were also useful in identifying a few niche areas that recent research was interested in. The five articles on cultural representation (22%) took different approaches to the subject of illustrations creating meaning. All of these advocated for care in how cultures are represented since children are influenced by the images they are presented with. Only two sources (9%) looked at the social construction of meaning from pictures, suggesting that this is an area where research could be expanded.
The background of the scholars themselves has also changed since the classics. Scholars from English are no longer represented at all whereas academicians from education comprise the bulk of the writers (57%). Classroom teachers have also been contributing to scholarship more recently, especially in terms of practice-oriented articles on how to use picturebooks in various school settings.

**How pictures work in recent research.** The question of how pictures work in recent research returns to the idea that pictures “work” by creating meaning and communicating. Despite focusing on different types of information that are communicated through pictures, this group of research suggests more meaning can be gleaned from pictures through knowledge of ways in which they usually work. In some cases this is done through a grammar such as those used in the classic pieces and in others through activities that aim to highlight deeper meanings present in illustrations. This is especially evident in the emphasis on visual literacy as well as the presentation of benefits of using illustrations in picturebooks for instructional purposes.

**Conclusions on research into how pictures work.** Theorizing the meaning-making of pictures, or how pictures in picturebooks work, has come a long way from experimental studies of the ideal types of pictures. The focus has shifted from the form of the pictures to the interpretation of these pictures by readers. Whereas the form has a static meaning dependent upon the intentions of the illustrator, a focus on interpretation allows for readers to make their own meanings through their interactions with the text.

Unfortunately, in focusing on this idea of interpretation, the area of study has become less systematic, first diverging into personally constructed grammars and then, more recently, into mostly practical applications of teaching visual literacy using picturebooks. These practice-oriented articles are generally motivated through observation of student interactions with pictures but focus on what to do in the future rather than how to explain how the students are constructing meaning from the pictures. On the other hand, scholarship that does not involve actual children seems too far removed from practice to be of use in the day-to-day world.

Further research into how picturebooks work seems called for, although not of the type that repeats what has already been done (see Goldsmith, 1984; Nodelman, 2003). Instead, the field could benefit from some of the rigor of Kiefer’s (1982) ethnographic research in determining how readers/viewers and
picturebooks work together. Quasi-experimental research could also focus on the relationships between people and illustrations in picturebooks. Recalling the mistakes of the research Goldsmith reviews—focusing on the pictures without the context of the book—perhaps the question is no longer “How do pictures or picturebooks work?” but “How do picturebooks and children work together to interpret pictures?”

**Children’s Drawings of Houses**

This study shows how children react to visual media by incorporating it into their cultural identity and expressing it through drawing. However, these drawings are limited by the ability of each child, creating an obstacle to expression of a possibly different mental image that must be taken into account. Indeed, children’s changing verbal descriptions of their work suggest divergence between the envisioned and completed drawing (Coates & Coates, 2006, p. 222).

The pattern of an “iconic house” can be seen in studies of children’s drawings such as Anning and Ring (2004) and Coates and Coates (2006). Kellogg (1969) was the first to notice that buildings are among the most common themes found in drawings by children three to five years old. Coates and Coates found that children’s pictures of houses were “stylized, but instantly recognizable” (p. 235). Kellogg asserted that these buildings were not drawn through real life observations, but as a combination of diagrams that has found approval from adults (p. 123). Wilson and Wilson (1982) suggested that children’s drawings follow several principles as they represent visual ideas: simplicity, perpendicularity, territorial-imperative, fill-the-format, multiple-application, draw-everything, and plasticity.

The depiction of the house in children’s drawings is not a realistic interpretation of a visual object, but is instead an idea of “the enclosing, containing properties of the house as an entire volume” (Matthews, 1999, p. 78). Consequently, the depiction of a house as a square with a gabled roof may not be an actual illustration of the mental image the child has.

**Drawing as convention.** Learning that images represent objects may be one of the first steps in visual literacy, but the ability to interpret pictures for meaning is one that grows throughout life. Callaghan (2008) qualified: “Even though pictorial symbols share perceptual features with their referents, their function as symbols is not evident to infants and young children” (p. 29). This suggests that children may
be able to “use” symbols before understanding how they work and thus need instruction in order to fully comprehend them.

One area in which symbols and conventions of image-making are directly taught is through teaching children to draw. Marjorie Wilson and Brent Wilson (1982) insisted, “children draw in order to symbolically explore their worlds” (p. 19). At first they make scribbles and then simple shapes. When adults ask children, “what is it?” they are suggesting that the marks are capable of having meaning. Danesi (1995) commented:

Although children, with parental prompting, may learn to label circles as “suns” or “faces,” they do not set out to draw anything in the environment, but instead seem spontaneously to produce forms that become refined through practice into precise, repeatable shapes. The act of making shapes is pleasurable in itself and appears to be intrinsically satisfying; usually identification is provided, if at all, only after the child finishes drawing. (pp. 58-59)

Children eventually come to realize “that drawn shapes can not only ‘stand for’ or represent ‘things’ but can also present ideas” (Wilson & Wilson, 1982, p. 51). As this meaning is newly assigned, it often becomes changeable. Coates and Coates (2006) observed children talking as they work: “The same children, describing their completed work, may offer a very different version to the one overheard” (p. 223).

Once drawings, like pictures, have been established to have meaning via the objects they indicate, children pick up conventions for depicting objects. Milbrath and Trautner (2008) wrote: “It would be naïve to assume that children’s drawings are a direct reflection of how they understand reality or of their mental depictions of reality” (p. 4). Instead they depict their knowledge of things in their drawing. As a representation, they often “[copy] drawing schemata from other pictures.” Consequently, techniques like drawing the sun as a circle with lines coming off it, a convention rather than realistic representation, are frequently used. As conventions like this only need to communicate within a general culture, these techniques can be culturally specific although some appear to rise above cultural divisions.

Some scholars refer to Cizek’s work in the early 1900s as “discovering child art” (Wilson & Wilson, 1982, p. 39). Cizek discovered that children all over the world would draw a “tadpole person”- a circle with two appendages. This has led some to conclude “that all children possess a universal language of symbols” (p. 40). Wilson and Wilson suggested that, although this effect may be universal, adults should
still encourage more mature ways of depicting. They compared this to helping children learn to speak, a process of enculturation, in a specific language.

Thus a child’s means of expression is limited in some ways but is increased in others. Although “it is very unusual for children to draw directly from observable objects on their spontaneous drawing” (Matthews, 1999, p. 3), Smith-Shank commented that young children excel at observational drawing because they have not been taught the shortcuts of drawing conventions yet (personal communication, January 25, 2012).

Adults also take shortcuts to assist with making meaning from images. Coles, Sigman, and Chessel (1977) found that when adults read picturebooks that their eyes followed a systematic, organized path across the page. This suggests that adults have learned to look quickly for meaning, scanning the page and focusing on criterial aspects that they have learned are important. Children who have not learned to do this yet are less systematic and spend more time in particular spots. Kiefer (1995) suggested that they pick up more of the details in exchange for a more involved process (p. 8). In the end there seems to be both advantages and disadvantages to learning to simplify the production and reading of images through the use of conventions.

**Opportunities for Extending this Scholarship**

The studies discussed above leave several opportunities for exploration that this research has made use of. In particular how the illustrator functions as an active creator of meaning stands out. Additionally, the cultural setting around illustrators impacts the ideology within the images they create. Lastly, connections between illustration and children’s drawing are recommended.

Few of these scholarly perspectives have addressed the illustrator’s process of creating pictures in detail. Of the meaning that is received by the viewer, how much of it was intended by the illustrator or “misread” by the viewer? As an individual person, the illustrator is a complex blend of conscious intention and subconscious ideas. A Freudian perspective would have taken the position that “human beings are motivated, even driven, by desires, fears, needs, and conflicts of which they are unaware” (Tyson, 2006, p. 12). Hence it is likely that an illustrator would include ideas in their work that they are not conscious of.
There is then the question of how much meaning is consciously produced compared to that which unconsciously produced.

Kress and van Leeuwen (2006) noted that the illustrator, or sign-maker, as they call it, is also affected by “the cultural, social and psychological history of the sign-maker, and focused by the specific context in which the sign is made” (p. 7) Thus social influence over the production of the pictures affects the meaning produced. Factors like the variable social values of media or types of illustrations that sell better were not directly addressed by any of the scholars explored here but will nonetheless influence the choices an illustrator makes. How does the social context surrounding picturebooks affect the ways meaning is conveyed and how much influence does this social context have?

Regarding the personal choices and intentions of the illustrator, Kress and van Leeuwen (2006) remarked:

The interest of sign-makers, at the moment of making the sign, leads them to choose an aspect or a bundle of aspects of the object to be represented as being criterial, at that moment, for representing what they want to represent, and then choose the most plausible, most apt for its representation. (p. 13)

From this, it sounds like the illustrator or sign-maker’s decision of criterial aspects has a large impact on the meaning that is created in their sign. However, little research seems to have been done into criterial aspects even though “it is never the ‘whole object’ but only its criterial aspects which are represented” (p. 7). This suggests that criterial aspects may then be what produces a large portion of meaning in illustration. Embodied within these criterial aspects are cultural ideas of the object it is representing. Nodelman (2010) observed: “Any picture of a tree, no matter how representative of all trees it is meant to be, can depict nothing more than one particular tree- never just the idea of ‘tree,’ always one specific example to represent that idea” (p. 14). How an illustrator chooses to represent an object then is a particular choice that makes meaning, not only within the local context of the picturebook, but within larger social contexts as part of a “language” for representing. Hence this appears to be a rich area for inquiry into specific objects and their representation through criterial aspects. This could also explore cultural perceptions of these objects when the ideas of multiple illustrations and illustrators are considered together.
Several researchers have acknowledged the potential for picturebooks to convey ideology (e.g. Coats, 2001; Kress & van Leeuwen, 2006, p. 14; Nikolajeva, 2010, p. 38; Nodelman & Reimer, 2003, pp. 275–276), but few considered whether the pictures or the text convey more or different types of ideology or have more effect on the reader. Nikolajeva and Scott (2001) suggested that picturebooks are generally symmetrical in their portrayal of gender stereotypes, either interrogating them equally or confirming them equally. They wrote that they found few books “where words and pictures tell different stories from the gender point of view: for instance, the verbal story being ‘feminist’ and the pictures more conservative in the gender construction, or the other way around” (p. 108). This seems unlikely, as many picturebooks are written and illustrated by separate authors and illustrators who may not share the same ideas about gender. Even books written and illustrated by the same person should be suspect, as each media has different conventions for conveying meaning and thus cannot necessarily indicate the same thing. On the other hand, Smith-D’Arezzo and Musgrove (2011) analyzed picturebooks for stereotypes of African Americans and found positive and negative ideology conveyed in pictures and text in various combinations. Given recent concerns with ideology (e.g. Stephens & McCallum, 2010), this seems like a potent area for research.

Kiefer (1995) notes that illustrators such as Maurice Sendak, Tommie dePaola, Eroll Le Cain, Nancy Burkhert, and Peter O. Zelinsky have relied on techniques such as referencing artists and even specific works from the classical art cannon. In comparison, picturebooks that display less realistic styles of illustration seem to incorporate some of the conventions that children are taught as they learn to draw. Illustrator Mo Willems (“An Interview with Mo Willems,” 2006) said that he deliberately uses a child-friendly drawing style so that his readers/viewers are able to redraw the character. Thus investigation into the links between children’s drawing conventions and illustration appears to have potential for future research.

Although they still center on the idea of how pictures contribute meaning in picturebooks, many of these subjects for possible inquiry approach meaning from a postmodern vantage. They recognize multiple meanings and multiple ways of making meaning, acknowledge differences in meaning production that are culturally constructed, and question the meaning and ideology present in the visual aspects of picturebooks.
All of these areas are paths through which to expand research into how pictures work in an increasingly visual age.

**Conclusion**

Although existing research has approached the subject from several different directions, no one has combined these areas of interest in the same way before. The perspectives of material culture and semiotics have been used in studies of the picturebooks, but applying these theories to a visual motif beyond characters is a new area of investigation. The comparison of the images found in picturebooks with children’s drawings of the same motif produces new ideas of how visual images enculturate. Additionally, looking at how children are visually presented with and imagine architecture presents a new avenue of exploration into the idea of “house.”
Chapter 3: Research Methodology

The purpose of this study was to investigate the cultural symbol of the house as portrayed in children’s picturebooks in order to further research about how picturebook illustration works, as well as question the symbol of the house and its relation to American culture. To address these subjects, data has been collected in a multistrand research design from two mixed-method investigations. The first investigation was a random sampling of picturebooks. This investigation was designed to answer research question one—“What are the prevalent patterns of house depiction in children’s picturebook illustration and what do these patterns indicate about how picturebooks construct the idea of ‘house?’” The second investigation was the collection of a small sample of children’s drawings of houses. This sample provided a point of comparison for the picturebook illustrations in order to address the second and third research questions—“How do the prevalent patterns of house depiction visible in children’s drawings of houses correlate with depictions of houses in picturebooks?” and “In what ways do illustrators and children depart from prevalent patterns of house depiction?.” Both of these data sets—the picturebooks and the drawings—were analyzed using Krippendorff’s content analysis (2013) adapted for visual texts. Whereas the methodology of collecting data pursues different techniques for the two different investigations, the analysis is intended to bring the two together. It is hoped that this methodology has suggested an integrated picture of the patterns of houses found in children’s picturebooks, the implications of these patterns, and how children understand and respond to these depictions.

This chapter presents the research design and methodology used in this study. It will first describe the rationale for a mixed methods approach that combines elements of both qualitative and quantitative research. Then it is divided into two sections, each focusing on one of the investigations. For each investigation, the design, context, and sample will be detailed. The data analysis procedures and measures
of legitimation are described together since the techniques are the same, even if not the categories and coding.

**Rationale for a Mixed Methods Approach**

Johnson and Onwuegbuzie (2004) advocated for mixed methods research saying that “taking a non-purist or compatibilist or mixed position allows researchers to mix and match design components that offer the best chance of answering their specific research questions” (p.15). Their position was that mixed method research is ideal for a research world that is “interdisciplinary, complex, and dynamic” (p. 15). With this study’s roots in architecture, literature, education, and art, mixed methods seemed to be an ideal approach. Like Johnson and Onwuegbuzie suggest, rather than choosing a research method first and then fitting the questions to match, I started at with the questions that would guide my research. Question 1 called for a more quantitative approach with a large random sample that could produce descriptive statistics, suggest significance, and generalize about a larger population. On the other hand, qualitative research design seemed more appropriate for a smaller sample of drawings studied in depth for Questions 2 and 3, which focus on how they work rather than to what extent.

However, despite the two different types of data collection, both data sets—the sample of picturebooks and the set of drawings—needed to be able to be compared to address Questions 2 and 3. This required using data analysis procedures as similar as possible for both sets. For maximum exploration of the data, the use of both a priori categories from the quantitative research paradigm and inductively produced posteriori were desired. Fortunately, advocates for mixed method research not only support mixed analysis methods but have suggested that conversion (i.e. “transforming the qualitative data to a numerical form” and “converting quantitative data into data that can be analyzed qualitatively”) is a strength because of the opportunities for re-analysis and inferences drawn from both analyses (Onwuegbuzie & Johnson, 2006, p. 53).

This research approach best meets the definition of “concurrent mixed method design”:

A multistrand design in which both QUAL and QUAN data are collected and analyzed to answer a single type of research question (either QUAL or QUAN). The final inferences are based on both data analysis results. The two types of data are collected independently at the same time or with a time lag. (Tashakkori & Teddlie, 2003, pp. 704–705)
The quantitative data was the set of picturebooks and the qualitative data the set of drawings that were collected independently. These were both used to answer the more qualitative Question 2 and Question 3 using combined data analysis methods. With Question 1 focusing only on one data set using mixed analysis methods, the actual general design is of course more complex; Johnson and Onwuegbuzie (2004) recommended that “researchers should mindfully create designs that effectively answer their research questions” in contrast to being limited to a “menu of designs from which to select” (p. 20).

**Investigation 1: Depictions of Houses in a Random Sample of Picturebooks**

The first investigation of this study approaches the subject of the symbol of the house in works for and by children from a quantitative perspective. Question 1 sought to identify what patterns of house depiction are common via a coding mechanism, then express how prevalent these patterns are. This question lent itself toward a descriptive study, not only as a “what” question but also in its aim to “provide a ‘picture’ of a phenomena as it naturally occurs” (Bickman & Rog, 1998, p. 15). In order to describe a body of books large enough to touch the lives of many American children, a substantial random sample was appropriate. A quantitative statistic here even seemed possible through conversion of qualitative characteristics of houses into quantitative data. Then a more qualitative discussion would focus on the ramifications of these patterns in the construction of the idea of “house” that children would be exposed to in picturebooks.

**The research site.** The sample for the first investigation came from the collection of picturebooks on the shelf at the Hilliard Branch of the Columbus Metropolitan Library System. This was a large-sized suburban branch serving a predominantly middle-class community with a moderate immigrant population. The library’s children’s area was typically busy with children and their parents. Although storytimes and other library programs were well attended, most of the use of the section seemed to focus on the computers and play area. I have observed adults reading to children in the play area but it appeared that most families check out books and take them home for reading. Hilliard was actually one of the few branches in the system whose circulation statistics have increased over the last year, mostly due to picturebook circulation (V. Gooding, personal communication, February 5, 2014).
The books available for checkout at the Hilliard Branch were not particular to the branch but were shared among 21 locations across the city of Columbus through what is called “floating collections.” If a book was returned at a particular branch, it was kept on the shelf there regardless of where it was checked out until someone checks it out or requests it at another branch.

**The selection of books.** According to a circulation report (Columbus Metropolitan Library, 2012), the Hilliard Library owned 18,542 picturebooks on October 31, 2012. 8,835 of these books were listed as available. This number and the population used for this investigation included counting books, alphabet books, Braille books, bilingual books, shapes, and colors but not easy readers, board books, foreign language picturebooks, traditional literature shelved under the 398 Dewey Decimal call number, or other nonfiction.

Although only 47.65% of their picturebook collection was available in October 2012, they purchase more copies of the most popular books and fewer copies of less popular titles so that the books on the shelf are not limited to unpopular books. The library’s practice is to keep the collection up-to-date with new, high quality books but still circulating older books that have not lost interest. Periodically library staff “weed” the collection by removing books that are in poor condition and/or that have poor circulation statistics, only reordering those that check out frequently. Not only the particular titles but the amount of books available varies from hour to hour, day to day, and season to season as books are checked out, checked in and shelved, read in the library, weeded, and purchased. Although this population does not represent the full range of books currently or at one time available on the market, it does represent the titles with which a patron would be presented with when they visit the library.

To select which books to search for depictions of the iconic house without bias, I used a series of numbers from 1 to 107 that were randomly generated. Starting at the first book of the first shelf, I counted unique titles of books until reaching the listed number. I then pulled the picturebook that I stopped on, placed a cardboard marker in the spot in case I lost count, and proceeded to count the next decreed number. This produced an initial sample of 102 picturebooks, 47 of which included depictions of houses. With 5,481 titles counted, this produced a confidence interval of 10 at 95% accuracy. However, in order to get closer to a more desirable confidence interval of 5 or less, I needed a larger sample size. In order to
increase the size of the sample, I did a second pass of the entire collection using random numbers from 1 to 80. This produced a collection of 105 additional books, 63 of which included houses to bring the total sample size to 207 and the number of books with houses to 110.

Once books were selected as part of the data set, they were scanned into a Goodreads.com account created specifically for this purpose using an iPad. All books in the initial sample were taken home for analysis. In order to expedite and focus efforts on the data analysis of the second sample, books without any depictions of houses were returned to the shelf before moving to the next book. By exporting the list of books from Goodreads.com, a Microsoft Excel spreadsheet including title, author, illustrator, ISBN, Goodreads.com’s average user rating, publisher, binding, number of pages, year published, and original publication year was produced. Additional categories were then added using the data analysis procedures described below. The selection number that corresponded with each random number was also recorded. All pages and double page spreads featuring a house in the illustration were scanned on an 11”x17” flatbed scanner for future reference, allowing recoding or the addition of further categories of analysis at a later date if necessary.

**Investigation 2: Depictions of Houses in Children’s Drawings**

This investigation was developed to examine if children have been enculturated by the pattern of the iconic house and to what extent, as evidenced in their drawings. Although the actual mental images referenced when a child hears the word “house” are intangible, these drawings can be seen as artifacts reflecting their thoughts. This data set was then used to compare to the illustrations of houses in the sample of picturebooks collected in Investigation 1.

In order to assess the ability of children to depart from the iconic house pattern, a quasi-experimental design was selected. First each child was asked to “draw a house” to see if their first image reflects the iconic house pattern. When they appeared done with that drawing, the child was also asked to “design a house” and urged to be as creative as possible (see Appendix D for the complete research protocol). The assumption behind this procedure was that the second picture would be more innovative than the first, testing the extent of their ability to innovate. Without randomization, a control group, and consequently a larger sample, this investigation could not truly be considered an experiment.
Instead, a quasi-experimental design similar to time series studies with measurements at two different occasions (Fife-Schaw, 2012, p. 83)—one for the drawing and one for the design—was employed. However, causality between the pre-test and post-test drawings can still be established (Shadish, Cook, & Campbell, 2001).

In comparisons of the children’s pictures with the illustrations from the picturebook sample, causality in differences and similarities cannot be established. Instead, the focus was on correlation: Pressley (2004) observed that “correlational studies are absolutely essential in the development of causal hypotheses” (p. 290).

A convenience sample was chosen for this investigation. Robinson (2014) defined this as “locating any convenient cases who meet the required criteria and then selecting those who respond on a first-come-first-served basis until the sample size quotient is full” (p. 32). This sampling technique is not optimal for generalizing to a large population but seemed appropriate for this smaller qualitative study. Consequently, Robinson recommended defining the population that such a sample is meant to represent narrowly so that they are closely linked. On the other hand, this sampling method enjoys the advantage of participants who want to participate in the investigation rather than those who must be pressed into it for the purposes of a random sample. Koerber and McMichael (2008) noted that the “close relationship between researcher and research site that makes a sample convenient often grants the researcher a level of access to and familiarity with the sample that guarantees a richness of data” that would not otherwise be possible (p. 463).

The sample then became self-selecting children ages 4-8 who were visiting the Center of Science and Industry (COSI), a prominent science center in Columbus, OH, accompanied by a guardian. The children were asked to do the two drawings of houses. They were provided with crayons in a wide variety of colors to use on 8.5” x 11” paper printed with instructions in the corner. Most children were asked about their drawings in an informal interview (see Appendix D). If the child wished to keep a drawing, a digital photograph of each sheet was taken and the child kept their original work. Each child was asked their age; apparent gender and race were recorded as personally observed. The drawings, the researcher’s personal
observations from the activity including the participant’s age, and notes from the informal interviews were linked by a number to preserve anonymity (see Appendix D for complete research protocol).

Later, a Microsoft Excel spreadsheet was created to pull together the information collected for this investigation. This spreadsheet included the anonymous participant number, observed gender, stated age, observed race, participants from the same group, other participants who were drawing at the same time, date, number of houses created for Step 1 (“draw a house”), and number of houses created for Step 2 (“design a house”). Then identical categories for data analysis were added for each step and completed according to the data analysis procedures below.

**The research site.** COSI is an award winning 320,000 square foot science center that caters particularly to children (COSI, 2012). With COSI’s emphasis on partnerships and presenting science of multiple types, Ohio State University (OSU) Extension maintains a research office on site which facilitated this research. The data collection took place at a table in COSI’s atrium just inside the main entrance. Since it was summertime, children of all ages were present on the weekdays that data were collected.

**Participants.** This sample was designed to target children of the ages that would typically be exposed to picturebooks but are also likely capable of producing a recognizable drawing. Younger children may not have yet developed appropriate fine motor skills or attention span for this activity and older subjects will have less direct influence from picturebooks. As both artistic ability and the technical skills required for drawing vary by age and individually, the drawings produced for this sample may not accurately reflect the creator’s intent. In comparison, picturebook illustrators have more than ten minutes or so in which to complete their works. They also have been endorsed by the art directors who have selected them for book projects and the publishers who invest in producing their work. thus illustrators may have been able to more accurately depict their mental images.

The research site presented some limitations in who would be likely to be present and participate in the activity. COSI adult visitors generally reported having a moderate to high income (67% earning more than $50,000 and 29% more than $100,000), being well educated with at least a bachelors degree (57%), and identifying as white (86%) (COSI, n.d.). In comparison, 53% of the general United State population had a moderate to high income, 29% was similarly educated, and 72 % identified as white (United States
Census Bureau, 2013a). Daycare and school groups—which might have included more diverse children—had to be excluded due to consent issues. Additionally, this activity appealed to family groups where participants were likely to be related to each other and thus of similar background.

**Data analysis procedures.**

As a mixed methods study, data analysis for this dissertation included both quantitative and qualitative aspects. Johnson and Onwuegbuzie (2004) applauded the potential for a “cyclical, recursive, and interactional process” within mixed method research (p. 21). The combination of analysis perspectives used in this study employs such an approach, allowing qualitative analysis to suggest further ideas to investigate both through more quantitative categories of analysis and through themes observed.

In both the quantitative and qualitative components, the data analysis technique used was based on content analysis (Krippendorff, 2013). Content analysis provides a systematic way of “coding and categorizing textual material” which can be used to describe phenomena (p. 31). Krippendorff also questioned the divide between quantitative and qualitative content analysis, writing that “all reading of texts is qualitative, even when certain characteristics of a text are later converted into numbers” (p. 22). Thus content analysis is suitable for both qualitative and quantitative research.

Krippendorff (2013) described content analysis as “a method for inquiring into social reality, which consists of inferring features of a nonmanifest context from features of a manifest text” (Merten, 1991, p. 15 as cited in Krippendorff, 2013, p. 31, translation by Krippendorff). In the case of this study, the area of interest is the American envisionment of “houseness” as manifest in the depictions of houses for and by children. This can then be extended to hypothesize about how images work to convey cultural ideas. The content analysis technique was adapted for the study in order to analyze visual images by expanding the definition of text to include illustrations and drawings. Krippendorff commented that other meaningful matter that functions similar to texts would include the visual, provided the media could “speak to someone about phenomena outside of what can be sensed and observed” (p. 25). The years of research into how pictures work examined in Chapter 2 attest that picturebooks “speak” about ideas beyond the surface of each image.
In the case of this study, a mixed methods pilot study was used to create a priori categories of analysis. The pilot study employed a quantitative technique but subjected it to a more qualitative interpretation during the discussion of findings that has been incorporated into Chapter 5. Additionally, memo writing via the use of grounded theory (Charmaz, 2001) allowed for the evolution of new categories and development of the eventual findings during the analysis. This section will first address the development of the a priori data analysis instrument through the pilot study and then proceed with describing the data analysis cultivated through grounded theory.

**A pilot study.** A pilot study in spring 2009 examined a purposeful sample of 42 picturebooks depicting houses for nine characteristics of the suspected iconic house pattern. These books were generally chosen because either they had house in the title or Columbus Metropolitan Library had cataloged them under the subject heading of “houses” in the now-retired Picturebook Subject Index. The primary elevation of the house—that which featured the entry door—was principally what was depicted in the books. The characteristics evaluated included stories tall, units wide, roof shape, roof slope, footprint, symmetry, and realism (see Appendix A for categories stemming from the pilot study). Aside from realism, these categories were developed from the discussions on form and structure in *A Field Guide to American Houses* (McAlester & McAlester, 1984). Upon identification of an alternate house type—the haunted house—the category “house style” was added and four more characteristics were included for books that featured this type: repair, leaning, number of towers, and cresting (ornamentation at the ridge line typically looking like a short wrought iron fence). The “plot type” category was added to see if there was a correlation between the type of story and the type of house presented but the variety of qualitative data collected was difficult to convert into quantitative categories. The house evaluated from each book was also described with a list of attributes including information about porches and chimneys such as “2.5 story, 3 units, front gable with flat roofed porch, central chimney on back side, front is symmetrical but sides are balanced” for *The Great Blue House* (Banks, 2005).

This study suggested that the iconic house—a square or rectangular building with a gabled roof and a balanced or symmetrical arrangement of a door and one or more windows—comprised about 70% of houses found in picturebooks. 81% of the houses studied had square or rectangular footprints, 71% had
gabled roofs, and 62% were either balanced or symmetrical—meaning that the two sides have equal “weight,” often substituting a door for a window.

An alternate pattern found was the haunted house which comprised 17% of the sample. The haunted house pattern was typified by larger houses that were often in poor repair (71% of the 7 haunted houses), more detailed, darkly colored, and frequently leaned or bulged (71%). These attributes seemed to convey a sense of otherness, instability, and possibly even menace. Towers (71%) and roof cresting (57%) were also typical features. The characteristics of the haunted house pattern were accompanied by a particular style of architecture (71%)—the Second Empire style from the Victorian era. This style is ornate, confined to limited geographic areas, and for the upper classes rather than the common household. It employs a relatively uncommon roof style - the mansard roof with a very steep slope. It is also typified by cornices, symmetry, dormers, towers, roof cresting, and bracketed windows.

The a priori data analysis instrument. This pilot study was used to develop an a priori analysis instrument with categories and possible responses for each category determined before the data was collected (see Appendix A for a complete listing of categories and codes). The difference between the textual description of each house and the categories instantly recommended the addition of categories for number of chimneys, location of chimney(s), the presence and type of front porch, and the number of garages. Several categories including the media of the illustrations and materials and colors of house components like roofs, walls, and trim were originally included as well. These were abandoned after the first sample due to the unlikelihood of producing data that would lead toward important findings pertaining to the research questions.

Development of categories and findings using grounded theory. Observations both during data collection and data analysis suggested the need for further categories of analysis. The methodology of this recursive procedure is based on grounded theory. In grounded theory, data is analyzed for “conceptual categories” that are used to suggest theories of connection (Glesne, 2010, p. 21). As I worked with both data sets, I kept an “analytic file” (p. 190) of bullet-pointed observations that frequently suggested the need for a new category in order to provide support for the observation. These included categories such as the ambiguity of the illustration style (in contrast to the realism of the house depiction), the role the house plays...
in the book, the depiction of the protagonist’s house, mentions of the house in the text, the variety of houses depicted, and presumable wealth of the house inhabitants based on size, repair, and style (see Appendix A for a complete listing of categories and codes). Additionally, notes fields within the spreadsheets provided room for textual observations.

**Statistical analysis of categories.** Although not all categories lent themselves to this type of analysis, statistical inference tests were applied when reasonable using SPSS (IBM Corp., 2011). For the most part, these tests were useful in identifying unsuspected correlations between the different categories. Tests used included chi-square tests, Fisher’s exact test, $t$ tests, and the Pearson product-moment correlation coefficient. In looking at whether categories followed expected proportions, Chi-square goodness-of-fit tests ($\chi^2$) were employed. Chi-square tests of association ($\chi^2$) were used to see if two or more categorical variables were significantly different. When the expected cell counts in two by two contingency tables were too small for chi-square tests, Fisher’s exact test was reported. When there was one numeric category and one nominal category with only two variables, independent $t$ tests were used to compare the means of the two groups to see if they were significantly similar. In the case of two numeric categories, paired samples $t$ tests compared the means to see if they were significantly similar. At times the data for the $t$ tests failed Levene’s Test for Equality of Variances. In these cases, Levene’s Test ($F$) has been reported and the version of the $t$ test which does not assume equal variances reported with adjusted degrees of freedom. The Pearson product-moment correlation coefficient ($r$) was used for bivariate measures of association in comparing two or more numeric categories. Tests have been accepted as significant at the .05 level of significance.

Some concerns with the validity of these inference tests should be noted as well. In the case of contingency tables larger than appropriate for Fisher’s exact test, the chi-square tests were not always valid with the relatively small sample size. Following Cochran (1954), chi-square tests have not been relied upon when expected cell frequencies were less than 1 or more than 20% of the cells have an expected count of less than 5. Additionally, the data for the $t$ tests was not always normal but Lomax (2007) noted that “the independent $t$ test is fairly robust to nonnormality in most situations” (p. 126). Given that the cost of errors in an exploratory study is low (cf. p. 101), this did not appear to be a grave concern. In general, inference
tests have not been reported except when they added to the discussion at hand, typically due to a significant finding or the lack of a significant finding that would have been expected. Although this is not traditional, these inference tests were used to describe the data rather than to test hypotheses. Correspondingly, the discussion of the tests has been purposefully been kept brief and reported in footnotes in order to maintain a more exploratory feel suitable to the predominantly qualitative questions.

**Legitimation**

With a combination of quantitative and qualitative research techniques, choosing a method of establishing the validity (or trustworthiness within the qualitative paradigm (Glesne, 2010, p. 49)), or even a term to discuss the issue of whether these findings can be defended, presented some difficulty. In order to avoid bias toward one approach or the other, the term legitimation, common to mixed research (Onwuegbuzie & Johnson, 2006, p. 48), will be used here. Several particular practices have been included in this study in order to address legitimation that will be specifically addressed here.

**Dependability.** In qualitative research, Lincoln and Guba (1985) recommended that “developing and maintaining an audit trail” helps “[increase] the probability that trustworthiness will result” and “[makes] it possible to assess the degree of trustworthiness after the fact” (p. 287). In this dissertation, I have explicitly described procedures and codes in order to maintain openness that will support dependability. The use of publicly available texts in the first investigation and inclusion of data from the second investigation helps provide an audit trail.

**Triangulation.** From the qualitative research paradigm, Lincoln and Guba (1985) advocated for using appropriate modes of triangulation to “[improve] the probability that that findings and interpretations will be found credible” (p. 305). With the mixed method design of this study, multiple data collection and analysis methodologies help legitimize this study. Additionally, appropriate sample sizes for each investigation have provided multiple sources of data.

**Transferability/external validity.** In addition to attempts to be clear about the extent of transferability of the findings in the description of my research design, the main purpose of this study was not necessarily to generalize to larger populations but to examine the construction of “houseness” in artifacts of American culture. The questions instead are focused on vividly describing “phenomena as they
are situated and embedded in local contexts” and “exploring how and why phenomena occur” (Johnson & Onwuegbuzie, 2004, p. 20) with the support of the more transferable quantitative statistics (see p. 19).

**Rich, thick description.** A technique to increase the dependability and transferability of the findings is to provide “rich, thick description” (Glesne, 2010, p. 49). Description of the context has been provided earlier in this chapter, as well as thick description in other areas of this dissertation.

**Negative case analysis.** With a focus on multiple possible patterns of house depiction and departures from the most prevalent pattern, this study has already focused attention on unconfirming evidence as part of the data analysis (see Lincoln & Guba, 1985, p. 206). Additionally, coding for non-conforming cases helped to identify outliers and additional patterns that did not appear during the first reviews of the data.

**Sample integration and conversion.** Onwuegbuzie and Johnson (2006) recommended several types of legitimation specifically for mixed method research, including sample integration and conversion. They defined sample integration as “the extent to which the relationship between the quantitative and qualitative sampling designs yields quality meta-inferences” (p. 57). “The extent to which the quantitizing or qualitizing yields meta-inferences” is conversion. In the case of this study, both investigations have been closely tied together by the data analysis such that they are easily comparable in order to support the findings.

**Weakness minimization.** Onwuegbuzie and Johnson (2006) also advocated for maximizing “the extent to which the weakness from one approach is compensated by the strengths from the other approach” (p. 57). This study used the qualitative aspects to explore and suggest theories but allowing the quantitative aspects to provide support for these theories (see Johnson & Onwuegbuzie, 2004, pp. 19–20).

**Instrumental decay.** Although generally pertinent to the quantitative research paradigm, instrumental decay or drift in the assessment process is a concern in all qualitative research as well (Lincoln & Guba, 1985, p. 292). Consequently, all data has been coded multiple times in a recursive process in order to ensure consistency.

**Reflexivity/bias.** I have attempted to maintain a reasonable level of objectivity in this work. However, as a post-positivist researcher, I also have had to acknowledge my own subjectivity as a factor
within this study (see Glesne, 2010, pp. 150–159). Although my coding may reflect my personal biases, since all of the coding has been done by one person, it should maintain consistency within itself. Krippendorff (2013) suggested that “the systematic reading of a body of texts narrows the range of possible inferences “ (p. 30) so that the systematic nature of the inquiry will help compensate for subjectivity. In order to address this, I have also critically discussed the potential impacts of my positioning on the findings in Chapter 5.
Chapter 4: Findings of the Study

In pursuit of understanding how images such as illustrations in picturebooks work, few have attempted to look at particular visual motifs as cultural products. This study aimed at examining depictions of the house in picturebooks to explore both how images reflect and influence the culture that creates and consumes them. This particular depiction is especially rich in unacknowledged ideology that has yet to be examined from the perspective of children and their visual images.

To address this problem, this study undertook two investigations with a mixed method research design. The first investigation examined depictions of houses in a substantial random sample of picturebooks. The second investigation collected a small sample of children’s drawings of houses. This facilitated the comparison of the images in the first investigation with the drawings.

This chapter reports the results of the investigations and the findings in terms of the research questions. It begins with a brief summary of the two investigations that provided the data for this study. Then the findings of question one are presented, drawing from investigation one. This chapter proceeds separately through research questions two and three, combining data from analyzing both investigations.

Summary of Investigations

This study aimed to investigate the cultural symbol of the house as portrayed in children’s picturebooks. In order to do so, two investigations addressing depictions of the house were undertaken. The first focused on depictions of houses in children’s picturebook illustration and the second on how these depictions were reflected in children’s drawings.

Investigation one: Depictions of houses in picturebooks. The first investigation was a random sample of children’s picturebooks collected from a public library. When the first sampling only produced 102 titles, a second sampling was taken to increase the sample size.


**Descriptive characteristics of the books.** In order to better understand the results of this investigation, some background into the characteristics of the sample establishes the context. The initial sample collected 102 picturebooks, 48 of which included depictions of houses. The second sample produced a collection of 105 additional books, 62 of which included houses, to bring the total sample size to 207 and the number of books with houses to 110 (see References for a complete listing). Although it would have been possible, no title from the first sample was repeated within the second sample. The total sample should be able to predict trends within the 5,481 population from which they were selected with a confidence interval of 7 at 95% accuracy. Items of particular interest included the type of books, the publication history of the books, and the quality of the titles.

The books were cataloged as fiction—“literature in the form of prose…that describes imaginary events and people” ("Fiction," 2014)—by the library system. However, some could be considered informational rather than prosaic narratives. These books presented content on subjects like shapes, colors, types of transportation, Plymouth Colony, what hands can do, holiday traditions, and manners. Although it was not within the scope of this study to investigate differences between informational and fictional books, particular subjects seemed more likely to lend themselves toward inclusion of house depictions. For example, a book on squares (Loughrey, 2010) included multiple depictions of houses whereas one on ovals included none. Over 85 publishers, 200 authors, and 195 illustrators were represented, presenting a wide variety of subjects, styles, and artistic media. 15 of the books were paperback but the rest were hardcover, school, or library binding since the library needs the books to be durable for numerous circulations.

The original publication years ranged from 1938 to 2013. The mean year was 2004, the median 2008, and the mode 2011. Because the books were collected over the course of 15 months, not all 2012 and 2013 books would have been published when they were collected. Consequently, 2011 was the last year when all books published that year would have been available, as well as the most common year. Eighteen titles were reprints of titles more than three years old.

Goodreads ratings are crowd sourced from readers who have indicated how well they liked the book using a 5 star scale. Whereas different readers have their own idiosyncratic versions of the scale (e.g.
Borage, 2013), 3 stars officially indicates “I liked it” and 4 means “I really liked it” (Goodreads Inc, 2014). In general, the understanding seemed to be that the ratings relate to the reviewer’s personal experience of the book rather than more objective considerations of quality (see Rice, 2011). The average rating of the books from Goodreads.com was 3.7 stars,\(^2\) ranging from 2.0 to 4.9. Ratings in the upper 3 range, like those of this sample, would imply that the books are generally considered to be very good, although the rating scale is skewed toward the positive. The year of publication correlated with the rating such that older books were more likely to have higher ratings.\(^3\) Thus the sample was heavily weighted toward recent titles that included a greater concentration of mediocre books but that distinguished older books were still available. The wide range of ratings suggested that the sample also contains a variety of quality.

The quality of the available literature was additionally seen in the presence of notable illustrators. The sample included works by renowned illustrators as well as a one the first Caldecott honor titles, *Wee Gillis* (Leaf, 1938/2006) and a more recent Caldecott Honor book, *Uncle Jed’s Barbershop* (Mitchell, 1993). Other books featured illustrators who had won Caldecott Medals or Honor Awards for titles outside the sample: David Shannon, Melissa Sweet, James Ransome, Robert Lawson, Roger Duvoisin, Floyd Cooper, Uri Shulevitz, Rachel Isadora, Jon Muth, Jerry Pinkney, Blair Lent, and Bill Peet. The sample also contained works by notable illustrators Patricia Pollaco, Polly Dunbar, and Elisha Cooper. Although not as distinguished, Marc Brown, Dav Pilkey, Margaret and H.A. Rey, and the Berenstains have become famous for the wide appeal of their more humorous styles.

From the descriptive characteristics of the sample, including their year of publication and measures of their quality, this sample appears to be a well-rounded representation of the variety of picturebooks to which children might commonly be exposed. The 110 books that included depictions of houses did not differ significantly from the entire sample in terms of publication year\(^4\) or quality rating.\(^5\) In the discussion of findings below, references to the picturebook sample focus on the books that included

\(^2\) SD = 0.4
<br>\(^3\) \(r(205) = -.27, p < .001\)
<br>\(^4\) \(t(205) = 0.28, p = .78\)
<br>\(^5\) \(t(203) = 0.04, p = .97\)
house depictions (henceforth referred to as the books or the picturebooks) since the 97 books that did not were not relevant to the discussion.

Selection of exemplar houses. With multiple house depictions in each book, analyzing each depiction would have been a lengthy process without adding a substantial amount of information. Instead, one house was selected from each book to serve as an example of each illustrator’s work in the particular style of that book. This also had the advantage of creating an exclusive category of patterns for easier statistical analysis.

A purposive sample was used to select an exemplar house that would have the most meaning possible. If present, the first selection criterion was a house that belonged to the protagonist. Next, a house that was the destination within the story—often a relative’s house—was used. If neither of those were available, the most prominent, fully-featured house was selected. Lacking that distinction, the first house that was detailed to the furthest extent of those present in the book was used. As they were sometimes depicted multiple times throughout the book, visual information about the exemplar house was often gleaned from several different images.

Many of the books featured a house that could be clearly associated to the protagonist, often as the house where they lived. These houses were often depicted next to the protagonist at the beginning of the book. Generally no text was used to link the protagonist and the building, although nine books explicitly labeled the protagonist’s house at the beginning of the book. For example, *Hello Tilly* (Dunbar, 2008) began, “Tilly and her friends all live together in a little yellow house…”, *Millions of Snow* (Korda, 2010) labeled the house directly after introducing the main characters, “…and here is the house where they live”, and *Yummy Trip!* (DiTerlizzi, 2010) presented the house before moving inside to depict the characters (see Figure 6).
Given that exemplar houses were a subset of the book patterns, it was not surprising that chi-square inference tests supported that the exemplar books were representative of all the depictions of houses. Iconic patterns in books were significantly associated with iconic exemplar houses. Similarly so were simple patterns and neighborhood patterns. Smaller patterns such as the haunted pattern seemed more uncertain, but also proved to be definitively associated.

Investigation two: Depictions of houses in children’s drawings. The second investigation collected children’s drawings of houses. Each child was first asked to “draw a house” and then asked to “design a house” that could be as wild and crazy as they could imagine. While they were doing so, I recorded personal observations including descriptive characteristics of the participants and their actions as they participated.

Descriptive characteristics of the participants. Drawings were collected from 39 children (see Appendix F). 21 (54%) appeared to be female and 18 (46%) appeared to be male. Ages, as established for eligibility to participate, were evenly distributed with 8 (21%) four-year-olds, 9 (23%) five-year-olds, 8

\[ \chi^2(1, N = 110) = 55.73, p < .001 \]
\[ \chi^2(1, N = 110) = 66.14, p < .001 \]
\[ \chi^2(1, N = 110) = 67.99, p < .001 \]
\[ p < .001 \]
(21%) six-year-olds, 7 (18%) seven-year-olds, and 7 (18%) eight-year-olds. Race appeared to be predominantly White with 31 (84%) coded as White, 4 (11%) as African American, 1 (3%) as Asian, and 3 (8%) as indeterminate or mixed race. In comparison, 73% of the United States population is White, 13% black or African American, 5% Asian, and 3% two or more races (United States Census Bureau, 2013g), not significantly different from the observed distribution. Two children were possibly Hispanic, an ethnicity of interest in the United States Census. Although this was not prompted in any way, readily apparent, or seem to have any significant effect on the child’s drawing ability, the mother of Participant 33 offered that her daughter had an autism spectrum disorder.

The participants often came to the science museum in small groups of families or friends of varying ages. Sometimes these groups included children who were not eligible to participate in the study due to their age. These children were offered the opportunity to draw for fun, either houses or something else of their choosing, or they would participate in other activities in the vicinity with one of the parents in the group. Depending on their choice, this either created pressures on participants to finish quickly so their party could move on or provided social circumstances with unanticipated impacts on the data as discussed in Question 3, Finding 3. Interaction between participants who were not relatives or friends was also unexpected and occasionally influential as seen in a scenario described in Question 2, Finding 3.

**Data corpus.** 33 children attempted both drawing activities with 6 participating in only the first activity. It was difficult to say how many finished their drawings; the idea of completing a drawing appeared to be rather arbitrary, with children stopping their drawing when they felt like it. The last stage of the drawing typically coloring everything in so completion may have been tied to completely coloring the page, something that only happened in three drawings.

The process of drawing followed similarities from child to child. First, participants typically drew the general form, or outline of the house. Next, significant features such as doors and windows were added. If the child had time and patience to do so, they would then work on filling in the façade with colors and patterns or detail the scenery around the house. In many cases, parents or other siblings encouraged the

\[ \chi^2(4, N = 39) = 0.36, p = .99 \]
\[ \chi^2(3, N = 39) = 1.40, p = .71 \]
participant to stop after about ten minutes, apparently anxious to move on to other areas of the museum. In data analysis, this did not appear to be an issue since most of the analysis focused on the overall form of the house.

Most children seemed to have enough drawing ability to be comfortable completing the tasks. Younger boys seemed to be more likely to express frustration. Two 5-year-old boys said that they did not know how to draw a house. Participant 10 nonetheless drew a very small object that clearly resembled an iconic house and Participant 15 produced some scribbles that were much more vague but still could be read as an iconic house. Participant 21 (male, age 4), commented that his second attempt as drawing a house was “just scribbles” and Participant 13 (male, age 4) drew a “basketball” instead of designing a house. Tapping both visual signs and social cues through discussion with the children, I only had difficulty recognizing any sense of “houseness” in four of the seventy-two drawings analyzed. This could be solely attributed to inconsistencies in being able to interact with every child, both on my part dealing with multiple children at the same time and on their willingness to talk about their drawings.

Whereas drawing ability by age seemed to vary, more definite differences based on gender were observed. Female participants seemed to use more colors, incorporate more detail, have more interest in drawing, and be confident in their abilities, which generally corresponded with confidence. Gender differences as they relate to ability to innovate are discussed as an opportunity for further research as the scope of this project did not allow for a complete examination. Race did not seem indicative of any immediate differences.

In response to the instruction “Draw a House,” 49 houses were collected and 35 were collected in response to “Design a House.” Although not all children completed both drawings, many drew multiple houses on the same sheet, requested new sheets, or both. In order not to weight the sample toward children who drew multiple houses, which were often iterations of similar forms, only one house per child per instruction was analyzed. The house chosen for analysis was the most complete house that the child drew. In the case that more than one houses seemed equally complete, the first house was used.
Question One: Patterns of House Depiction in Picturebooks

In response to the question, “What are the prevalent patterns of house depiction in children’s picturebook illustration and what do these patterns indicate about how picturebooks construct the idea of ‘house’?” data from investigation one—depictions of houses as seen in a random sample of picturebooks—provided information. First, the observed patterns of house depiction and their prevalence are examined, beginning with the iconic house pattern in Finding 1. Next, Finding 2 examines some of the other basic characteristics of the house depictions. These included differences in house depiction between text and images, location of the depictions, number of depictions, and the variety amongst the depictions. Finding 3 identifies some of the roles that house depictions played within picturebooks that could contribute to how they were depicted. Finally, Finding 4 looks at attributes of house depictions that tie into the American Dream.

Finding one: Patterns of house depiction. In identifying different types of house depiction, several patterns emerged. These patterns focused on form—the roof and body shape in particular—rather than other characteristics such as style or decoration. These characteristics seemed to be the most important since they were what enabled houses to be distinguished when other attributes had been stripped away either as a stylistic choice or to indicate distance.

Each book was coded as one entity for the house depiction category to ensure that patterns found in background houses were represented. Consequently, each book could fit into multiple categories, especially those that presented a wider variety of house depictions. Rarely, a book that depicted one house fit multiple categories. For example, *A Dark, Dark Tale* (Brown, 1981/1992) featured just one house which appeared to follow the haunted house pattern in far away images. In comparison, the close-up image best matched the castle type (see Figure 7). The exemplar houses were also coded for type of depiction to allow for comparative information on the characteristics of each type.
Similar to the pilot study described in Chapter 3, the pattern of the iconic house appeared in most of the 110 picturebooks depicting houses. However, eight other patterns were also identified including tall, simple, square, urban, neighborhood, haunted, castle, and tree.

**Iconic houses.** In this investigation, the pattern of the iconic house emerged similar to the pilot study. The pilot study found the iconic house to be a square or rectangular building with a gabled roof and a balanced or symmetrical arrangement of a door and one or more windows. However, this study was also open to exploring other patterns of house depiction rather than solely understanding the components of the most prevalent patterns. Consequently the definitive features of the iconic house pattern were pared down to a square or squat rectilinear form with a gable-front roof (see examples in Figure 8). Houses with the triangular side of a hipped or a pyramidal roof on the front or emphasized façade were also included, especially because a substantial portion—37—of the books with houses (34%) depicted one or more houses without any use of perspective to indicate depth. This pattern was found in 45 of the 110 books (41%) and was featured in 30 of the exemplar houses (27%).

Figure 7. Two images of the same house in *A Dark, Dark Tale* (Brown, 1981/1992) illustrated how different depictions can differ on which pattern they best fit.
Houses within the iconic pattern typically shared several additional physical attributes. Most of the iconic exemplar houses were smaller in elevation than the other types of depiction. These houses averaged 2.31 square units in comparison to the other patterns, which averaged 3.96 square units with significantly different variances between the two groups.\(^{12}\) Body shapes, when they could be definitely determined, were also a notable attribute. Although not necessarily as precise as desirable with 25% of cells having an expected count less than five, the iconic pattern was associated with particular body shapes.\(^ {13}\) Of the iconic exemplar houses, 13 had a square body shape (46%) and none (0%) had irregular shapes.\(^ {14}\) In comparison, the other exemplar houses only had square body shapes 15% of the time and frequently featured irregular body shapes (24%).\(^ {15}\) Ten (36%) were longer than they were tall but this did not deviate significantly from other houses at 43%. The ornamentation of houses with this pattern was generally very simple, not exceeding what can be seen in *A Garden for Groundhog* (Ballan, 1985/2004, see the second image from left in Figure 8 on page 70).

**Other categories.** The depictions that could not be described as iconic fell into eight other categories as I refined the codes throughout data analysis. These categories were coded as tall, simple,

\(^{12}\) SD = 0.96 for the area of iconic houses and SD = 2.52 for the area of non-iconic houses, \(t(93) = 4.64, p < .001\) (\(F = 15.47, p < .001\))

\(^{13}\) \(\hat{\chi}^2(3, N = 93) = 14.79, p = .002\)

\(^{14}\) \(n = 28\) for iconic exemplar houses

\(^{15}\) \(n = 65\) for non-iconic exemplar houses

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Figure 8. Examples of iconic houses (from left to right): *The Dumb Bunnies Go to the Zoo* (Pilkey, 1997/1998) with house depicted without an indication of depth similar to the next two images; *A Garden for Groundhog* (Ballan, 1985/2004) which includes a small but relatively inconsequential wing to the left; *Squares* (Loughrey, 2010) with pyramidal roof; *Sputter, Sputter, Sput* (Bell, 2008) which emphasizes the gabled facade with a lighter color; and *Old MacDonald Had a Farm* (Cabrera, 2008) demonstrating a traditional representation of perspective.
square, urban, neighborhood, haunted, castle, and tree (see Figure 9). Tall houses extended the iconic house in the vertical direction. Simple, square, and urban houses focused on the non-gabled side of the house, featuring the straight eave of the roof rather than its triangular gable. This configuration has been more common in actual residential architecture than the gable-front type. Best suited for narrow lots in urban areas, the gable-front house has not been common in other applications (McAlester & McAlester, 1984, p. 90). The neighborhood houses represented more complicated versions of the first house types often seen in suburban neighborhoods. The next set of patterns—tree, castle, and haunted—described less traditional houses that are then discussed as alternative building types in Finding 1, Question 3.

Figure 9. Diagram illustrating house patterns identified. These could be considered the “primitives” for the patterns with the doors used to indicate the front façade. As the last three forms are complex, three dimensional SketchUp models are used to illustrate them. The haunted house (Yellow Jacket Productions, 2011) is wider and in better repair than haunted houses found in picturebooks. The castle (Sayer, 2007) is more of a generic fortification rather than a more residential palace and the tree (RadicalEdward2, 2007) has been scaled appropriately to the tree pattern.

Tall houses. These houses took the basic elements of the iconic house and stretched it in the vertical direction. Typically more than two stories tall and quite slender, tall houses were usually only one or two units wide or deep (see Figure 10). Seven books (6%) depicted tall houses. I had originally included this type under iconic houses but felt, with the division in terms of height and proportion of the simple, square, and urban houses, that the iconic pattern deserved another look. In this case, the tall houses did not fit well with the rest of the typically small and short iconic houses.
Some common attributes of tall houses included height and width proportion, setting, and roof pitch. The average height of the three tall exemplar houses was 2.83 stories and the width 1.17 units.\textsuperscript{16} Often background houses were more extreme such as a seven story, one unit wide house in \textit{Sputter, Sputter, Sput} (Bell, 2008). Sometimes the bottom of the house was obscured due to dense collections of buildings so that the exact height was unknown. Usually the gabled roof was quite steep, increasing the likelihood of dormer windows and/or a half story in the gable, continuing the vertical theme. These houses do not have a widely expressed precedent in domestic American architecture (cf. McAlester & McAlester, 1984) although they do appear in attached and detached conditions in dense urban areas in the United States and, perhaps more commonly, in other countries (cf. A. Friedman, 2010).

Figure 10. Tall houses from \textit{The Boy Who Cried Alien} (Singer, 2012) that are one unit square in plan with obscured ground floors, although the purple building at center would be considered urban rather than tall. The somber colors and sharp angles are also reminiscent of haunted houses.

\textit{Simple houses.} As the second most frequent category, 31 books (28\%) had simple houses in them. Simple depictions featured a single story house, typically one room deep, with a side-gabled or hipped roof. Common cultural references for this category included the log cabin and the 1947 Levittown Cape Cod (see Figure 11). Exemplar houses of this type were the smallest of all the types at an average of 2.25 square

\textsuperscript{16} SD = 0.58 for height and SD = 0.29 for width
units in elevation, although not significantly smaller than iconic houses at 2.30 square units.\textsuperscript{17} The eight other pattern types including iconic houses averaged 4.06 square units.\textsuperscript{18} This pattern alludes to some of the oldest vernacular houses, particularly as massed plans that were two or more units deep did not appear in domestic American architecture until around 1750 (McAlester & McAlester, 1984, pp. 28–29). Simple plans referencing early European forms could date back to even further such as the Scottish blackhouse in \textit{Wee Gillis} (Leaf, 1938/2006).

Figure 11. Simple houses and historical references from upper left, top row: Replica of the log cabin where Laura Ingalls Wilder was born in Pepin, WI circa 1867 and one of the first types of post-war suburban home, the Levittown, NY Cape Cod from 1948. Bottom row: Log cabin with hipped roof in \textit{Bella Gets Her Skates On} (Whybrow, 2007) and a Cape Cod style house in \textit{Adiós, Tricycle} (Elya, 2009). Photographs by Library Grandma and Bernard Hoffman respectively.

\textit{Square houses.} Continuing to code the picturebooks, I found that I needed another category for some houses that did not fit well with either iconic or simple. I termed these square in regard to their blocky shape (see Figure 12). These particular houses had similar roofs to simple houses—either side-gabled or

\textsuperscript{17} SD = 1.10 for the area of simple houses and SD = 0.98 for the area of iconic houses, $t(44) = 0.17$, $p = .86$

\textsuperscript{18} SD = 3.12, $t(59) = 3.96$, $p < .001$ ($F = 6.96$, $p = .01$)
hipped—but were taller.\textsuperscript{19} The width was typically similar to the height.\textsuperscript{20} They often appeared to be massed with an average of 1.5 rooms deep.\textsuperscript{21} As a moderately sized house, the elevation of square exemplar houses did not vary significantly from houses that were not classified as square. This pattern was featured in 24 of the 110 books (22%).

Figure 12. A stylized but symmetrical square house in \textit{It's Not Fair} (Harper, 1986/2007) that is two stories tall and two units wide, presumably with a side-gabled roof.

\textit{Urban houses}. Although these houses often share a similar roof shape to simple and square houses, a new category seemed called for by the taller houses wherein the wall dominated the façade rather than the roof dominating the façade (cf. McAlester & McAlester, 1984, p. 24). In comparison to tall houses, urban houses had less prominent roofs in elevation, some of these houses even featuring flat roofs (see Figure 10 on page 72 for a comparison). Urban houses appeared in 12 books (11\%) of the sample.

I chose this designation based upon their common depiction in denser settings. Additionally, McAlester and McAlester noted that “houses more than three stories high are rare except in densely populated urban settings where narrow town houses sometimes have four or more stories” (p. 24). Although few detached houses in the books were depicted with more than three stories—only two of the

\textsuperscript{19} M = 1.90, SD = 0.52 for square house height
\textsuperscript{20} M = 1.78, SD = 0.44 for square house width
\textsuperscript{21} SD = .58 for square house depth
exemplar houses (2%) reached 3.5 stories (see Figure 13)—this type combined with the tall exemplars included many of the tallest houses, an average of 2.75 stories compared to 1.77 stories.\textsuperscript{22}

Figure 13. A three and a half story, two unit wide urban house with a deck roof (hipped but flat-topped—see McAlester & McAlester, 1984, p. 43) in Hello, Tilly (Dunbar, 2008).

\textit{Neighborhood houses.} All of the patterns so far addressed house depictions with simple, rectilinear body shapes. However, houses in 21 books (19\%) appeared similar in size to the iconic, simple, and square patterns but were composed of multiple volumes and compound roofs that increased the complexity of the image (see Figure 14). Correspondingly, neighborhood exemplar houses were significantly more likely have irregular body shapes than other houses and less likely to have squat shapes.\textsuperscript{23} These houses appeared moderately sized, averaging 4.30 square units in elevation, a little larger than square houses but not significantly so.\textsuperscript{24} They were generally wider than they were tall.\textsuperscript{25}

I termed these neighborhood houses due to their similarity to those found in suburban neighborhoods from the 1980s on. These houses were often eclectic amalgamations of historical styles (or “neoeclectic” McAlester & McAlester, 1984, p. 487). Their irregular floor plans can be attributed to the

\textsuperscript{22} SD = 0.53 for height of urban houses and SD = 0.70 for height of non-urban houses, t(100) = 3.88, p < .001
\textsuperscript{23} \chi^2(3, N = 93) = 15.01, p = .002, 37.5\% of cells had an expected count of less than 5
\textsuperscript{24} SD = 2.54 for area of neighborhood houses and M = 3.33, SD = 1.32 for area of square houses
\textsuperscript{25} M = 2.32, SD = 0.90 for width of neighborhood houses and M = 1.84, SD = 0.49 for height
invention of balloon and stick framing construction techniques that made corners easier to build after 1850 (p. 30). These houses were also significantly more likely to feature the garages that are now a hallmark of residential architecture.\textsuperscript{26} 50\% of neighborhood exemplar houses had garages compared to 11\% of other exemplars.

Figure 14. Example of a neighborhood house in a Mansard or Neo-French Neoecletic style with compound volumes, irregular plan, and many corners from \textit{Snow Princess} (Paradis, 2005).

\textit{Haunted houses}. The last three categories—haunted, castle, and tree—departed furthest from traditional images. Corresponding with the pilot study, a pattern of haunted houses emerged in 6 books (6\%) of this data set as well. Like neighborhood houses, these often had compound forms with irregular floor plans. However, these diverged from that pattern with additional typical details, somber colors, common types of ornamentation, and poor repair. They also tended to be more upright—average 2.83 units tall by 2.33 wide\textsuperscript{27}—rather than slightly wider like neighborhood houses which averaged 1.83 units tall by 2.32 wide.\textsuperscript{28} As found in the pilot study, these houses seem to reference the Second Empire style popular from 1860 to 1880 (see Figure 15). Historic Second Empire houses commonly had mansard roofs,\textsuperscript{26}

\begin{itemize}
  \item \textsuperscript{26} \textit{p} = .003
  \item \textsuperscript{27} \textit{SD} = 0.29 for height and \textit{SD} = 0.58 for width of haunted houses
  \item \textsuperscript{28} \textit{SD} = 0.49 for height and \textit{SD} = 0.90 for width of neighborhood houses
\end{itemize}
ornamented window surrounds, and cresting and about 30% of them included towers (McAlester & McAlester, 1984, pp. 241–242).

Figure 15. From left to right, the Davenport House in Saline, MI built in the Second Empire style in 1875 compared to images from Bedtime for Boo (Matheis, 2012) and Halloween Goodnight (Cushman, 2010). Photograph by Robert W. Lane.

Castles. Although castles were typically excluded from consideration of exemplar houses, 14 books (13%) included depictions of castles. In 11 of these books other houses were as prominent as or more prominent than the castle depicted. For three books in which there were no other houses, the exemplar houses were categorized under the castle pattern. Depictions that fit this pattern typically featured round or square towers, irregular floor plans, and high stone walls, often with battlements—“a parapet at the top of a wall…that has regularly spaced, squared openings for shooting through” (“Battlement,” 2014).

Castles were generally large and sprawling. Averaging 9.50 square units, this type of house was the largest of all the patterns, reflecting its traditional crossover into multifamily housing. In comparison, other exemplar houses were only an average of 3.27 squared units. None of the exemplar houses depictings indicated depth, but the elevations were an average of 2.17 units tall by 4.33 units wide. This is significantly wider than other exemplar houses which averaged 1.86 units wide. Many of the castle

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29 $SD = 1.89$ for area of castle houses and $SD = 1.99$ for non-castle houses, $t(94) = 5.24, p < .001$  
30 $SD = 0.58$ for castle house height and $SD = 0.58$ for width  
31 $t(96) = 4.90, p < .001$
depictions that were secondary to the exemplar houses, often depicted in the distance as scenery and an indicator of setting, were even larger.

The issue of whether a castle is a house or not was somewhat contentious since they were historically defensive structures that became dwellings by default. In the case of *A Dark, Dark Tale* (Brown, 1981/1992), the text deliberately refers to the building as a house despite the depiction of a castle (see the right image in Figure 7 on page 69). *Maddie’s Monster Dad* (Gibala-Bloxholm, 2011) styles what seems to be a contemporary suburban single-family home as indicated by the steps to the sidewalk, landscaping, and garage as a castle that also incorporates elements of a haunted house (see Figure 16). Additionally, 5 castles (7%) appeared in children’s drawings and designs of houses as further discussed in Question 3, Finding 1.

Figure 16. Maddie’s house from *Maddie’s Monster Dad* (Gibala-Bloxholm, 2011) that combines elements of castle, haunted house, and suburban home in the neighborhood type.

*Tree houses.* Houses that followed the tree pattern showed houses that had been created in hollowed out tree trunks. These were distinct from animal homes in that they depicted numerous elements typical of human houses including doors, windows, curtains, light fixtures, chimneys, porches, picket fences, clotheslines, and even welcome mats. Four books (4%) included this pattern, three of which did not depict any other types of house. These three all featured anthropomorphized animals—rabbits, bears, and
squirrels—as the characters of the story. *The Story of the Leprechaun* (Tegen, 2011) showed the leprechaun living in a tree house as did other taller fairies (see right image in Figure 21 on page 90); Smaller winged fairies lived in a variation of this pattern using hollowed out mushroom stems, whereas the humans lived in simple houses (see Figure 17).

![Figure 17. The Story of the Leprechaun (Tegen, 2011) showing tree houses like that in which the leprechaun lived at the left, mushroom houses for smaller fairies at center, and traditional Irish thatched roof cottages in the human village in the distance.](image)

**Prevalence of the patterns.** The iconic house pattern was featured in the most picturebooks—45 out of 110 (41%). The next most common was the simple pattern, followed by square, neighborhood, castle, urban, tall, haunted, and tree (see Graph 1).
Several measures attested to the variation of the patterns and to their uniqueness. This data was not uniformly distributed among the nine patterns recognized in a goodness-of-fit test based on the total depictions, excluding unknown and other depictions. This strongly suggests that there are patterns which are more common and others that are less common. Additionally, some of the clustering of the categories can be seen with a comparison of the elevation height and width (see Graph 2), although generally height and width increase proportionally.

Graph 1. Comparison of depictions of pattern types and number of picturebooks. Although the sample population included 110 books, the total population for this figure was 190 because each book could contain multiple types of depictions.

32 $\chi^2(8, N = 164) = 79.88, p < .001$
33 $r(110) = .29, p = .002$
Graph 2. Comparison of exemplar house height and width by type. Symbols that would have been on the same data point, for example 1 unit wide and 2 stories tall, have been randomly offset for identification. Excluding outliers, similar types can generally be seen to cluster together.

**Outliers and other books that could not be categorized.** Some of the house depictions resisted categorization for various reasons. Three books (3%) did not contain enough visual information to designate a pattern for any of the depictions within. Although they also included identifiable depictions, 4 books (4%) also contained depictions that could not be identified as part of a pattern for a total of 7 books (6%) with unknown depictions. Twenty-five books (23%) included depictions that could be identified but did not fall within one of the nine categories. The depictions that did not fit within the patterns presented some special case exceptions as well as houses that were especially intriguing in terms of innovation.

Although some historical and cultural styles fit within the categories discussed above, not all did. For example, two Thanksgiving books that fell within the sample included illustrations of the houses built by the Pilgrims. These houses were built in a very specific style (see Figure 18) but also happened to fit well into the simple house pattern.
Figure 18. Historically accurate images of the houses built by the Pilgrims circa 1623 that fit the simple pattern, albeit with a steeper roof than typical, in *Thanksgiving on Plymouth Plantation* (Stanley, 2004) and *This First Thanksgiving* (Melmed, 2001).

On the other hand, the flat roofed pueblo or Spanish Colonial house (see Figure 19), apparently representative of New Mexican architecture in *How to Make a Cherry Pie and See the U.S.A.* (Priceman, 2008), does not fit within any of the patterns. This house could be considered closest to the simple houses with its single-story height and emphasis on what seems to be a longer façade but contains a very different roof form. Including *How to Make a Cherry Pie and See the U.S.A.*, 12 books (11%) included depictions of specific house styles such as A-frames, igloos, Chinese vernacular houses, plantations, houses of wattle and daub, palazzos, and even a couple modernist or international style houses.
Figure 19. Depiction of New Mexico with a nonconforming house in How to Make a Cherry Pie and See the U.S.A. (Priceman, 2008).

Other houses did not fit the nine established patterns of house depiction or existing historical or cultural architectural styles and forms. Nine books (8%) included this type of depiction. These houses varied widely from looking like a common objects such as a teapot in Rolie Polie Olie (Joyce, 1999) and a boat in Charlotte Jane Battles Bedtime (Wolfe, 2011) to recombining different architectural elements in innovative ways in A Cup for Everyone (Yonezu, 2008) and The Last Tiger (Elliott, 2012). These depictions are further discussed in terms of innovation in Question 3, Finding 1.

Finding two: Other characteristics of house depictions. In addition to groupings of specific visual types, house depiction within the sample followed several other notable trends. Those of interest to issues of tradition and innovation in picturebooks included: differences in house depiction between text and images, typical locations of the depictions, the numbers of depictions, and the variety amongst the depictions of houses. Commonly, these characteristics were associated with other attributes of house depictions, their connections identifying nuances to the ways in which they operate.

**Inequality between text and illustration.** Whereas this study was primarily interested in the visual depiction of houses in picturebooks, houses were often represented textually as well. However, between the two media, the ways they portrayed the houses and the extent to which the houses were described were
radically different. In general, the pictures provided more information about the house than the text, especially as not all books with house depictions discussed the house in text.

Observing the disproportionate depiction of houses in the images of picturebooks in comparison to the text, I noted mentions of the word “house” within the text of the picturebooks that depicted houses visually. Some books used a variety of other words—in particular “home” but also “cottage,” “inside,” “farm,” “castle,” and “mansion”—but they varied widely in meaning as to the context and were not included in this investigation. Only 33 books of the 110 books (30%) discussed houses in the text. Those 33 books mentioned houses an average of 2.85 times per book, ranging from 1 to 13 references.34

Mentions of houses within text rarely included information about the physical structure. When houses were described in text, it was often with two preceding adjectives, as in “little yellow house” (Dunbar, 2008/2012). Occasionally, the location of the house was mentioned such as “Once there was a boy who lived in a house in the woods” (Kohara, 2009). Six books (5%) included a descriptive sentence about the house or houses such as describing the houses at Plymouth Colony: “The house was just one big room with a fireplace at one end” (Stanley, 2004). Instead, the house was most often referred to as the object of an action. For example, “See Baby crawl. See baby crawl all over the house” (Milgrim, 2009) or in a book for slightly older children, “I usually come back to my mom’s house after dark on Sunday night” (Cochran, 2009).

With thirteen references, the maximum number found, In Our Mothers’ House (Polacco, 2009) was also longer than many of the books with 2,480 words (Renaissance Learning, Inc., 2014) on forty-eight pages of relatively dense text. In particular, it also focused on the emotional resonances with the physical building. Similarly including a house within the plot, Little Santa (Agee, 2013) addressed a younger audience with six references in a sparse 553-word tale about the rescue operation of Santa’s family from a snow-covered house.

Associations. Mentions of houses within the text were associated with several other variables as seen through some significant results of inferential tests. Some of the more informative comparisons were

34 $SD = 2.46$
amount of realism, locations of house depiction, and roles played by the house within the narrative of the book.

If a house was referred to in text, the degree of realism to which the exemplar house was depicted increased.\textsuperscript{35} Almost half (48\%) of the 21 books with realistic exemplar houses used the word “house.” In comparison, only 2 of the 27 books with exemplar houses illustrated in a very basic or cartoon-like style (7\%) mentioned houses textually.

Location in the book was also associated with referring to the houses in the text. Books that used the word “house” were more likely to include depictions of houses at the end of the book.\textsuperscript{36} Out of 46 books that had depictions of houses toward the end of the book, 20 (44\%) mentioned one or more houses versus 13 of the 64 books that did not (20\%). Books that depicted houses on the back cover followed a similar pattern.\textsuperscript{37} Six out of 10 books mentioning houses (60\%) also included a house picture on the back cover compared to 27 out of 100 books not mentioning houses (27\%).

In terms of the roles the houses played, mentioning houses in text was associated with several different themes. Books with depictions that stressed the conformity of houses were more likely to use the word “house” within the text.\textsuperscript{38} Those in which the house was acted upon by one or more of the characters were also more likely to refer to the houses in the text.\textsuperscript{39} Many books—96 out of 110 (87\%)—used images of houses to express the setting. Of the 14 that the houses were unimportant to the setting, none of these mentioned the houses, faintly suggesting an association between demarcating setting with visual depictions of houses and referring to houses explicitly.\textsuperscript{40}

\textit{A diverging case.} As part of the larger sample of picturebooks, \textit{Thunder Cake} (Polacco, 1990) initially appeared to depict houses in its illustrations. It was analyzed as including three mentions of the word “house” and another three of “farmhouse.” In particular, the first sentence of the front flap read, “A loud clap of thunder booms and rattles the windows of Grandma's old farmhouse...” However, despite

\begin{itemize}
\item \textsuperscript{35} \(t(69) = 3.16, p = .002 (F = 4.04, p = .05)\)
\item \textsuperscript{36} \(\hat{\chi}^2(1, N = 110) = 6.84, p = .01\)
\item \textsuperscript{37} \(p = .06\)
\item \textsuperscript{38} \(p = .01\)
\item \textsuperscript{39} \(\hat{\chi}^2(1, N = 110) = 5.04, p = .03\)
\item \textsuperscript{40} \(p = .01\)
\end{itemize}
several illustrations of a small stone building which turned out to be the barn, the house was only pictured from the inside. Although this study did not investigate this phenomenon further, this example suggests that additional books that depict houses in text but not in the pictures may exist.

**Frequent locations of depictions within a book.** House depictions often occupied particular locations within the typical 32 or 48 pages of the picturebooks. Each book was coded for house depictions in particular segments including the covers and the endpapers. The categories were not exclusive, as depictions could be found in multiple locations. Even with that taken into account, the distribution is unlikely to be due to random association. For example, the solid color wash endpapers of *A Good Night Walk* (Cooper, 2005) were the only pages without houses as the book figuratively walks the reader down a residential street. Regardless of the unequal divisions between locations, depictions appeared more commonly toward the beginning of the books (see Graph 3).

![Graph 3](image)

Graph 3. Number of books with depictions in physical divisions of the pages and covers. Depictions were more likely to be found toward the beginning of the books.

**Number of houses depicted.** The picturebooks differed strikingly on the number of houses that each depicted, suggesting different ideas of “house.” Since one particular house could be depicted multiple times, the number of houses was not approximated by the number of depictions. 

\[
\hat{C}(8, N = 290) = 21.86, p = .005
\]
times within one book, two different counts were taken. First, the total number of depictions, which could include the same house multiple times, was collected. Most depictions only showed part of the house—918 depictions (60%)—in comparison to the 606 full depictions where at least one façade of the house was largely shown. Then the number of distinct houses was assessed with each house was counted only once, regardless of the number of times it was depicted. For example, *Porkelia* (Tucker, 2011) depicted four distinct houses but two of the houses were each represented twice for a total of six depictions (see Figure 20).

![Figure 20. Three pages from Porkelia (Tucker, 2011) illustrating six total depictions in the lower left, right, and left corners of the pages, respectively, of four distinct houses.](image)

The total depictions of houses produced a distinctive distribution of data. As seen in Graph 4, the distribution was extremely positively skewed. The mean of the sample was 13.91 total depictions of houses, with the median significantly lower at 6. The mode was at 3 depictions of houses per book, much lower than the mean and median. Nineteen books (17%) depicted exactly 3 houses. The 75th percentile was relatively low, at just 13 depictions, so that few books exceed that number but they do so dramatically. *The Hinky-Pink* (McDonald, 2008) depicted the maximum number of depictions in a book at 211. In this case, the large number was due to the depiction of an entire historic city from a bird’s-eye view (see Figure 23 on page 96).

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42 skewness of 5.39 ($SE = .23$)
43 $SD = 24.45$
Looking at the number of distinct houses, the distribution was exponential with 35 books (32%) depicting one house each (as seen in Graph 5). The books averaged 8.87 houses each.\(^{44}\) Like the number of total depictions, the median was much lower than the average at 3. Depictions of houses as art or toys (see Question 2, Finding 4) were not included in this count. Very few books contained numerous distinct houses; the 75\(^{\text{th}}\) percentile was low at 9.25 compared to the maximum 132 houses. The *Hinky-Pink* (McDonald, 2008) also depicted the maximum number of distinct houses found.

\(^{44}\) SD = 15.91
Graph 5. Numbers of distinct houses found in picturebooks.

Associations. In comparing the numbers of depictions with the number of distinct houses, the two correlated well.\textsuperscript{45} Thus books with fewer numbers of depictions also featured fewer distinct houses as indicated in Graph 6. However, the ratio of depictions to distinct houses was about a two to three ratio, meaning that for every two distinct houses, one of them is typically depicted twice. The books diverge more from this ratio as the numbers of houses and depictions increase. For example, \textit{Moonlight: The Halloween Cat} (Rylant, 2003) presented a much larger and varying world with 56 distinct houses and 60 total depictions in comparison to \textit{The Story of the Leprechaun} (Tegen, 2011). This book contained 78 depictions of only 21 distinct houses (see Graph 6). These counts of houses fit with the style of each book (see Figure 21): \textit{Moonlight} was portrayed with wavering shapes of dusky but bold colors to depict a somewhat spooky Halloween night ramble. On the other hand, \textit{The Story of the Leprechaun} was colored with fairytale-like pastels and gently detailed lines to present a charmingly comfortable scene in the vein of traditional literature.

\textsuperscript{45} r(110) = .94, p < .001
Graph 6. Scatterplot comparing total number of depictions to number of distinct houses within each book. Moonlight: The Halloween Cat (Rylant, 2003) is depicted as an “x” and The Story of the Leprechaun (Tegen, 2011) as a “+”. The maximum case (at 211,132) has been discarded as an outlier.

Variety of houses depicted. The variety of depictions within groups of houses in each picturebook also contributed to how the book constructed “houseness.” Consequently, each book in the 110 books that depicted more than one house was evaluated on whether eight characteristics—size, shape, style, roof,
window arrangement, color, decoration, and orientation—were the same or different (see Graph 7). The characteristics could be added up with differences as positive marks and similarities as negative marks to provide an “Amount of variety” for each book. Books were only evaluated on characteristics that could be distinguished since particular types of detail were commonly subtracted when many houses were drawn together. Additionally, differences between extreme types within one book such as a castle and surrounding iconic village houses (such as the arrangement seen in the left image of Figure 26 on page 101) were excluded. Window arrangements and decoration differed the most among groups of houses, whereas shape, style, and size tended to be the most similar. Orientation, decoration, and roof shape were characteristics with the lowest absolute tallies, indicating that they were the difficult to consistently distinguish. Shape, size, color, and style were much easier to identify similarities and differences in.

Graph 7. Comparison of similar and different characteristics of houses depicted within each book. If a characteristic was different among the group of houses in a book, it was recorded one book along the positive scale for the characteristic and each characteristic that was similar was recorded as a book along the negative scale.

Associations. These measures of variety were associated with other attributes of house depiction. As would be expected, net measures of variety were significantly larger in books that included the variety

[46] n = 71
role, and significantly smaller in books that included the conformity role. When transformed into ordinal categories (similar, equally similar or different, and different), the variety of depictions within this subset of books was associated with two other characteristics. Books which used houses in the prop role were more likely to depict houses as marginally similar. On the other hand, books in houses that did not serve as props were more likely to depict them as different. Additionally, if houses were depicted on the front cover of a book, the depictions within were more likely to be similar in terms of these eight characteristics. Books that did not have houses on the front cover were more likely to depict houses with more dissimilar characteristics.

**Criterial aspects of houses.** Beyond the variables of form discussed in Finding 1, this research identified further criterial aspects of the house. Although it was not within the scope of this project to assess the prevalence of all of these items, in hindsight they played important role in both identifying houses for analysis and describing “houseness.” Whereas a building did not need to include all of these to make a house identifiable, most houses had more than one. Criterial aspects observed included a peaked roof shape, compact form, scale appropriate for a nuclear family, rectilinear shape, array of one door and evenly spaced punched windows across the façade, windows with grids or muntins, curtains within the windows, a chimney or stove pipe, shutters, siding, front porch or stoop, front walk to the door, and even doormats. Sometimes houses were identified by processes of elimination as well, as barns, sheds, henhouses, shops, and other public buildings such as banks each have their own criterial aspects.

Houses could also be identified through association by context. When a building shared physical properties such as size, proportion, color, shape, and orientation with a building that could be identified as a house, then that building too could be identified as a house. This makes the assumption that houses are generally grouped together, as they would be found in actual neighborhoods. It additionally helped identify partial depictions of houses and houses that became vaguer as they moved into the distance (see Figure 22).

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47 $t(108) = 7.41, p < .001$
48 $t(108) = -3.83, p < .001$
49 $t(49) = -3.31, p = .002 (F = 8.74, p = .004)$
50 $t(108) = -2.31, p = .02$
Finding three: Roles played by houses. The inclusion of houses in each book appeared to serve different purposes that influenced how they were depicted. Based on observations throughout the collection and analysis process, fifteen roles were identified and coded. They included plot, identity, origin, destination, visit, drive-by, scenery, setting, inside, prop, conformity, variety, refuge, mood, and symbolism (see Graph 8). These categories were not exclusive, as even just one depiction could function in multiple capacities. Several roles were significantly associated (see Table 1 on page 202 for inferential tests between roles).
Plot and participation in the events of the story. One of the first and most obvious attributes was whether the house depictions were important to the plot. Exactly half the sample (50%) or 55 books contained illustrations of houses that participated in the story. These illustrations depict places where important events occur. For example, in *The Matzo Ball Boy* (Schulman, 2005) the protagonist becomes part of the meal at a poor man’s cottage in the forest and Sister Bear initiates her interest in the tooth fairy while playing at her friend Lizzie’s house in *The Berenstain Bears and the Tooth Fairy* (Berenstain, 2012).

In the other 55 books, the house depictions played more of a decorative role or only provided information that was unnecessary to making sense of the story. For instance, in *A Train Goes Clickety-Clack* (London, 2007), the train made its way through a town with several houses. Likewise, the requested pie in *Princess Pig* (Spinelli, 2009) sat on the windowsill of a farmhouse which was not important to the plot in any other way.

When houses were important to the plot, they often corresponded significantly with other roles. Books featuring this role were more likely to also feature the identity role, present the house as an origin,
destination, or place for visitation, feature it as a prop to be acted upon, use the house to depict setting, present the house as a comfortable refuge, and promote symbolic interpretations of the house. On the other hand, books with houses that were important to the plot were less likely to feature them as a drive-by to suggest distance, and depict variety.

Identity and ties to characterization. Houses depicted in picturebooks were often strongly associated with primary characters within the story. Out of the 110 books, 75 (68%) included depictions that suggested that they belonged to the protagonist or another primary character. This left the books where houses just provided background images (32%) as the exception rather than the rule. Use of the identity role did not differ based on whether the characters were people, anthropomorphized animals or other entities, or animals. $^{51}$

These depictions provided information about the character by suggesting where they live. Aspects of the house such as type, size, style, and repair as well as information about the neighborhood implied characteristics of the associated characters. One of the few books that presented houses in an urban setting, *Come On, Rain* (Hesse, 1999) featured depictions of moderately sized but plain houses in good repair suggesting comfortable means, if not affluent economic status, and reasonably nurturing family situations.

In one case, the houses stood in as visual placeholder for the characters. In *The Hinky-Pink* (McDonald, 2008) speech balloons were overlaid on top of buildings to indicate the character’s participation in the story. In this way the illustrator depicted where the characters were located from some distance away rather than the actual character (see Figure 23).

$^{51} \hat{C}(2, N = 110) = 1.9, p = .38$
The importance of the house as a means of characterization could also be seen in the odd conflation of human dwellings with animal dwellings in several books. *Little Donkey’s Wish* (Weigelt, 2005) began “it was a quiet evening in the barn” and went on to refer to the setting as a barn another four times. However, when Santa takes Josie the donkey outside to attach to his sleigh, the building depicted in the background clearly reads as a house with a window, lights on inside, a chimney, and a door with lock (see Figure 24). *The Happy Lion Roars* (Fatio, 1957/2006) similarly attributed the characteristics of human dwellings to the lion’s habitat. In the illustrations, a house-like building with metal bars across the windows was labeled “Maison du Lion” in the illustration and referred to in the text as “the Lion’s house.”
Houses as origins. House depictions described the point of origin from which the protagonist would enter out into the world in 40 books (36%). Although predominantly an outside play story, Here Comes Jack Frost (Kohara, 2009) began with the image of a boy and his dog inside. This is then followed by a two page spread showing the house as they look out the window and other spread which shows them outside, the door left open behind them in one of the most explicit examples of a depiction working as an origin (see Figure 33 on page 115). In addition to physical journeys, the excursion could also be metaphysical. The boy in How I Learned Geography (Shulevitz, 2008) is transported far away through his imagination by focusing on a map that his father hung in their shared one room house.

Houses as destinations. Conversely, illustrations in picturebooks depicted the destination of a journey in 38 books (35%). Often when the house served as a destination, it was the home of a relative such as the grandparents in The Magical Christmas Horse (Clark, 2011) although it could also be that of a stranger. For example, in order to teach a lesson, Pinkerton, the protagonist of Me First (Lester, 1992/2013), was drafted into the employ of a “sand” witch who lived in sandcastle house.

A subset of these books, 23 books (21% of the sample), included houses that were both origin and destination of a journey. Four books represented a one way trip, such as the boy’s journey from his house to his grandmother’s in Road Work Ahead (Suen, 2011). More commonly, 19 books (17%) described a round
trip such as ending Alfie’s escape to the backyard in *Alfie Runs Away* (Cadow, 2010) with Alfie’s happy return home.

Visitors to houses. In 25 books (23%) the story focused on a visit to someone else’s house. Most often this was a relative’s house, especially when the visit was more than brief. These visitors also ranged from an intruder in *Believe Me, Goldilocks Rocks!* (Loewen, 2011) to a friend in *A Bedtime for Bear* (Becker, 2010) and could even include firefighters come to put out a fire in *Big Frank’s Fire Truck* (McGuire, 1996/1997) and *Firefighters A to Z* (Demarest, 2000).

**Driving by and implying distance.**

Twenty-eight books (25%) depicted a series of houses for the apparent purpose of indicating distance along a journey. Typically these series included a lot of variety between the different houses and other buildings. One of the most distinctive examples was on the endpapers of *Late for School* (Calmenson, 2008). These pages displayed the entire route taken within the story with all the houses and buildings along it as a hint of the journey to come (see Figure 25).

![Figure 25. Endpapers from Late for School (Calmenson, 2008) depicting the drive-by role. This page foreshadows the entire journey of the book from home in the lower left to school in the upper left.](image)

Some books like *Don’t Squish the Sasquatch!* (Redeker, 2012) and *A Goodnight Walk* (Cooper, 2005) broke up the sequence of houses among several pages. Cooper spread out the houses seen along an
evening walk with one per page. *Don’t Squish the Sasquatch!* used close up buildings on the edges of the double page spread to suggest the transition from suburb to city. Shulevitz (2008) presented a similar sequence on one two-page spread in *How I Learned Geography*.

Scenery and aesthetic enhancement. The most prevalent role for the house depictions was that of scenery. Found in 97 books (88%), this role required little of the house depictions beyond appearing for aesthetic purposes. Since these houses did not need to impart new information, their depiction was at times repeated from page to page. For instance, *Humbug Rabbit* (Balian, 1974/2004) depicted the same house from the same perspective on almost every page, providing a point of consistency between changing seasons and times of day. Other books depicted houses nestled in hills or foliage in the background of image for both scenic and setting purposes.

Books that did not show houses for aesthetic purposes often had limited numbers of depictions—averaging 2.62 house depictions per book. These books also typically depicted a small number of distinct houses.

Indicating setting. House depictions for the purpose of describing setting were found in 96 books (87%). These images were important to expressing where the action within the book took place. Illustrations including houses often helped set the story in the countryside, typically through their absence as the isolated farmhouse in *Duck on a Bike* (Shannon, 2002) does, or in a generic suburb with their plenitude. These depictions also pinpointed more specific settings such as historic Scotland in *Wee Gillis* (Leaf, 1938/2006) with the depiction of a blackhouse at the beginning of the book.

Stories that happen inside. Books that featured a story that took place primarily inside a house were relatively uncommon with only 27 of the books (25%) doing so. Instead, most of the books focus on action that happened outside the home such as a fly-away adventure in *Flora’s Very Windy Day* (Birdsall, 2010) or plots that involving going back and forth between the indoors and outdoors. Both *It’s Not Fair* (Harper, 1986/2007) and *Best Baby Ever* (Milgrim, 2009) strung their stories around typical activities in a child’s life including going to the playground, trips to other locations, indoor play, and meals. Inside stories

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52 $SD = 1.45, t(100) = 4.83, p < .001 (F = 4.96, p = .03)$

53 $M = 1.38, SD = 0.65, t(98) = 5.03, p < .001 (F = 5.59, p = .02)$
tended to be somewhat narrow in focus, such as the anxious preparations at home for school in *First Day Jitters* (Dannebrg, 2000) or occasional short trips outside for activities like playing ball in *Never Ask a Bear* (Bonnett-Rampersaud, 2009).

Props: Houses that were acted upon. Seventeen of the books (15%) included houses that were acted upon in the course of the story. The two books about fire fighters, *Big Frank’s Fire Truck* (McGuire, 1996/1997) and *Firefighters A to Z* (Demarest, 2000), fit this description as the fires were put out. Another prominent subtheme was cleaning: for instance the whole family “mopped the house from tip to top” in *Rolie Polie Olie* (Joyce, 1999). In several cases the house was damaged, typically through accidents such as when the Dumb Bunnies “pulled into their garage” in *The Dumb Bunnies Go to the Zoo* (Denim, 1997/1998). In only one instance, the house became an important prop when it was painted in bright colors and patterns in *Pete & Pickles* (Breathed, 2008).

Emphasizing conformity. Some house depictions showing multiple houses stressed the uniformity of house appearance and often spacing and orientation as well. Ten books (9%) included this role. They often depicted contemporary suburbs or historic small villages. The two Thanksgiving books depicting Plymouth Village were grouped into this role since the houses conformed to very specific style, color, shape, roof form, and decoration (see Figure 18 on page 82). Other instances of this role displayed the houses from a distance; in the case of *Wishes Come True* (Marsoli, 2011) the uniform houses of a city in the distance were replaced with more individualistic dwellings and shops when the characters approached (see Figure 26).
Portraying variety. On the other hand, 13 books (12%) depicted series of houses with a large degree of variety. Within each image, the houses often differed in terms of color, size, body shape, style, decoration, window arrangement, roof shape, and orientation. Books where houses played this role often overlapped with those that featured drive-bys with 9 books (65% of the variety group), assigned to both roles. Books ascribed to the variety role negatively related to those where houses were involved in the plot. Eleven books (85% of the variety role) did not coincide with the plot role, a much higher percentage than would be predicted.

Refuge and the comfort of home. Portraying the house as a refuge, 27 books (25%) particularly emphasized the safety and comfort of the home. Houses in the other books were usually uninteresting but some houses, especially those that followed the haunted pattern, were depicted as challenging and exciting. For example, Engelbreit (2008) played with the contrast between refuge and haunted house in *Queen of Halloween*. Her trick-or-treating protagonists found a kindly old lady inside what appeared to be a haunted house once they had the courage to ring the bell.

This role was associated with several other roles. Books where houses played the role of refuge were more likely to include the roles of plot and identity. The role of refuge also had a negative relationship with books where houses were displayed to indicate distance along a drive. In this case, refuge books were unlikely to also belong to the drive-by role.
Setting the mood. Books that included the mood role depended strongly on the aesthetic depiction of the house to help establish a distinct atmosphere for story. This mood ranged from a fun sense of scary in *Maddie’s Monster Dad* (Gibala-Bloxholm, 2011) as can be seen in the somber colors and castle-like details of the house (see Figure 16 on page 78) to a spirit of fun and whimsy with saturated colors, rich textures, and boldly curving shapes (see Figure 25 on page 98) in *Late for School* (Calmenson, 2008). Forty-four books (40%) included this role. Books that included the mood role were more likely to include the refuge role.

Symbolic houses with deeper meaning. Although difficult to classify due to personal interpretation, 24 books (22%) seemed to use depictions of the house to represent ideas beyond identity and the comfort and safety of refuge. The small, distant, but yet comfortable portrayal of Jack’s house in *Can Anybody Hear Me?* (Meserve, 2008) mirrored his alienation from his noisy family. When read as symbols, house depictions often spoke to economics and power. The imposition of the stepmother on top of the house, theoretically in the foreground, at the beginning of *Seriously, Cinderella Is So Annoying!* (Shaskan, 2011) suggested her greed and search for power. This was mirrored by her comment on the next page, “All I ever wanted was a husband and a mansion.”

The symbolic role significantly associated with other patterns in a couple ways. Books that used house depictions to set the mood were more likely to use houses in a symbolic role. Similarly, the plot role was positively associated.

**Finding four: Ties to the American Dream.** House depictions showed evidence of ties to the American Dream. They provided commentary on economic aspects of living, suggesting that wealth and comfort are related to houses. The books portrayed racial characteristics of protagonists associated with houses. Additionally, house depictions presented evidence of agrarian ideals, affirming the house’s signification of independence.

**Economic inferences from house depictions.** With long-standing ties to economics, house attributes such as size, repair, and general appearance suggested ideas of social class, reinforcing the connection between the house and the middle class. Houses in picturebook illustration were found to be significantly smaller than their real world counterparts. The mean volume of exemplar houses in
picturebooks was 4.72 units.\textsuperscript{54} If one unit is assumed to be equal to 320 square feet, the average house in picturebook illustration would be 1,510 square feet. If the median, 3, were to be used instead, the average size would be 960 square feet. In comparison, the median house size was 1,750 square feet for American houses (United States Census Bureau, 2013c) and the median number of rooms 5.5 (United States Census Bureau, 2013c). Sizes of houses in picturebooks did not correlate to grouped square footages of houses from the United States Census.\textsuperscript{55}

The exemplar houses were generally in good condition. Seventy-two (65\%) featured good repair, 34 (31\%) fair repair, and 4 (4\%) poor repair. The poor repair of exemplar houses correlated with books that included the haunted pattern.\textsuperscript{56} Exemplar houses with irregular body shapes also tended to poor repair.

Although focused around the middle class, the exemplar houses represented some diversity of economic class as can be seen in Graph 9. The average class was lower aspiring middle class where “adults imitate neighbors with consumer purchases. Going to college is emphasized with children although they may not have gone to college themselves” (Scheffert, 2009).\textsuperscript{57} Given that less optimistic categories like illusory middle class and situational poverty were poorly represented, either the picturebooks took a positive approach or that visual indicators for these statuses do not exist. Median family income was $64,585 per year with 11\% of families below the poverty level (United States Census Bureau, 2013b). In comparison, economic classes portrayed in picturebooks seemed skewed toward greater wealth. Whereas wealth correlated with house size,\textsuperscript{58} the houses portrayed in picturebooks were generally smaller than would be expected of the economic class.

\begin{itemize}
\item \textsuperscript{54} \( n = 71, \ SD = 4.04 \)
\item \textsuperscript{55} \( r(9) = -.23, \ p = .55 \)
\item \textsuperscript{56} \( r(110) = -.48, \ p < .001 \)
\item \textsuperscript{57} \( Mdn = 7, \ M = 6.55, \ SD = 2.44 \)
\item \textsuperscript{58} \( r(71) = .585, \ p < .001 \)
\end{itemize}
Race was another attribute linked to the house and concepts of class and wealth. Discarding books that featured animals, ghosts, robots, monsters, other non-humans, and those whose race could not be determined, 67 books (83%) depicted primarily White characters. Of the other books featuring humans, 6 featured Black characters (7%), 2 Asian (3%), 2 Latino or Latina (3%), and 4 featured characters of more than one race (5%). This data did not match the population of the United States (United States Census Bureau, 2013g). Ostensibly, the sample overrepresented White protagonists by about 24 books and underrepresented Blacks by 4, and Asians by 2. Latino or Latina protagonists were possibly underrepresented by as much as 11. Even 13 of the books that depicted animals or other humanoids depicted them as white or pink. In comparison to statistics published by the Cooperative Children's Book Center (n.d.-a), the observed racial diversity was more similar to what might be expected. The expected distribution included 4 books about Blacks, 2 books about Asians, 2 books about Latino and Latinas, and 1 book about American Indians. Of the books that featured Blacks, only three of them focused on a contemporary time period. Although not a significant finding given the small number of people of color

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59 \( n = 81 \)

60 \( \chi^2(3, \ N = 77) = 24.18, \ p < .001 \)

61 \( \chi^2(4, \ N = 77) = 3.71, \ p = .45 \)
depicted, non-White characters were more frequent in books that included the driveby role. This role separated the characters from house ownership by focusing on a large number of houses.

_Agrarian ideals_. Dating back to Thomas Jefferson, agrarianism has been considered an American ideal (see Jefferson, 1853, p. 176). Agrarianism claims that farming and rural life benefits humans through independence and an almost spiritual connection to the earth (cf. Inge, 1969). Matching well with the productivity of the land in the United States as well as the availability of space for human habitation, this philosophy can still be seen today in the built environment.

This ideal was also reflected in children’s picturebooks. The large number of books that depicted only one house—35 books (32%)—suggested both isolation and independence. Most of the books—45 books (44%)—additionally featured rural environments (see Graph 10). In comparison, 81% of the United States lived in urban areas of 2,500 people or larger and 71% in urban areas of more than 50,000 people in 2012 (United States Census Bureau, n.d.). Only 21 of the books (19%) depicted actual farms but this is still quite high considering that less than 1% of full-time civilians work as farmers (United States Census Bureau, 2012). Although not fully pursued by this study, no houses were portrayed with modifications for inhabitants with disabilities.


\[ p = .19 \]

\[ n = 103 \]
Summary. Illustrations in picturebooks for children provided evidence as to how the illustrators construct idea of “house” in several ways. They depicted houses according to patterns with different historical and cultural allusions that function differently. These pictures also depicted different ways of describing houses, different locations for houses, different numbers of houses, and different amounts of variety within groups of houses that create different effects in the imagined worlds they presented. Lastly, the roles that houses played within books contributed to the multiple meanings a house might signify.

Question Two: Correlations between Drawings and Illustration

Several findings addressed the question, “How do the prevalent patterns of house depiction visible in children’s drawings of houses correlate with depictions of houses in picturebooks?” First, the children’s pictures were compared to picturebook illustration in terms of the nine patterns of house depiction identified in Question 1, Finding 1, presenting some divergences. Then, other attributes that varied between children and illustrators were examined, including: fractional depictions, focusing on the front façade, flatness and uses of perspective, demonstrations of conceptions of space, presence of symmetry, and depiction of particular details. The data from Investigation 2 also presented some evidence as to how houses were connected with wealth. Additionally, creating these houses did not happen in a vacuum but instead was influenced by social interactions. Finally, examples of houses depicted as art and design within the illustrations are presented for comparison.

Finding one: Diverging patterns. Children’s artwork and picturebook illustrations shared most of the same patterns of depiction discussed previously (see Graph 11). Whereas almost all patterns were found within the children’s pictures, they did so to different degrees. Several differences in the patterns portrayed between the houses produced in response to the request to “draw a house” (drawings) and the request to “design a house” (designs) were noted as well.
Graph 11. Comparison of patterns of house depiction between the samples of picturebooks, exemplar houses, children’s drawings of houses, and children’s designs of houses.

Iconic houses were most likely to be found in children’s drawings. The drawings included a greater proportion of iconic representations with 20 instances (51%). Exemplar houses (29%) and designs (30%) had much smaller proportions. Simple houses did not appear in the designs (0%) and only appeared once in the drawings (3%) compared to the exemplar houses which were represented using the simple pattern 21 times (20%). Neighborhood houses were similarly common within the exemplar houses (13%) in comparison to the drawings (3%) and designs (3%). Whereas the tree pattern was rather evenly represented, the haunted pattern did not appear in either the drawings or the designs. Among designs, the castle pattern (12%) and depictions which could not be categorized (36%) were overrepresented.

One new pattern was identified within children’s drawings but categorized under “other”—the manor. A picture of an iconic house with symmetrical wings appeared three times, once as a design and twice in the samples of drawings (see Figure 27). Only one of these latter houses was analyzed as part of the sample since it was secondary to another house on the same sheet. This pattern only appeared in How to Make a Cherry Pie and See the U.S.A. (Priceman, 2008) on a page depicting a cotton plantation in

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64 $\chi^2(2, N = 182) = 7.08, \ p = .03$

65 $n = 39$ for drawings, $n = 105$ for exemplar houses, and $n = 33$ for designs
Louisiana. Although the symmetry made these houses look vaguely neoclassical, one iteration of the pattern with pointier gable-like structures on the wings appeared to relate to the castle pattern as well.

Figure 27. Example of the manor house pattern that appeared in the artwork of two children but not with any regularity in picturebooks. At left, a secondary drawing by Participant 8 (male, age 6) and right, a drawing by Participant 11 (female, age 4).

**Finding two: Variable attributes.** A few informative attributes of the depictions of houses varied to some degree between the work of children and that of picturebook illustrators. First, children focused on the fronts of houses more commonly than the illustrators. This was perhaps connected to the lack of perspective with which children’s houses were commonly represented. Children’s artwork also attempted to portray houses more symmetrically than picturebook illustration. Children and illustrators included different details within their representations of houses as well. Fractional depictions were of some interest in that illustrators were more likely to present partial depictions unlike children, who usually kept their drawings inside the edges of the page. Children’s artwork depicted different understandings of space than that of illustrators, although both frequently departed from traditional techniques for realistic representation. Lastly, connections to wealth seemed important to the children’s imaginings of houses and their purposes varied from those of illustrators. In general, these attributes seem indicative of how children and illustrators conceptualize the idea of “house” through their representation of houses.
**Fractional depictions.** Whereas the picturebooks included partial depictions with parts of the house obscured by scenery or the edge of the page, children’s houses were rarely less than complete. Picturebook illustration included 918 partial depictions in comparison to the 606 full depictions, a full 60% of the houses depicted. Children’s artwork only contained 11 partial depictions (15%), none due to obscuration by scenery. In all but four cases, these appeared to be issues with unintentionally running out of room on the page, as most included some attempt to fit the house on to the page (see Figure 28). Three of these pieces—both drawing and design by Participant 25 (male, age 8) and design by Participant 26 (female, age 5)—attempted to use perspective in their portrayal of a house and let the side of the house trail off the page to the right (see Figure 34 on page 120). There was no significant difference concerning the amount of house depicted between children’s drawings and designs.67

![Design a house:](image)

Figure 28. Design by Participant 4 (female, age 6) that demonstrated some struggle with the orientation and size of the paper. The tower on the right disappeared off the page toward the top and compressed at the bottom in order to fit on the page.

**Focus on the front.** In general, depictions of houses focused on the front façade, as determined by the location of the door. However, they were significantly less likely to do so in picturebooks than in

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66 n = 71
67 t(38) = 1.31, p = .20 (F = 7.45, p = .01)
children’s drawings or designs. The children generally portrayed only the front façade. Two drawings (6%)—by Participants 25 (male, age 8) and 38 (female, age 7)—and 3 designs (9%)—also by Participants 25 and 38 along with Participant 26 (female, age 5)—included a side. Participant 34 (female, age 8) provided the one design (3%) in which a drawing or design actually focused on what appeared to be a side, although including a second side as well (see right image Figure 48 on page 138). There was no association between drawings and designs in terms of focus, as the counts did not differ significantly from each other.

In picturebooks the illustrators displayed a greater range of emphasis, depicting different combinations of façades. Only 52 exemplar houses (51%) were limited to just the front façade. Illustrators depicted the front façade and one of the sides with emphasis on the front 25 times (25%) and emphasis on the side 10 times (10%). They depicted the back or back and side of 7 exemplar houses (7%) and only a side of 8 exemplar houses (8%). Illustrators were often skilled in directing emphasis, using nuanced techniques like landscaping, light, shadow, and decoration in addition to orientation and presence of a front door.

**Flatness.** Beyond focusing on the house front, use of perspective also differed significantly between illustrators and children. Most houses in picturebooks were portrayed with traditional representations of perspective as demonstrated in 67 exemplar houses (61%). At the other end of the spectrum, 29 exemplar houses (26%) were depicted as flat, without any indication of perspective. Houses illustrated with non-traditional representations of perspective would often indicate depth by depicting the side of a house but would not align with vanishing points. These depictions were common in picturebooks with 14 exemplar houses (13%) shown this way.

On the other hand, children depicted houses as flat almost exclusively: 37 drawings (95%) and 29 designs (88%) were shown this way. No child used traditional representations of perspective for either activity. Four participants—Participants 25 (male, age 8), 26 (female, age 5), 34 (female, age 8), and 38 (female, age 7)—attempted some sort of perspective. This resulted in 2 drawings (5%) and 4 designs (12%)

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68 \( \chi^2(2, N = 170) = 16.85, p < .001 \)
69 \( n = 36 \) for drawings and \( n = 32 \) for designs
70 \( \chi^2(2, N = 68) = 1.55, p = .46 \)
71 \( n = 102 \)
72 \( \chi^2(2, N = 182) = 80.17, p < .001 \)
that used non-traditional representations of perspective (see Figure 29 for examples). There was no significant difference concerning the use of perspective between children’s drawings and designs.\(^{73}\) Perspective was related to depicting façades beyond just the front such that traditional depictions of perspective were associated with illustrations that did not focus on the front façade.\(^{74}\)

![Figure 29. Designs by Participant 25 (male, age 8) and 38 (female, age 7) that show attempted use of perspective. Participant 25 (left) let the ridgeline of the roof trail off to the right rather than complete the side. Participant 38 (right) seems to have struggled with how perspective should be represented with the complex shape.](image)

Several cases where only a portion of the house would be depicted using perspective were observed as well. Typically this was part of the entry to the house. The house in *Easter at Grandma’s* (Bolam, 2009) was portrayed as flat but the front door angled in to suggest it was open. The drawbridge in Participant 3’s design (female, age 6) was similarly splayed to the side, indicating an open position. With the size difference between the entry and the profile of the house, it was sometimes difficult to determine if the straight on view was concealing some of the indicators of perspective.

*Understanding space.* Children depicted space differently from picturebook illustrators in several ways. First, constructions of house exteriors do not seem to correspond with likely interior layouts. Although they do so in different ways, both children and illustrators have portrayed interior and exterior

\(^{73}\) \(p = .40\)

\(^{74}\) \(\chi^2(2, N = 170) = 10.33, p = .01\)
objects simultaneously. Finally, children’s verbal descriptions of their houses did not always match their depicted buildings.

Both children and illustrators created house exteriors that were unlikely to correspond with logically inhabitable interiors if the depictions were assumed to be to scale. Two particular techniques employed were avoiding windows on the first story and staggering windows. Houses that were very narrow would be impractical, but often reached an impossible extreme in some of the towers children depicted.

Children were also more likely to include interior objects in their pictures of houses (see Figure 30). Two children separately commented that they drew the refrigerator when asked about their depictions of houses. Another two children included couches in their images. A variety of other objects also appeared in the work of individual children, including dressers, beds, bedroom doors, the kitchen counter, money, and a car in the garage, all as explained by the children. A “basmite [sic]”—basement—was even drawn and labeled in Participant 8’s design (male, age 6—see Figure 50 on page 140).

Figure 30. From left to right, drawing by Participant 18 (male, age 8) and design by Participant 23 (male, age 6) that show interior objects on the outside of the house. According to Participant 18, the rectangles with large dots in the center were the bedroom doors and the rectangles toward the edges with the horizontal lines and vertical row of dots were the dressers. The ladder-like piece may have been a staircase. In Participant 23’s design, the rectangle with the line through the center to the left was the couch and the pattern of circles to the left was the money inside the house.
Several illustrators used similar techniques to children in displaying interior and exterior in the same image (see Figure 31). In particular, several illustrators depicted houses using cross-sections. These appear to have allowed them to show both the inside of the house and the outside while following the logic of technical drawing techniques. Six books (5%) included this technique. *Curious George Visits a Toy Store* (Rey, 2002) diverged some by depicting several dollhouses with one side of the house removed for access. Additionally of note, *Tikki Tikki Tembo* (Mosel, 1968) came closest to representing interior and exterior simultaneously, as the children did. In this case, one wall was removed, selectively removing what should have been an exterior façade. Despite these examples, children were more likely than illustrators to display both interior and exterior items at the same time.\(^75\) Their drawings did not vary significantly from their designs in depictions of interior objects.\(^76\)

![Figure 31. Examples of house depictions simultaneously showing the inside and outside. From left to right, Pete’s house filling up with water as the friends attempt to escape in *Pete and Pickles* (Breathed, 2008), dollhouses in *Curious George Visits a Toy Store* (Rey, 2002), and the illustration in *Tikki Tikki Tembo* (Mosel, 1968) where the artist has approached how children seem to represent space.](image)

Whereas there is no direct comparison with the picturebooks, children’s discussion of their houses provided seemingly contradictory information regarding size. Participant 18 (male, age 8) commented that his design (see Figure 32) was really big and would even require two butlers (compare to the left image in

\(^{75}\) $\chi^2(1, N = 180) = 7.80, p = .01$

\(^{76}\) $\chi^2(1, N = 70) = 0.43, p = .51$
Figure 30 on page 112). Although it barely fits on the page, this house only appears to be two units wide by two and a half stories tall: approximately 3,200 square feet if it were two units deep. When asked about her artwork, Participant 9 (female, age 8) commented that she liked her design better than her drawing because it was bigger. However, they both seem to be one unit wide and two stories tall, if the windows on the design are taken to be on a different floor than the door which is rather ambiguous. Similarly, other children talked about the number of people that would live in their houses, ranging from six to twelve occupants. At the United States median 750 square feet per person (United States Census Bureau, 2013f), these houses would theoretically range from 4,500 square feet to 9,000 square feet, much larger than their depicted buildings.

Figure 32. Design by Participant 18 (male, age 8) that he verbally described as “as big as COSI,” a 320,000 square foot science museum (COSI, n.d., para. 1).

Picturebooks may have some evidence of contradictory ideas of size as well. The “little yellow house” in Hello Tilly (Dunbar, 2008) was actually depicted as two units wide and three and a half stories tall (see Figure 13 on page 75). Additionally, interior scenes frequently depict more gracious rooms than the exterior would suggest. An example of this can be seen in Here Comes Jack Frost (Kohara, 2009): a
somewhat generous living room on the interior appears to be about half the size when seen from the outside (see Figure 33).

Figure 33. Comparison of a generous interior space within a much smaller exterior shell at the beginning of Here Comes Jack Frost (Kohara, 2009). The proportion of the window to the wall changed drastically between the two images.

**Symmetry.** Amounts of symmetry varied among the exemplar houses, drawings, and designs. Each house was assessed for symmetry—the same number of doors and windows on either side of the centerline and the same form to each side. Smaller details such as chimneys, garages, or decoration did not exclude symmetry nor did reasonable allowances for the child’s ability. Other houses could be balanced—for example replacing a window with a door—or asymmetrical (see Graph 12).
The level of symmetry differed depending on the sample, as can be seen in Graph 12. Several particular criteria were significantly different from each other. Exemplar houses from picturebooks were much less likely to feature symmetry than either designs or drawings. Balanced depictions did not show up at all in the designs but appeared in both drawings and exemplar houses to a moderate extent. The drawings had fewer instances of asymmetry than the exemplar houses.

Although not a well-supported sample, I briefly surveyed the 76 houses in my immediate neighborhood in terms of their symmetry. This provided a comparison that speaks mainly to my own personal experience. These houses were built circa 1995 as tract housing. Unlike most suburban developments where one company builds all the houses, the houses were built by several builders and thus have a little more variety than some neighborhoods. Of these houses, not one was symmetrical or balanced due to the presence of two car garages on every house. If the garages were removed, 9 (12%) could be symmetrical and 11 (15%) balanced. This data also varied significantly based on the sample. There were

$\chi^2(4, N = 167) = 14.85, p = .01$

$\chi^2(6, N = 243) = 47.19, p < .001$
fewer instances of symmetrical façades and substantially more asymmetrical façades on actual houses than
in house depictions.

Selective inclusion of details. Children’s artwork differed from illustrations in picturebooks in
respect to the details that were included. In one case children included more detail than professional
illustrators. Drawing in the shingles on the roof seemed more common in works by children with 5 of the
72 houses (7%) featuring them. Illustrators sometimes indicated the texture of the roof as well in various
ways depending on their style and how far away the house was. However, they did not draw each shingle
individually, as two children did, or the outline of each shingle. Instead, illustrators typically provided a
few bumpy lines or a mottled texture.

Although garages were not very common among either group, garages were depicted in 16
exemplar houses (16%), 3 drawings (8%), and 5 designs (19%). Whether a garage was included did not
differ by group.\(^79\) Additionally, children and illustrators featured equal numbers of garages on average.\(^80\)

On the other hand, illustrators were much more likely than children to include other common
house features such as the front porch and chimneys. The presence of some sort of entry feature differed
based on whether the image was created by a child or illustrator.\(^81\) Twenty-two of the exemplar houses did
not depict enough of the entry to determine if a porch was present or not. These included 23 houses with a
few steps or small stoop (26%), 14 houses of a large or covered stoop (16%), and 15 houses with covered
front porches (18%).\(^82\) In comparison, only 1 house by a child (2%) included an entry feature. In this case,
Participant 3 (female, age 6) designed a castle with an open drawbridge over a moat that seemed to suggest
a step or stoop. Other possible indicators of such an entry feature included a doormat in Participant 32’s
drawing (female, age 7) and a casing around the door in Participant 38’s drawing (female, age 7)).

Illustrators were significantly more likely to include more chimneys in their depictions of
houses\(^83\). Ten picturebooks did not show enough of the exemplar house to determine if there was a chimney
or not and the presence of a chimney could not be distinguished in four of the children’s houses. Chimneys

\(^{79}\) \(\chi^2(2, N = 166) = 1.84, p = .40\)
\(^{80}\) \(t(164) = -0.01, p = .99\)
\(^{81}\) \(p < .001\)
\(^{82}\) \(n = 88\)
\(^{83}\) \(t(164) = 6.72, p < .001 \ (F = 41.41, p < .001)\)

117
were featured on 62 exemplar houses (62%), 4 drawings (11%), and 6 designs (20%).\textsuperscript{84} In comparison, 34% of year-round housing units in the United States have useable fireplaces (United States Census Bureau, 2013c).

**Finding three: Representing wealth.** Like houses in picturebooks, children’s depictions of houses were considered in regard to economics. Some evidence indicated connections between houses and wealth although other evidence supported no significant links.

An interchange between two participants revealed an unexpected sense of competition expressed through economic ambitions while they were working on their designs. Participants 3 and 4 were both six-year-old girls going into the first grade, Black and White respectively. Unlike many of the other participants, they did not know each other before hand. When I asked about their houses, which both looked like castles, it started an interchange wherein each girl countered each other with aspirations to be rich and famous and to live in a mansion when she grew up. There seemed to be a sense of competition between the two girls that stemmed from their similarity but also tied into their pride in drawing skill. The expression of these sentiments in a “big fancy house,” as Participant 3 deemed her design, evoked some of the ideas of economics observed in picturebooks.

In examining further the perception that bigger and more were better in terms of houses, a couple further situations arose. Participant 11 (female, 4) drew the largest garage she could for her design as well as packing the bottom of the paper with beds for the numerous people who would live there. Participant 23 (male, age 6) designed a self-described “rich house” on which he drew a grid-like pattern of circles. When asked about what the pattern was, he explained that he had drawn the money on the inside so that nobody could take it. Participant 9’s response (female, age 8) that she liked her design better than her drawing because it was bigger and Participant 18’s dreams of grandeur (male, age 8) in his design (both discussed in Question 2, Finding 2) suggesting that big is a desirable quality also reflect economic messages in depictions of houses.

Castles seemed to be one expression of economics in terms of houses due to the presumed wealth and political power of the noble inhabitants. More castles appeared in designs than drawings with 4 designs

\textsuperscript{84} n = 100 for exemplar houses, n = 38 for drawings, and n = 30 for designs

118
and only 1 drawing (3%), although the association was not significant.\textsuperscript{85} The manor pattern seen primarily in only children’s work additionally reflects an interest in money and power due to its reflection of plantation houses. However, the connotation of these patterns was not always pleasant: Participant 7 (female, age 5) described her castle-like design as an “evil house” with a mean queen and king.

On the other hand, evidence for a strong connection is generally lacking without more consistent examples. In particular, the average elevation size did not significantly vary between illustrators and children’s depictions of houses\textsuperscript{86} or children’s drawings and designs.\textsuperscript{87} Not many children seemed to interpret the instruction to “design a house” to design a dream mansion, focusing on smaller designs like the tiny underground house by Participant 10 (male, age 5).

Finding four: Drawing as a social process. The social processes that contribute to an illustrator’s depiction of houses in picturebooks cannot be seen in hindsight and the direct and immediate influence of picturebooks upon children’s ideas of houses cannot be measured. Nevertheless, evidence of the social processes that inform art and possibly even conceptions of space were visible in the collection of the children’s drawings. Children appeared to respond both to interactions with other children both of a verbal nature and a visual nature. Additionally, conversations with adults similarly impacted the house depictions they produced.

Responding to other children. The collection of house depictions for Investigation 2 did not occur in a vacuum. Instead, other children surrounded a participant at times, sometimes drawing at the table during the same time period and sometimes waiting nearby for group members to complete the activities. As seen in their visual products, children could be influenced by looking at one another’s pictures or through conversation with each other.

Participant 26’s design (female, age 5) showed definite influence from her eight-year-old brother’s work. Her drawing was an upright iconic house that filled the page to the extent that the point ran off the top. At the same time as she was working on that piece, her brother was drawing a house with very distinctive perspective lines trailing off the page. Although there was no record of perspective being

\textsuperscript{85} p = .17
\textsuperscript{86} t(151) = 1.11, p = .27
\textsuperscript{87} t(55) = -1.02, p = .31
discussed made, Participant 26’s design combines elements of her first drawing with her brother’s form and use of perspective (see Figure 34).

![Figure 34](image)

Figure 34. Participant 26 (female, age 5) appeared to have attempted to incorporate elements of Participant 25’s drawing (male, age 8 at left) in her design (right). She used the same proportions and general form as he did but did not seem to grasp how the perspective lines were supposed to work, depicting only the lowest of the three he used.

Additional evidence of social interaction was seen in several common features of children who were working on their activities at the same time. First, Participant 1 (male, age 4) had difficulty getting started, attempting several rectilinear shapes before settling on a square on her third sheet of paper, perhaps after watching his seven-year-old sister, Participant 2, progress. Next, Participants 3 and 4 (both female, age 6) designed castles, although of somewhat different types. Participant 3’s castle had two pointed towers and colorful blotches of color. Using a more realistic grey for the entire façade, Participant 4 attempted to depict battlements on the two towers and the top wall of the body (see Figure 28 on page 109). Participant 7 (female, age 5) designed a castle as well and may have seen Participant 4’s castle as she was leaving. Lastly, Participant 10 (male, age 5) commented that he did not know how to draw a house as he approach the table with his eight-year-old sister, Participant 9. However, after starting over, he drew a very basic iconic house similar to his sister’s drawing.
However, not all children exhibited indications of being influenced by their peers or, conversely, influencing them. Participant 38’s drawing of a house (female, age 7) was stylistically very unique (see Figure 35). It incorporated a rudimentary use of traditional methods of indicating perspective. Furthermore, the careful choices of different color for different lines and very minimal presentation were particularly unique compared to any other pictures collected. However, her five-year-old sister (Participant 39) depicted very simple iconic houses for both activities. Having approached as part of a large family group, she also appeared to be the niece of Participants 34, 35, 36, and 37, her mother possibly their oldest sibling. None of their drawings or designs showed any correspondence either.

![Stylized drawing by Participant 38 (female, age 7) that shared no characteristics with other children’s work.](image)

**Responding to adults.** The children’s pictures additionally showed evidence of responding to adults through verbal interactions. My initial instructions for the second activity—to design a house that could be as crazy and creative as they could imagine it seemed to impact the children more than I had anticipated. I had had a good conversation with Participant 24 (male, age 6) about his drawing wherein he explained what the different shapes were. However, he did not want to talk about his design. Given that it lacked the discernible shapes of his drawing, instead featuring quickly drawn lines going back and forth in
several different colors, it seemed likely that he picked up on the “wild and crazy” part of the directions and forgot about the “house” part (see Figure 36).

Figure 36. Drawing and Design by Participant 24 (male, age 6). In the drawing (left), the rectangular shape was the refrigerator, the lower circle was the counter, and the space inside the outer boundary was “all the space in the house.” He did not want to talk about the design.

Adult comments could take the different perspectives of praise, criticism, or direction. Attempting to make the children feel comfortable, my interactions beyond the instructions were generally complementary when not inquisitive. When a particular feature was mentioned, often as praise, it was often repeated in other children’s pictures. Participant 17 (female, age 8) added a small body of water to the lawn in her drawing after Participant 14 (male, age 8) told me about the pool on his design. After I noted the patterns on Participant 17’s drawing, Participant 18 (male, age 8) added pink and red zigzag patterns to his drawing. Participant 20 (female, age 8) added curtains to her design after I commented on the ones she had included in her drawing.

These interactions could have negative impacts as well. A four-year-old boy, Participant 28 was being coached by his father and older sister to draw a square. However, when his drawing ended up looking much more circular he seemed disappointed in the result and did not want to draw any more.

**Finding five: Depicting art in illustration.** References to representations of houses as art also appear in picturebooks. Although most of the picturebook sample depicted houses where the characters of
the book would presumably live, 15 (14%) showed houses as objects not meant for habitation within the fictional world of the story. These houses were sometimes depicted more than once, accounting for 34 depictions (2%) of the total depictions observed. These depictions ranged from representations of quilts, billboards, murals, puzzles, posters, and paintings to sculpture, doll houses, product packaging, pillows, and cakes (see Appendix C). Five books showed children’s drawings of houses. *Squares* (Loughrey, 2010) even included a page with instructions for children to draw the depicted house, potentially with an adult’s help.

Most books additionally showed inhabitable houses but four did not. Sometimes, the houses depicted in art were even the same houses as those that were shown as inhabitable spaces. *Nobody’s Diggier than a Dog* (Bartoletti, 2003/2005) presented the most interesting case of this. A blue house sat in the background of images of several dogs toward the beginning of the book. At the end, the same house appeared as part of a mural on the walls of a boy’s room with several toy dogs on the floor in front. *Arthur Turns Green* (Brown, 2011) also included a perplexing drawing. The “real” house where Arthur and D.W. live was depicted midway through the book as a yellow house following the neighborhood pattern with compound form and Folk Victorian styling (see Figure 37). Later in the book, a drawing with Arthur’s sister’s initials on it hung in her schoolroom. This drawing portrayed the house using the same color but follows the square pattern of a plain block-shaped façade. Without further details such as the shutters, it was difficult to determine if this drawing was intended to be a representation of their residence or not.
The dollhouse and beyond. Although this study did not include houses for non-anthropomorphized animals such as dog houses and henhouses, several examples of three dimensional representations of houses were still found. Two books (2%) depicted dollhouses, one book (1%) displayed a clay model of a house, one book (1%) featured house-like packaging (see Figure 38), and one book (1%) even included illustrations of cakes decorated to look like houses. Despite not technically a part of this study, the hamster in Ready for Pumpkins (Duke, 2012) remarkably had a box in his cage decorated to look like a house and labeled “Herky’s House” similar to the lion habitat in The Happy Lion Roars (Fatio, 1957/2006) (see Finding 3, Identity).
Summary. Children’s pictures of houses reflect both differences and similarities to the illustrations found in picturebooks. They follow some of the same patterns of depiction to a greater extent than was seen in picturebooks and avoid others all together. Their drawings and designs also demonstrated different characteristics in the depiction of houses that reflected their abilities, conceptions of space, and enculturation in what a house looks like and how it is drawn. The social interactions around the activities suggested some connections between houses and wealth. Additionally, the images were socially constructed in response to these types of interactions. The picturebooks themselves also provided metafictional clues as to how houses should be depicted by illustrating their depiction in art and other inhabitable objects within the story.

Question Three: Innovation in House Depiction

In this study, Questions 1 and 2 indentified some of the traditions in house depiction. However, here the focus shifts to innovation in order to answer the question, “in what ways do illustrators and children depart from prevalent patterns of house depiction?” Question 1, Finding 1 found prevalent patterns of house depiction. The most common of these—iconic and simple patterns, and to a lesser extent square and neighborhood patterns—established conventional standards against which innovation can be assessed.
To innovate is to “make changes in something established, especially by introducing new methods, ideas, or products” (“Innovate,” 2014). Picturebook illustrators and children demonstrated several methods and ideas that departed from conventional house depictions. These included alternative building forms and types of decorative elements. On the other hand, the act or practice of making art also impacted how innovation occurred. These iterative processes demonstrated effects of production on the image created.

**Finding one: Visual techniques of innovation.** Picturebook illustrators and children demonstrated several methods and ideas that departed from conventional house depictions. The most obvious was the use of an alternative building type or object that had been repurposed as a house. Next, children and illustrators included atypical decorative elements on their houses including ornamental details and surface patterning. Iterative processes also seem to play a role in innovation in art.

**Alternative shapes.** With the iconic and simple house patterns as the most conservative types of house depiction, adoption of alternatives demonstrated innovation. Atypical forms of conventional patterns strayed the least from tradition, merely changing the proportions. Some artists also chose to substitute a different building type as a human dwelling. The most divergent option in evidence was to appropriate traditionally uninhabitable objects as dwellings. As depictions digressed further from these primitives, they would theoretically become more inventive. However, multiple uses of the same innovation appeared to have established new patterns that are no longer as unique.

**Variations in traditional forms.** At the lowest end of the innovation spectrum, atypical forms were limited to small changes from the established iconic and simple patterns. Some of these alterations have such minor variations that they could still be classified with their antecedent. For example, the poor man’s cottage in *The Matzo Ball Boy* (Shulman, 2005) increased the verticality of the roof but still seemed to fit within the simple pattern (see Figure 39). On the other hand, the exaggeration of the roof in *Mrs. Claus Explains It All* (Claus, 2008) prevents it from being categorized at all, especially when coupled with emphasis on the gable end, the long, thin front porch, and scattered dormers of assorted sizes.
Figure 39. Degrees of exaggeration contributing to variation in innovation as seen (left to right) in *The Matzo Ball Boy* (Shulman, 2005) and *Mrs. Claus Explains It All* (Claus, 2008).

Such variations also led to the formation of new patterns. The heightened roof form of *The Matzo Ball Boy* (Shulman, 2005) and several similar depictions in other books did not differ enough from the simple pattern to warrant a new category but more extreme derivations did. With a dramatic increase in elevation and change in proportion from the iconic pattern, the tall pattern described a type of house that diverged from historic house types more than its antecedent. The square appeared to work similarly, if less dramatically.

Correspondingly, children’s drawings and designs showed evidence of innovation through proportion. Participant 2’s design (female, age 7) was very similar to her drawing but radically changes the height to create a more innovative effect. Two other children, Participants 11 (female, age 4) and 37 (male, age 5), also had proportional differences between their drawings and designs but were not as clear. Participant 11 added garages as wings to an upright iconic central portion but otherwise her design would have been shorter and wider. Despite relatively good ability at age 5, Participant 37’s narrower design may not have been an entirely intentional change from his square-shaped iconic drawing.
One child also chose a different roof form that stood out for her design. Participant 17 (female, age 8) created a square-shaped house with a roof that may have been either a flat roof or the side of a gable or shed roof (see the center image of Figure 46 on page 136). Aside from children who created alternative forms than simple rectilinear masses, almost all drawings and designs depicted peaked roofs indicating either a gable-front roof, a pyramidal roof, or the narrow, triangular end of a hipped roof.

**Different buildings.** Another technique used for innovation was that of drawing a different building type. Participant 31 (female, age 5) commented, “I’m gonna [sic] draw a building” as she was starting her design. The flat-roofed one unit wide, three story tall structure that she produced could have been a small-scale interpretation of an apartment building, especially since it was drawn without a door. Similarly, Participant 3 (female, age 6) asked if another type of building would be alright before designing a “big fancy house” that looked very castle-like. Castles in particular were one of the more popular types of building presented as houses in both picturebooks (as discussed in Question 1, Finding 1) and children’s designs. The case of house depictions that follow the urban pattern in picturebooks was comparable, especially when removed from an urban context as in *Hello Tilly* (Dunbar, 2008, see Figure 13 on page 75) and *Bobby Bramble Loses his Brain* (Keane, 2009).
Particular architectural styles. Although not necessarily seen as inventive within the discipline of architecture, using particular historical or cultural styles as innovation was common to picturebook illustration. Mrs. Crump’s Cat (Smith, 2006) had particularly good examples of this with at least three identifiable styles in the row of houses depicted Figure 41). Nine other books presented architectural styles in a similar array of variety, but few provided as clear details or stayed as true to the original styles as did Mrs. Crump’s Cat.

Figure 41. Applications of particular architectural styles to house depictions in Mrs. Crump’s Cat (Smith, 2006). The house centered on the left page seems to have drawn inspiration from centered gable gothic revival cottages whereas the two white buildings (at center and to the left) use characteristics of the International style. Mrs. Crump’s house (right center) appears to be a Queen Anne Victorian house.

Many depictions that follow the haunted house pattern have also drawn on particular architectural styles. The detailed nature of these illustrations focus on many of the identifying features of Victorian Second Empire architecture including cresting, slate shingles, wooden siding, and ornamental window surrounds. The two books that blended elements of haunted houses with attributes of castles—Maddie’s Monster Dad (Gibala-Bloxholm, 2011, see Figure 16 on page 78) and A Dark, Dark Tale (Brown, 1981/1992, see Figure 7 on page 69)—seem to refer to the Romanesque architecture of the European Dark Ages with massive stone walls and small openings.
Aside from the aforementioned castles, this technique was not commonly reproduced within children’s designs. Several drawings evidenced some allusions to particular styles but were rather vague. Participant 32’s design (female, age 7) was reminiscent of the gabled contemporary style from the 50s, 60s, and 70s. Presenting a more distant connection, Participant 38’s design (female, age 7) was suggestive of a towered Italianate house or the Italian farmhouses that inspired Italianate residences in the United States.

Moreover, there were a couple cases where exceptionally innovative depictions of houses blended elements of architectural styles beyond immediate recognition. The house depictions in *A Cup for Everyone* (Yonezu, 2008) seemed to mesh elements of vernacular architecture with postmodernist geometric works (such as Aldo Rossi’s San Cataldo Cemetery) and possibly even the Pisa Baptistery of Saint John (see Figure 42). *The Last Tiger* (Elliott, 2012) created an entirely different effect by combining the glass curtain walls of skyscrapers with the forms of water towers, shed roofs, ribbon windows and iconic houses (see Figure 43).

![Figure 42. Houses on the front endpapers of *A Cup for Everyone* (Yonezu, 2008) with muted architectural references to the geometric forms of postmodern and classic architecture. The red building with green dome appeared similar in form to the Baptistery in Pisa with modifications such as windows instead of arches on the ground floor that made it seem more private than public space. The teacup toward the right was the shop featured in the story that sold cups, as indicated in the text and by the “open” sign on the door, but could provide another example of turning an uninhabitable object into a building.](image-url)
Figure 43. House-like buildings in *The Last Tiger* (Elliott, 2012) that combined elements of glass curtain wall, skyscrapers, water towers, shed roofs, and iconic houses. Although these buildings might not initially be recognizable as houses, the iconic house forms stacked on the building above the boy and the single row of ribbon windows in the water tower-shaped building just to the left of the gutter suggest the sense of subdivision and scale of single family detached housing.

Uninhabitable objects. Innovating to an extreme extent, house depictions also appropriated typically uninhabitable objects to portray as houses (see Figure 44). Whereas house boats did not appear within the random sample, *Charlotte Jane Battles Bedtime* (Wolfe, 2011) depicted the protagonist’s house as a pirate ship-like shape, complete with decks and portholes. *Rolie Polie Olie* (Joyce, 1999) featured a house formed like a teapot, complete with a sugar bowl garage.
Houses in tree trunks were the most prevalent use of objects as shells for houses. This was so common that a pattern of house depiction had to be officially recognized, although it was the least common of the patterns (see Question 1, Finding 1). The tree house pattern also appeared within children’s drawings, although houses in other uninhabitable objects did not (see Figure 45). Participant 30 (male, age 6) claimed not to have referenced a Christmas tree for his design when his younger brother suggested it, saying instead that it was a house for aliens, but the resemblance was difficult to miss. Participant 19 (male, age 7) also drew mushroom houses in both his drawing and design. Furthermore, this particular variation of the tree house pattern was seen in The Story of the Leprechaun (Tegen, 2011, see Figure 17 on page 79).
Figure 45. Children's work that fit the tree pattern. From left to right, Participant 19’s drawing of mushroom houses (male, age 7) where “lots of things live” and then design of a cave-like house and another mushroom house where “gumdrop people” live. Next, Participant 30’s design of a house that seems to be inside a Christmas tree (male, age 6).

Other shapes. The children also invented some atypically shaped houses as well. Although several children drew roundish shapes (see the left image in Figure 36 on page 122), only one of them seemed to definitively intend a round house. Participant 20’s design (female, age 8) featured a round shaped house that, although impractical, was among the most innovative (see the right image in Figure 46 on page 136). The vaguely onion like house by Participant 19 (male, age 7) was also quite unique (see the center image of Figure 45 on page 133). Moving beyond changes in proportion, Participant 12’s alternately convex and concave walls in her drawing and design, respectively (female, age 7), created untraditional shapes as well (see the right two images in Figure 47 on page 137).

Decorative elements. Although the form of house depictions generally varied little from the traditional, children and illustrators took many liberties with the decoration of these forms. The first common type of decorative element was rendering the house walls with color and pattern as surface treatments. Decorations could also be classified as ornaments—smaller decorative pieces of the building that could be added or removed without harming the general structure.

Surface treatments. Surface treatments, as applied to the flat surfaces of the house—the walls and roof, often departed from what would be customarily found in real life or even in depictions of art. Most
commonly, vibrant colors enlivened picturebooks. Nontraditional patterns additionally decorated the surfaces of house depictions. When patterns were combined with lively colors, some of the most interesting houses were produced.

In comparison to most depictions of houses, which typically rendered the houses with shades of grey, white, and tan, some of the books used untraditionally bold colors. This innovation appeared in 26 of the picturebooks (24%), 20 of the drawings (51%), and 12 of the designs (38%). In most of the picturebooks this seemed to be part of the general artistic style of the entire work but a few stood out as exceptions. The illustrators in *Pete & Pickles* (Breathed, 2008), *Don’t Squish the Sasquatch!* (Redeker, 2012), *Thanksgiving on Plymouth Plantation* (Stanley, 2004)—at least in regard to the grandmother’s cheery farmhouse, and *A Cup for Everyone* (Yonezu, 2008) chose to emphasize at least one house depiction with darker or more saturated colors than the background. In the children’s drawings and designs there was no basis for comparison in amount of color. However, the use of bold color was significantly more common in drawings than picturebooks.  

*Pete & Pickles* (Breathed, 2008) was the only story that actually depicted the painting of the house in the story. This transition is a potent example of the symbolic importance of surface treatments as the application of patterns of rainbows, clouds, and vines to a previously dreary grey house demonstrated the joy and whimsy that Pickles was bringing into Pete’s life. As these particular decorative elements were not found in any other books, they were remarkably unconventional.

Whereas realistic patterning as a surface treatment (including shingles, siding, timbering and so forth) was rather common in both picturebooks and children’s pictures, only a few innovated with atypical patterns and textures. These surface treatments were found in 8 of the picturebooks (7%), 10 of the drawings (26%), and 10 of the designs (31%). Children were significantly more likely to display this patterning than illustrators.  

Some popular patterns in children’s work included zigzags, irregular blotches of color, and more regular divisions of color. Zigzags were included in drawings by Participants 17, 18, and 35 (female, age 8; 

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88 $\chi^2(2, N = 181) = 11.53, p = .003$

89 $\chi^2(2, N = 181) = 14.83, p = .001$
male, age 8; and male, age 7 respectively). Irregular blotches were seen in the design of Participant 31 (female age 5) and both houses of Participant 3 (female, age 6) and more orthogonal multicolored areas in drawings by Participants 35 and 18 and designs by Participants 11 (female, age 4) and 18. One child, Participant 9 (female, age 8), even worked her name into a subtle pattern on the roof of her design (see the left image of Figure 46 on page 136). Illustrators were more likely to use a wide variety of patterns and textures resulting from both collage techniques and more traditional media.

Some books combined both colors and patterns together. The simple geometric house forms in *A Cup for Everyone* (Yonezu, 2008) were enlivened with both color and pattern (see Figure 42 on page 130). The saturated colors varied widely from primary colors to paler tints of coral and baby blue. Brought into close proximity by gay patterns of checks, stripes, and polka dots, the surface treatment of houses in *A Cup for Everyone* was delightful. Using bold colors and untraditional patterns as surface treatments for house depictions were associated more often than not. Whereas fewer artistic works used patterning than colors, they were more likely to use both if patterning was used.90

*Ornaments.* Another principal way that depictions of houses displayed innovation was through the use of various ornamental details. In comparison to surface treatments, these typically had some relief to them but could be removed from the depiction without altering the house’s overall form. The most common of these ranged from unique window and door shapes and surrounds to finials marking the peaks of roofs.

Both illustrators and children depicted ornamental window and door openings. Picturebooks were more prone to use window surrounds than children, who displayed scant evidence of depicting window and door casing: Participant 38 (female, age 7) was the only child to have shown a double line around an opening. Although most children depicted windows as orthogonal rectangular or square, or at least seemed to intend to, a couple participants presented some interesting alternatives (see Figure 46). Participant 9 (female, age 8) created heart-shaped windows and a diamond-shaped door opening on an otherwise typical iconic house. The windows were purposefully staggered and crooked in on a simple square design, according to Participant 17 (female, age 8). Participant 20 (female, age 8) complemented her round house with round windows with curtains showing inside. The arched window which was as popular in

\[ \hat{C}(1, N = 182) = 44.19, p < .001 \]
picturebook illustrations as rectilinear openings appeared only in Participant 38’s design (see Figure 29 on page 111).

Figure 46. Ornamental windows found in children's designs by Participants 9, 17, and 20 (all female, age 8).

Finials were more prevalent than expected, ornamenting roofs in a wide variety of books. Typically these were small and understated, as seen on *A Garden for Groundhog* (Ballan, 1985/2004, see the second image of Figure 8 on page 70). However, when greatly exaggerated to the point of an onion dome and depicted apart from gabled roof in *Ella the Elegant Elephant* (D’Amico, 2004), the residential character of the buildings was lost. Despite not otherwise containing very innovative house depictions, *Where’s the Knight?* (Harris, 2013) presented some unique finials at the ridge and eaves of the grandfather’s house in the shape of dragons that were paralleled as spirals in both the drawing and design by Participant 12 (female, age 7—see Figure 47). Finials and flags appeared in other books, but only at the apex of roofs and towers.
Ornamental decorations were featured in 43 of the picturebooks (40%), 4 of the drawings (10%), and 11 of the designs (34%). They were significantly less likely to be found in drawings than designs and significantly less likely to be found in designs than picturebooks.\(^{91}\) Picturebooks also displayed a wider variety of types of decoration. In addition to openings and finials, ornamental items found solely in picturebooks included trim, columns, brackets, carved shutters and doors, quoins at the corners of the house, Christmas lights, atypical chimneys or stovepipes, and even windmills. Gingerbread trim and crested were typical of the haunted house and neighborhood house types.

**Other innovations.** Several other forms of innovation appeared within the house depictions. The cases may be related to each other but two participants’ designs exhibited evidence of personification. Participant 37 (male, age 5) added eyes to his design. Participant 34 (female, age 8) created faces on what seemed to be two different sides of her house, one happy and the other sad, perhaps as a gesture to the iconic masks that are associated with drama. Similar to the teapot house in *Rolie Polie Olie* (Joyce, 1999), the eyes seemed to take the place of windows (see the right image in Figure 44 on page 132).

\(^{91}\) $\chi^2(2, N = 181) = 35.41, p < .001$
Additionally, houses seemed innovative when they facilitated an action or situation that otherwise would have been unfeasible. These were features were only prevalent among houses by boys. The roof of Participant 14’s castle-like design (male, age 8) provided a platform for jumping off the house and into the pool, a process depicted with little stick people in multiple positions of the activity. Participant 10 (male, age 5) designed a tiny underground house, depicted as a small box with what seems to be a door under a heavy line. Participant 36 (male, age 4) drew a “tiger elevator” and was working on a “really big” house with “camouflage” for his design when his family wanted to move on.

**Finding two: Production techniques and innovation.** The data showed evidence of links between innovation and iterative processes. This appeared in the static images of multiple house depictions in picturebooks as well as in the real-time observation of children’s drawings and designs. Children alternatively abandoned incomplete pictures in favor of putting effort into the final piece or produced multiple pictures that appeared to be at the same level of completeness.

Innovation through iterative processes could be seen through illustrations that included a variety of houses. Unless the illustrator was purposefully attempting to illustrate conformity, as in *Louise the Big*
Cheese: Divine Diva (Primavera, 2009) and My Parents Are Divorced, My Elbows Have Nicknames, and Other Facts about Me (Cochran, 2009), large groups of houses tended to include the most variety. Late for School (Calmenson, 2008) and A Cup for Everyone (Yonezu, 2008) provided good examples of picturebooks where the illustrator has innovated in the depiction of houses through repetition (see Figure 25 on page 98 and Figure 42 on page 130). With the opportunity for side-by-side comparison, attention seemed drawn to the details of these houses.

Several children restarted their drawings, saying that they “messed up.” Participant 1 (male, age 4) restarted his drawing twice, experimenting with different proportions of the house’s outline (see Figure 49). This ended up taking so much time that he was unable to get to the design activity before his seven-year-old sister, Participant 2 (see Figure 40 on page 128), finished and wanted to move on. Participant 14 (male, age 8) also did a practice picture for each activity. After creating the square body, two windows and doors for his drawing, he found that he had started too high on the paper and that a pointed roof would not fit. He started his second drawing accordingly lower on the page.

![Figure 49. Progression of drawings by Participant 1 (male, age 4) from left to right. He ended up taking the third drawing home so that he could finish coloring it in.](image)

Furthermore, seven younger children produced multiple drawings that generally appeared to have reached the same level of completeness. Participant 8’s houses (male, age 6—see Figure 50) provided a
good example of innovation through iteration. He added wings to the second house and then seemed to incorporate them into the house as towers in his design. Participants 10, 13, 16, 21, and 22 (male, age 5; male, age 4; female, age 5; male, age 4; and female, age 4) produced two substantially complete versions of their drawing and Participant 15 (male, age 5) produced two versions of both drawings.

Figure 50. Set of three houses by Participant 8 (male, age 6) depicting evolution of ideas over time. These were drawn in order from left to right.

**Fatigue.** On the other hand, observations of the children’s drawings and designs showed evidence of fatigue over the course of the two activities. Whereas use of some innovative elements was more likely in the designs than the drawings, one decreased. Decorative ornaments increased significantly from drawings to designs \(^{92}\) and patterns had only a minor increase possibly due to chance alone. \(^{93}\) The decrease in use of bold color was not significant, \(^{94}\) but 20 of the drawings (51%) employed it in comparison to 12 of the designs (38%).

Although of less objective measure, some of the traits which made the initial drawings so appealing were lacking in the designs (see Figure 51). The drawings were well composed on the sheet and were more complete with details such as the multi-colored curtains on Participant 20’s house (female, age

\[^{92}\] \(\chi^2(1, N = 71) = 6.14, p = .01\)
\[^{93}\] \(\chi^2(1, N = 71) = 0.27, p = .60\)
\[^{94}\] \(\chi^2(1, N = 71) = 1.35, p = .25\)
8) or the fully-colored background of Participant 17’s sheet of paper (female, age 8). In Participant 29’s case (male, age 6), the initial drawing was a small, quirky house with a side gable or shed roof in comparison to a larger, more conventional design. In many cases, the lack of “houseness” of the designs made them difficult to mentally connect with the idea of house, especially when they resembled other buildings such as a castle or apartments or other objects such as mushrooms or a circle more.

Figure 51. From left to right, drawings by Participants 20 and 17 (both female, age 8) with drawing and design by Participant 29 (female, age 6) illustrating some of the appealing aspects of the children’s first impulses.

**Summary.** With the assumption that traditional depictions were rooted in the most prevalent iconic and simple patterns, and to a lesser extent square and neighborhood patterns, as identified in Question 1, Finding 1, this area of investigation focused the ways in which children and illustrators crossed the boundaries of these patterns. Their images of houses demonstrated innovation through the use of alternative building types, decorative elements, and iterative processes. Social interactions also impacted the type of innovations that were included and suggested how the enculturation process from these images works.
Chapter 5: Discussion, Conclusions, and Implications

Previous researchers have explored how pictures in picturebooks work, focusing on taxonomies of visual effects and interactions between the words and pictures. This study sought to expand on this research by taking a material culture perspective and evaluating the specific image of the house in picturebooks as a cultural product. The research suggests how images reflect the culture that created them and how they influence that same culture as they are consumed.

This chapter will present the conclusions of the study through several sections. First, I summarize the approach and major findings as they pertain to the three research questions that prompted this investigation. Next, I synthesize the results in the contexts of previous research and the theoretical frameworks of material culture and semiotics. After examining the limitations of the study, I address the implications of this research as they apply to the creation and consumption of picturebooks, the discipline of architecture, and American culture at large. Finally, I conclude with recommendations for further study.

Synthesis and Discussion of Findings

The pilot study. The pilot study for this project suggested that the iconic house found in children’s picturebook illustration was not the average or even the desired home of today. Extrapolating three-dimensional sizes of the houses illustrated from their two-dimensional representations, the average size of the house in illustration was calculated at about 1014 square feet, much smaller than today’s residences. Although historic American homes were commonly “crowded one-room houses” of about 200 to 500 square feet in size (Larkin, 2006, pp. 16–17) but the median size of American houses today is 2,306 square feet (United States Census Bureau, 2013d).

The results of the pilot study suggested two possible reasons for the discrepancy between image and cultural reality: that houses depictions are either historical remnants or drastic reductions of the complexity of actual houses. First, this study suggested that, based on the comparisons of historical and
contemporary houses, the historical remnant of the iconic house may have been perpetuated by illustrators who grew up exposed to art representing a historical cultural reality. Alternatively, the origin of the iconic house may be a symbolic reduction; the illustrator has deliberately removed detail in order to simplify the house to a level which suggests the idea of “house” but does not represent an actual dwelling. In response these results, the present research was initiated to investigate the patterns of house depiction in further detail and attempt to connect them to children’s conceptions of houses as reflected in their drawings.

**Question one: Patterns of house depiction in picturebooks.** The first question this study asked was, “What are the prevalent patterns of house depiction in children’s picturebook illustration and what do these patterns indicate about how picturebooks construct the idea of ‘house?’” To answer this question I examined picturebooks from a random sample that included depictions of houses. I analyzed these books for patterns and other common attributes that would suggest how they construct “houseness.” First, I identified a series of patterns that described the houses depicted, as well as several trends of other attributes of house depictions. Next, I examined roles that houses played within picturebooks as they related to their depiction. Finally, I presented evidence in terms of how these depictions relate to the American Dream.

**Finding one: Patterns of house depiction.** The iconic house pattern clearly dominated house depictions but other patterns were also present to varying degrees following with simple, square, neighborhood, castle, urban, tall, haunted, and tree houses. Thus with the iconic and simple patterns predominating, the most common patterns comprise the smallest and most minimal houses. Relative size and minimalism help to convey concepts. In a related argument with regard to icons in user interface design, Mathis (2010b) noted that “You are typically not trying to replicate physical objects, you are trying to communicate concepts. Details and realism can distract from these concepts” (para. 2). Thus depictions of houses in pictures try to communicate concepts expediently, favoring clear-cut images. The reduction of size and detail in the iconic and simple patterns exemplified illustrations of houses that were more representational or symbolic than realistic.

Nikolajeva and Scott (2001) noted that this simplicity helps ensure that picturebooks “do not become outdated, as books with more distinct realistic settings often do” (p. 64). Correspondingly, the icon of the house is very basic and has not changed substantially over time. However, with rampant picturebook
production and the number of recent books publicly available, this argument for simplicity over realism in illustration does not appear to be necessary.

Moreover, the theory of the primitive hut as the origin of architecture (Laugier, 1977) is reflected in the iconic pattern. Around 15 BCE, Vitruvius recorded the idea that Greek temples took their form from humankind’s earliest houses. Laugier extended this idea, positing that it is “the origin of all forms of architecture” (Kruft, 1994, p. 152). Thus the word “primitive” in architecture refers to the originating, essential form or “starting point” from which others can be derived. In particular, this form resembles the iconic house (see Figure 52). Although archaeological findings of other structures have refuted the original premise, this icon still remains one of the most prevalent mainstays of architectural theory (cf. Cline, 1997) suggesting a shape so universal and powerful that it has impacted all buildings since. Despite the distance between the discipline of architecture and that of picturebook illustrators, it is possible that the image of the primitive hut has influenced the iconic house pattern. On the other hand, it could coincidentally depict a construction form well-suited to timber used as the principal house form of early settlers to the United States (McAlester & McAlester, 1984, p. 74), as well as some rectangular plan, wood frame American Indian houses (pp. 66-67).

Figure 52. The image of the primitive hut that resembles the iconic house pattern from the frontispiece of Marc-Antoine Laugier: Essai sur l'Architecture 2nd ed. 1755 by Charles Eisen (WolfgangRieger, 2009). The woman is typically thought to be the personification of architecture bestowing the idea of the house to man.
Furthermore, the prevalence of each pattern generally corresponded with the amount of deviation from the iconic pattern: The simple pattern rotated the iconic house and shifted the emphasis to the longer façade, moving along a spectrum from idealized to realistic. The square pattern enlarged the simple pattern by adding an additional story. Then the neighborhood house adds a complex shape and roof structure to the mass of the square pattern. Finally the extra size of the castle and the detail of the haunted house depart the furthest from the iconic house. Within this scheme, the urban and tall houses act a little bit like outliers but make sense when considering that the urban setting for these houses is a moderately large departure from the more agrarian iconic house.

Simple houses were most likely to be found in books portraying a historical time period and appeared to be more realistic when they were depicted in historical fiction. This recalls the suggestions from the pilot study of the possible historical roots of the house as an icon.

The neighborhood houses most resembled actual middle-class suburban houses inhabited today. Correspondingly, these were larger and more complex in shape and depiction and commonly had minor differences in detail from one another. The choice between a neighborhood house and a smaller, less detailed house often corresponded to artistic style. Although not assessed by this study, simpler houses may potentially be intended for a younger audience as well. Whereas research has proven that children are adept at consuming details (cf. Kiefer, 1995, p. 9; Lehman & Scharer, 1995, pp. 147–148), the perception remains that children’s literature should be simple and most simple for the youngest children. Egoff (1981) observed that “the most serious error in judging writing for children is to equate simplification with simplenmindedness” (p. 2). This simplification appears in most of the depictions of houses in picturebooks.

Patterns featured in the fewest picturebooks tended to depart the most from the iconic and simple house patterns. As a pattern became more specific, the prevalence of its depiction typically dropped off. The haunted house presented the most extreme condition, referencing a highly specific architectural style and including very particular details. Many of the house depictions that did not fit within one of the nine categories were likewise specific but, unlike the haunted house, not replicated. For example the earth-wall
house in *How to Make a Cherry Pie and See the U.S.A.* (Priceman, 2008) depicted a very specific style of architecture, with the added details of atypical curved walls.

Houses that recalled styles from outside the United States were less common than those that could be identified as indigenous using McAlester and McAlester (1984). Houses such as those of the hipped-roof Neo-French variety suggested styles imported from Europe but typically fit within the nine observed categories of house depiction. However, houses that definitively depicted non-Eurocentric American architecture commonly could not be categorized (see Figure 53). These included the American Indian earth-wall house in *How to Make a Cherry Pie and See the U.S.A.* (Priceman, 2008); the waddle-and-daub houses from Turkestan in *How I Learned Geography* (Shulevitz, 2008); the stilt houses of many possible origins, although southeast Asia in particular, in *Why Christmas Trees Aren’t Perfect* (Schneider, 1988); and the pseudo-Chinese houses (see Cai, 2002, p. 108) in *Tikki Tikki Tembo* (Mosel, 1968). Apparently, the American house still has much in common with those of some of its first immigrants.

Figure 53. Non-Eurocentric houses from *Tikki Tikki Tembo* (Mosel, 1968), *Why Christmas Trees Aren’t Perfect* (Schneider, 1988) with semi-European castle in the background, and *How I Learned Geography* (Shulevitz, 2008). Although the first two house forms share some similarities with the simple and iconic patterns, the differences of the protruding windows and hipped roof with Dutch gables in *Tikki Tikki Tembo* and the stilts in *Why Christmas Trees Aren’t Perfect* are very distinct.

The exception to this was the pattern of depicting castles. Although castles were typically large, complicated, and specific, they were still found in 13% of the sample. Even though the sample did not include picturebooks categorized under folklore (Dewey Decimal number 398), the books that included
castles were often told in the style of European traditional literature. The castles often served as scenery objects in the background. Other books drew upon this image in less conventional ways, likely because the illustrator assumed that children would be familiar with it and would enjoy seeing variations of it. This could be seen in *Don’t Squish the Sasquatch* (Redecker, 2012) wherein a castle is featured as one of the buildings passed on the way to the city and in *Mrs. Claus Explains it All* (Claus, 2008) wherein one of the elf tribes lives in houses that are a derivative of castles (see Figure 54).

![Figure 54](image)

Figure 54. Castle at the far right of the spread in *Don’t Squish the Sasquatch* (Redecker, 2012) and elf-dwellings as castle derivatives in *Mrs. Claus Explains it All* (Claus, 2008).

These depictions of houses could also be said to represent common perceptions of children’s literature. Griswold (2006) proposed five themes of children’s literature: snugness, scariness, smallness, lightness, and aliveness. Snugness and smallness can be found in the iconic and simple patterns and are sometimes even emphasized, as exemplified in the discrepancy between the interior and exterior images of houses (see Figure 33 on page 115). The smallness of the houses depicted could also evoke lightness, at least to the adult sensibility, as the house is not a burden in terms of space, or the financial liability in house ownership highlighted by bursting of the housing bubble and difficulties with mortgages in 2008. Moreover, aliveness can be seen in the colors, patterns, and distorted shapes common in less realistic house depiction. On the other hand, scariness seems of a different ilk than the other four themes but can be found in the pattern of haunted houses within picturebooks. The presence of castles suggests both the scary
intimidation of size and the power associated with the rulers who would live there, as well as emphasizing the smallness of a young reader. In addition to the rationales put forth by the pilot study—that houses are either historical remnants or drastic reductions of actual houses—these perspectives suggest that attitudes toward children’s literature may also be a part of how picturebooks construct the image of the house.

In addition to reflecting ideas of childhood and children’s literature, these conventions also include architectural attributes that typify the essence of a home. Jacobson, Silverstein, and Winslow (2002) admitted that “the essence of home is a notion that, while hard to describe abstractly, seems to be understood intuitively” (p. 7). Despite this difficulty, they identified ten “patterns that produce the feelings we associate with home” through comparing their three different perspectives and then member checking their synthesized findings with other architects and designers (p. 5). Some of these concepts apply primarily to interior spaces that were not considered in this study but evidence of sheltering roofs, parts in proportion, capturing light, refuge and outlook, and creating rooms outside and in can be seen in typical depictions of houses.

The prevalence of the gabled roof can be tied to the idea of shelter. A pitched roof uses gravity for elements such as rain, snow, and debris to be shed on to the ground, providing a better shelter. They also signify the idea of shelter easily. Gabled roofs are not only larger and thus more apparent than flat roofs but the triangular gable-front shape is more distinctive than the rectangular ridge side of the roof. This gable form can also be seen as a decoration on other roof types on non-iconic houses in illustration as well as in real life. Jacobson, Silverstein, and Winslow (2002) observed that the roof is the traditional symbol for home as seen in sign language, Chinese ideograms, and children’s drawings (p. 77).

The commonality of proportions of the most typical patterns speaks to the attribute of parts in proportion (Jacobson et al., 2002). Although the study did not include a careful measuring of proportions, the prevalence of simple geometric shapes and the human scale of most of the buildings is evident. Even larger patterns of houses, such as the haunted and castle patterns, typically broke up the building into human-sized proportions.

The principal of capturing light (Jacobson et al., 2002) is seen in the array of windows across most of the depicted house façades. With numerous windows, typically with even spacing, the theoretical inside
of these house depictions would have generous natural light. However, the divided-light windows promote the feeling of refuge while still providing a point of outlook. The small windows often seen in the gable elevate a point of outlook but also shelter it from exposure with the eaves of the roof. Additionally, the front porches seen in illustrations protect the entry from the elements and present a transitional space in between indoors and outdoors similar to creating rooms outside and in.

Finding two: Other characteristics of house depiction. Beyond the nine patterns generally based upon form, several other characteristics were associated with house depictions in picturebooks. Several of these attributes are closely related to aspects of the picturebook media: inequality between representation in text and image, frequent locations of depictions within a book, and repetition of houses depicted. On the other hand, several characteristics indicate conflict between tradition and innovation: the variety of houses depicted and the criterial aspects of house depictions. All of these characteristics similarly indicate attitudes toward the house and the construction of its depiction.

One of the primary aspects of picturebooks is that they most often contain words to accompany the pictures. However, this study found that houses were not typically referred to in the text or well-described by the text if they were referred to. This confirms some existing ideas of illustrations in picturebooks. Nikolajeva and Scott (2001) purported that the text is better at diegesis, telling about or describing space, whereas the illustrations can actually show it (mimesis) with less effort (p. 61). Thus it makes sense that picturebooks would show houses more often than telling about them.

Additionally, the presence of the house in illustration helps not only describe setting but provides information about the characters who live in the houses. Drawings of houses have been used as a diagnostic tool to assess the creator wherein the house is viewed as a self portrait (Buck, 1970). Building on the idea that “picturebooks allow little room for characterization” (Nikolajeva & Scott, 2001, p. 82), it makes sense that visual elements such as a house can do double duty both describing scenery and providing characterization for very minimal texts. McCloud (1999) also found that the background of comics was often far more realistic than the characters, allowing the viewer to “mask themselves in and character and safely enter a sensually stimulating world” (p. 43). If the described setting in picturebook illustrations was to work in this way as well, aspects of characterization could be shifted from the character to their built
environment. Corrigan and Surber (2010) noted that “pictures play an important role in filling in cohesion gaps in the text” (p. 52) and that these gaps cannot always be filled by text that simply describes a missing picture. In Barthes’s terms, the non-coded iconic message, which is easier to translate into a linguistic message, cannot substitute for the coded iconic message. With the assumption that objects tell things about their owners (Berger, 2009, p. 17), the house becomes a symbol of the protagonist.

The importance of house depictions in creating setting as well as establishing identity can be seen in the prevalence of houses depicted at the beginning of books. This is the optimal location for houses serving this role. In comparison, the later pages of the book might be better suited for describing the actions of the characters, as Nikolajeva and Scott (2001) observed that “picturebooks tend to be plot-oriented rather than character-oriented.”

The findings on the total number of house depictions and the number of distinct houses depicted suggests several observations about how houses work within picturebooks. First, there is great variety in the number of houses depicted in picturebooks from books showing a small number of houses to those that show many different houses. Books were more likely to repeat the same house multiple times than to show all new houses, perhaps providing a sense of consistency and comfort for children. However, most books set a low limit to the number of houses and the number of times depicted. As books diverged from each other in these counts, they typically produced different effects through the house depictions as seen in the comparison of *Moonlight: The Halloween Cat* (Rylant, 2003) to *The Story of the Leprechaun* (Tegen, 2011) in Chapter 4.

Whereas several books showed swaths of similar houses, most showed houses with more differences than similarities. However, some characteristics were typically similar and others were commonly different. Books with groups of houses were more likely to present an array of houses that were of similar shape, size, and style and vary the number and location of windows and other decorative features. This supports the rationale of using form as the primary determining factor for the patterns of house depiction identified.

The choice of criterial aspects indicates an area of interest in the object being represented (Kress & van Leeuwen, 2006, p. 7). This interest “is a complex one, arising out of the cultural, social and
psychological history of the sign-maker, and focused by the specific context in which the sign-maker produces the sign.” The selection of criterial aspects of the house—a peaked roof shape, compact form, scale appropriate for a nuclear family, rectilinear shape, array of one door and evenly spaced punched windows across the façade, windows with grids or muntins, curtains within the windows, a chimney or stove pipe, shutters, siding or brick, front porch or stoop, front walk to the door, and even doormats—indicates area of cultural interest in the house.

These particular interests suggest qualities of the house that are highly desirable. The roof’s importance can be attributed to the provision of shelter that then becomes entwined in connotations of comfort with other criterial aspects. The compact form and scale for one family also imply a sense of snugness and “familyness” in the vein of the one-room house rather than the individuality of private rooms for sleeping and division among rooms for different activities. The rectilinear shape is perhaps the simplest geometric that provides the practicality of both floor and head space, accommodating inhabitation. The evenly spaced array of windows and doors provides a sense of consistency as well as presenting symmetry. The punched windows, as opposed to horizontal ribbon windows (see the center image of Figure 2 on page 2), are said to represent the human body as well recall historical architecture (Reichlin, 1984). Curtains and, to an extent, muntins create a sense of privacy and containment, softening the orthogonal lines of a house with fabric. Historically, curtains would also have provided warmth and the muntins, which once held together the small panes of glass limited by the technology of the time, now seem to indicate a sense of habitation, breaking the façade into small modules appropriate to residential rather than commercial architecture. The chimney and stovepipe provide exterior evidence of the fireplace and hearth, traditionally the center for cooking and heating and also a symbol of the family (see O’Connor, 2007). Shutters and siding or brick are surface treatments that help distinguish the house from other building types that are less likely to use these materials. A front porch or stoop is not only a traditional room of the house but marks the transition from public to private space as do the front walk and the doormat.

A building could be indicated as a house without depending on criterial aspects by relying on association by context. In this way, details typically associated with “houseness” like chimneys and gabled roofs can be reduced but can still communicate to the viewer that they are dwellings. This method of
identification of houses relied heavily on context clues and background knowledge of house forms. Mathis (2010b) presented the example of several images of houses with aspects removed until the figure was indistinguishable as a house (see Figure 55). The most important criterial aspects according to Mathis would be the last details he removed from the image of the house.

![Figure 55. Illustration of the effects of removing the features of a house (Mathis, 2010a). Mathis (2010b) claimed that the far right image was unidentifiable as a house. Although this may be true in user interface design, picturebooks often provided context clues that would allow continued identification.](image)

Although the assumption that all artistic impulses are choices is often extended to the perception that they are conscious choices, understanding of these artistic processes can be reconsidered. The depictions of houses observed in illustration were clearly intentional but seem to be derived heuristically. Speaking about Pixar’s design processes, Karen Paik pointed out that even as design seems like an open-ended process, there is a budget to time, energy, and sometimes money that limits the amount of time that can be spent on details (personal communication, February 18, 2014). Although the house in *The Incredibles* (Bird, 2004) was important enough to spend significant time on at the expense of the background people, apparently for purposes of characterization, background houses typically are not. Instead, these seemingly benign details are simply created and then checked to see if they match the holistic feel of the movie. Kress and van Leeuwen (2006) described this process, observing that “criterial aspects are represented in what seems to the sign-maker, at the moment of sign-making, the most apt and plausible fashion “ (p. 7).

Correspondingly, Paik pointed out that visual media such as movies are better at reflecting ideology than projecting (personal communication, February 18, 2014). However, people still think that media greatly influence cultural ideas. On one hand this could indicate that it would be easier to change the culture that creates the images before the images change. This could be a factor in the traditional aspects to
house depiction. On the other hand, there is now a reasonable amount of attention to who is portrayed how in picturebooks at least in terms of gender and race, if not in Pixar movies. This could come into play in the “checking” process: Does the depiction not only fit with the stylistic world created but also the world that the creators not only want to see in the representative media but in the real world. This leaves in question whose responsibility it is to check visual media and if housing is worth adding to the list of images to be checked, especially given the continued lack of appropriate depictions of race and gender (see Crabb & Marciano, 2011; Myers, 2014; Smith-D’Arezzo & Musgrove, 2011; and others).

Finding three: Roles played by houses. The roles that houses played within a book affected how and when they were depicted. In order of frequency, houses were most likely to be included as scenery items and indicators of setting. They were also strongly linked to the identity of characters and could take a role by being important to the plot. The style of the depiction of houses helped create a particular aesthetic experience for books in terms of the mood. Houses additionally provided points of origin and destination. They could be used to indicate distance along a journey, provide a shell for stories that happened inside, create a sense of refuge, and be experienced by a visitor. In some books, the houses lent themselves to interpretation symbolically beyond themes of identity and refuge. Books sometimes used the house as a prop, acting upon it as part of the story. Collections of houses could also be used to express either variety or conformity, although this was the least common device employed. These categories were instrumental in identifying some unexpected but interesting correlations between roles and other attributes investigated.

One small group of roles stood out as interconnected. The scenery role was positively associated with the drive-by role and the drive-by role positively associated with the variety role (see Figure 56). All three of these roles were generally negatively associated with other roles, creating a small subset of ways in which houses work. Houses that are displayed along a route to indicate distance for a journey are often providing an aesthetic effect. These houses seem to depict variety in order to represent a greater distance as more different things are passed on the journey. Due to this impersonal nature, books that use houses as these roles were less likely to use houses as an important part of the plot, to indicate identity, or to portray the house as a comforting refuge. Although conformity was not significantly associated with any roles, this
still suggests that the safe image of a house tied to the protagonist and important to the plot may be a more conservative image.

Figure 56. Diagram of the relationships between roles. The lines with arrows indicate a significant positive relationship and the dotted lines indicate significant negative relationships. Some roles were not significantly related to others. The spatial relationships are not to scale with the statistical relationships.

Plot associations of objects in picturebook illustrations may be one of the most potent criteria for assessment. Plot was significantly tied to eleven of the other roles, both positively and negatively. This was the maximum of any role, comprising 79% of the possible connections. Similarly, identity was connected to eight other roles, suggesting another important aspect of picturebook illustrations. Strong identity connections also provide rationale for material culture studies of objects in picturebooks such as Crabb and Bielawski (1994), Hillard (2002), Crabb and Marciano (2011), and Varga and Zuk (2013).

**Finding four: Ties to the American Dream.** The depictions of houses in picturebooks showed connections to the American Dream. This occurred both through economic inferences that could be made about the house owners and by depicting agrarian ideals of rural life and independence. Picturebook illustrations also suggested demographic information about the owners of houses. The findings in both of these areas are open to question in terms of their appropriateness for children.
Since the sample did not discriminate based on location of initial publication, the “American-ness” of the sample is a valid issue. Although all of the books were in a domestic, public location, several of them were originally published abroad. Additionally, a moderate portion of the illustrators were from other countries. These illustrators hailed from parts of Europe such as England, Germany, France, Italy, and Finland in addition to several who live in Japan. Some of the illustrators, like Schiko Yoshikawa, were born abroad and immigrated to the United States or, like Kazuno Kohara, the United Kingdom. These examples surely merge multicultural perspectives. All the same, could “American” be considered a mixture of ideas that happens to converge in a particular place at a particular time; in other words, that there are many ways of being American and a number of them are rooted in immigrant experiences.

International illustrators may reflect American ideas just as accurately as indigenous illustrators. Niki Daly shared that when doing research for a picturebook to be published in the United States, A Family for Old Mill Farm (Crum, 2007), he turned to the internet (personal communication, May 30, 2013). By basing his illustrations on images of American houses, he may have actually portrayed a wider range of quintessential American architecture than a native depending on personal knowledge alone.

One could also question how “American” American illustrators are. Although libraries make an effort to purchase books by and about people in minority groups, there are limited numbers of these in supply. The Cooperative Children’s Book Center publishes statistics each year of children’s books by and about people of color (n.d.-a). Despite small gains, the numbers of books never come close to equaling the proportions of the population they might represent.

In general, children’s literature is considered to represent “morally ascendant middle-class suburban lifestyles” (Saltmarsh, 2009, p. 142) as well as Whites and women (see Clark, 2005; Lukenbill, 1976). However, the illustrators of picturebooks that depicted houses were evenly split with 54 females and 55 males. Similarly, the picturebooks that depicted houses showed them as intended for and belonging to able-bodied White middle class characters. Although rural settings were shown more often than suburban, one goal of suburbs is to actually evoke the rural within a limited space (Cloke, Marsden, & Mooney, 2006, p. 337).
These findings suggest that the house is not only a universal sign for home but is also a symbol of race, class, and agrarian biases. These items seem unfortunately linked to a norm of living that has national acceptance such as the American Dream. In comparison, Brown and Webb (2012) found that policies encouraging homeownership benefit Whites more so than other minority groups (p. 351). This study did not go into detail on the subject, but alternative forms of housing and people of minority groups both seem to be underrepresented in the picturebooks available to children, likely correlating with each other.

**Question two: Correlations between drawings and illustration.** The second question this study asked was “How do the prevalent patterns of house depictions visible in children’s drawings of houses correlate with depictions of houses in picturebooks?” Illustrators depict houses more realistically than children but still primarily depict houses symbolically. The presence of elements of children’s techniques suggests that the two groups of artists may affect each other. Children could pick up how to draw houses from picturebooks, illustrators could purposefully include elements of children’s depictions in their houses or both could draw from general cultural knowledge that supersedes visual media.

**Finding one: Diverging patterns.** The patterns of house depiction found in children’s drawings and designs overlapped for the most part with those found in illustrations in picturebooks. There were several patterns that did not appear in all three groups of images and the extent to which a pattern appeared typically differed. This data suggests that children and illustrators have related but slightly different ways of depicting houses.

Furthermore, the assumption that the iconic house represents the most common way that houses are depicted was substantiated. With more popularity among children’s drawings than their designs or the work of illustrators, this icon also appears to be a conservative, essential (or “primitive” in the architectural sense) sign. Although it is the most expedient at communicating the image of house, it can be departed from in order to innovate or communicate other more complicated messages.

According to Lowenfeld (1947) children pass through distinct stages of artistic development: The “scribble stage” in which children enjoy making marks kinesthetically during ages two to four, seen to represent mental activity rather than the real world (Malchiodi, 1998, p. 6); the “preschematic stage” in which children ages four to seven begin to represent the world with rudimentary symbols; the “schematic
stage” during ages seven to nine in which children have developed representational symbols; “dawning realism” in which children ages nine to eleven increase skill in depicting depth; “pseudorealism” in which detail increases during ages eleven to thirteen; and the “period of decision” in which adolescents consciously and critically choose how to depict things. The children who participated in this investigation would generally have been in the preschematic and schematic stages but evidenced drawings from the scribble stage through dawning realism. With the variety of drawings produced by each child and the entire group, the distinctions of stages did not appear to be exclusive nor accurate to age groups. Instead, children seemed to choose means of representation depending on what they had been taught—either overtly or through enculturation—and their current task.

Children initially draw conceptual images of space reflected in their experience of the house. They indicate an understanding of the house as a container or shell by drawing an encompassing outer shape (cf. Matthews, 1999, p. 78). These typically include objects within the house that they would interact with on a daily basis such as the refrigerator from which food comes, the couch on which they snuggle with parents, and the bed in which they end each day. Although it is difficult to determine, these children may be drawing in three dimensions, having not yet been taught to represent the multidimensional world in two dimensions.

As children gain in knowledge of the conventional way of depicting houses, they move toward drawing small and simple shapes that begin to approximate the iconic house. At this point they begin to demonstrate that they understand that images are not just for personal expression but are meant to communicate (cf. Coates & Coates, 2006; Kellogg, 1969). When they feel more confidence in their control of the image, they draw larger and more detailed houses. Children also begin to choose some of their own conventions that are repeated in their now personalized but formulaic depictions of houses. Kress and van Leeuwen proposed that children’s resources of sign-making “are not ‘acquired,’ but made by the individual sign-maker” (p. 9). However, this study indicates that conventions of representation occur as an interaction between choice and appropriation.

Having passed through these stages as children themselves, illustrators have also digested these influences. With training and practice, they can work within or against these constraints as they wish.
Lowenfeld (1947) would have determined that these artists depict fluently within the period of decision. As they depict a greater variety of houses, illustrators are not as beholden to idiosyncratic personal conventions but instead are bound by their purpose to communicate with viewers. This communication must be able to occur without the use of words, since the illustrator often has no control over the text. Additionally the tradition of not describing houses or setting as a whole usually precludes textual identification of houses. Illustrators also have more experience interacting with—and theoretically observing—actual objects such as houses than do children. This may explain why illustrators were more likely to depict houses following the simple pattern and the larger square and neighborhood patterns.

Finding two: Variable attributes. Beyond patterns of house depiction, houses drawn by children and illustrators also differ on several attributes. Illustrators are more likely to represent fractional depictions of houses as well as include details, both criterial aspects and otherwise, and indicate some sort of perspective. Children are more likely to focus only on the front façades and depict symmetry, although both groups often paid no heed to realistic conceptions of space. This suggests that children are taught to represent the world symbolically but adults depict it with a mixture of symbolism and realism. This can be seen in the use of symmetry: illustrators come closer to approaching actual quantities of asymmetric houses than children but still do not depict asymmetric houses in accurate proportions. In fact, illustrators seem to approximate children’s drawings by using techniques such as non-traditional indications of perspective or no perspective and simplicity in their depictions of houses.

Although Kress and van Leeuwen were referring to the difference between language and image—that “each medium has its own possibilities and limitations of meaning” (p. 19)—this also describes the differences between the images of houses produced by children and those produced by illustrators. A child’s picture is able to focus on just the one object, the house, hence the rarity of fractional depictions. In contrast, the picturebook can be seen a string of pearls in which the pictures, or pearls, are bound to the narrative “string” (Kiefer, 1995, p. 6). This results in numerous depictions of houses in a less prominent role. As background pieces, houses in picturebooks are more likely to be depicted from the side or back. With indications of perspective, the inclination toward symmetry may also decrease since the image has already been skewed.
Furthermore, “visual structures do not simply reproduce the structures of ‘reality.’ On the contrary they produce images of reality which are bound up with the social institutions within which the images are produced, circulated and read” (Kress & van Leeuwen, 2006, p. 47). Although they share many characteristics, depictions of houses in children’s drawings and picturebooks are produced in different contexts and thus reflect different, but related social institutions.

Children’s use of symmetry and focus on the front may also have to do with brain development. Aamodt and Wang (2011) reported that human brains are more efficient at recognizing symmetry than asymmetry because “most naturally occurring objects look the same when viewed from the left or right” (p. 213). Thus as a child learns to read, he or she is overcoming mirror image confusion. This could appear in the prevalence of houses that are intended to be symmetrical as seen from the front by children but decrease as their adult brains become more used to asymmetry. Moreover, balanced façades that replace a window with a door approximate absolute symmetry, enough that the house can still be read as symmetrical, even as details such as the typically off-center chimney are discarded.

The depiction of windows as eyes in two of the participants’ designs and the teapot house in Rolie Polie Olie (Joyce, 1999) personified the house, giving each its own identity in addition to marking the identity of the occupants. Seeing faces in objects, a tendency called pareidolia, is quite common and possibly tied to the “survival” of popular works of art (Melcher & Bacci, 2008). The pattern of a door framed by symmetrical windows is easy to read as a face, possibly contributing to the popularity of simple, symmetrical façades in house depiction.

Children depicted significantly fewer chimneys and front porches than illustrators did. Although “more than one-third of Americans use fireplaces, wood stoves and other fuel-fired appliances as primary heat sources in their homes” (U.S. Fire Administration, 2013), the construction of fireplaces in new houses has been declining (United States Census Bureau, 2013d). In 1990, 66% of new houses had fireplaces in comparison to 51% in 2009. McAlester and McAlester (1984) denoted that the chimney and fireplace had become a “nostalgic luxuries in most 20th-century houses” (p. 52). Especially as a single-family detached house could be considered a luxury in itself, this could account for the decrease in the frequency of chimneys between houses in picturebooks compared to children’s drawings and designs. However, a
chimney is also one of the more difficult details for children to draw since it violates the perpendicular principle (Wilson & Wilson, 1982, p. 41).

The lack of front porches could be another historical development. Despite being “an American icon,” today’s suburban homes often have some sort of porch as an entry feature without the functional uses as shelter, thermal conditioning, and gathering place (Edelman, Gaman, & Reid, 2006, p. 62). These entries indicate the traditional porch but are so small that all they do is provide a bit of shelter from the rain while opening the door and “transition between the privacy of our homes and the rest of our community” (p. 63). Without functionality, children may be less likely to depict a porch since they seem most interested in parts of the house that they use beyond the minimal criterial aspects. This condition may also be due to use of perspective. Porches in illustration seemed to be often depicted using indicators of perspective even in the house were portrayed as flat. In comparison, children have not yet developed the skills to do this.

**Finding three: Ties to the American Dream.** Differences between reflections of the American Dream in children’s depictions of houses and illustrators depictions of houses were generally inconclusive. A few children evidenced aspirations toward wealth and power via castles, manors, and mansions, as might be expected with a greater sense of ownership given that they were only tasked with one house at a time. The desire of most children to keep their drawings certainly demonstrated a sense of attachment to their products. Even so, most of their depictions indicated a lack of concern with materialistic aspects.

In particular, the lack of haunted houses in children’s drawings also seemed to indicate this lack of concern with economics. From an adult’s more sophisticated perspective, the haunted house appears to comment on materialism with the decay of the ostentatious Second Empire architectural style, suggesting that fanciness is unnecessary. Haunted houses also typically presented challenges to the protagonist rather than refuge.

Moreover, both illustrators and children generally depicted small, comfortable houses. This contrasts with the houses that are seen in other media such as advertisements and on television. For example, Home and Garden Television typically focuses on affluence by depicting large houses and concentrating on amenities with greater materialistic associations such as granite counter tops.
**Finding four: Drawing as a social process.** The social interactions that affected children’s pictures of houses attested to the potency of enculturation during the production of images in real-time. Visual interactions were difficult to confirm without eye tracking equipment but seemed to impact children in addition to the verbal interactions. Particular types of interaction—visual, verbal, adult, and peer—did not appear to produce different effects. However, instructive interactions had the potential to frustrate and discourage children. In comparison, more subtle influences instigated attempts at new ideas that seemed satisfactory even when not entirely successful. This suggests that unconscious conditioning, such as the repetition of images in picturebooks, may be more powerful than direct instruction. Although this study was unable to delve into the direct effects of depictions of houses in picturebooks upon children as evidenced through their art, the numerous overlaps between children’s drawing and illustration suggests a correlation.

**Finding five: Depicting art in illustration.** The depiction of houses as objects for art and play instead of habitation within picturebook illustration was unexpected, but common enough to present a metafictional pattern of house depiction. These metafictional images contained thematic information about how houses are seen as cultural constructions, heightening the impact. They also provide a type of bridge between the more generalized illustrations and children’s depictions of houses.

Combining the Greek root for beyond and story, metafiction includes works “in which the author self-consciously alludes to the artificiality or literariness of a work by parodying or departing from novelistic conventions…and traditional narrative techniques” (“Metafiction,” 2014). In this manner, the references to drawings and other representative art within illustration parody the conventional representations of houses. Nikolajeva and Scott (2001) commented that “metafictional elements in a text deliberately draw attention to its status as a literary construction and therefore raise questions about the relationship between fiction and reality” (p. 220). Thus the prevalence of this attention suggests that illustrators are aware of the image of houses in art as a convention and may be interested in posing subtle questions in regard to its status as fiction.

This type of representation could also be seen as a visual type of scaffolding, creating connections between the art of illustrators and that of children (see Vygotsky, 1978; Wood, Bruner, & Ross, 1976).
the five images simulating children’s drawings of houses, illustrators could be including coded
“instructions” on how to draw rather than just presenting an image of an object that would be familiar to a
child, demonstrating to the adult world an illustrator’s familiarity with the audience. The page in Squares
(Loughrey, 2010) highlighted the possibility of providing instruction in visual communication by giving the
child reader the direction to “ask an adult to help you draw this house” with a very traditional image of a
house made out of numerous squares. Thus a link is created between children’s more conventional
depictions of houses and the relatively more realistic work of illustrators.

Question three: Innovation in house depiction. The last research question in my study asked,
“In what ways do illustrators and children depart from prevalent patterns of house depiction?” Several ways
of innovating were suggested by analysis of the depictions of houses in picturebook illustration and
children’s pictures. These included different variations in shape, from slight modifications of conventional
shapes to the introduction of new shapes, and decorative elements including colors, patterns, and
ornaments. Although most of the innovation involved visual techniques, the production techniques of
children’s drawings suggest the impact of iterative processes on innovation.

Finding one: Visual techniques of innovation. This finding can be generally summed up with the
metaphor from a picturebook. The Big Orange Splot (Pinkwater, 1977) starts with a “street where all the
houses were the same.” When a seagull drops a bucket on orange paint on Mr. Plumbean’s house, he
repaints his house all different colors saying, “My house is me and I am it. My house is where I like to be
and it looks like all my dreams,” rather than return it to homogeneity. His neighbors attempt to dissuade
him but are instead moved to change their own houses as well (see Figure 57).
Aside from the clear messages on individuality and house as an expression of identity, the type of innovation in Mr. Plumbean’s house is notably different from that in his neighbor’s houses. Whereas Mr. Plumbean has made mainly superficial changes to his house, the other houses have actually been replaced with different building types as well as traditionally uninhabitable objects. Similarly, houses in picturebooks and children’s artwork innovate in the same two principal ways. However, neither strategy reinvents the house: decorative innovations simply dress it up and innovations in form either change it too subtly or replace it with an entirely different type of building.

A conundrum results when a technique for innovation is used numerous times. Eventually a departure from a pattern establishes a new pattern, as what appears to have happened with using tree trunks as houses. Houses with colors and patterns are not so unusual, especially as they typically fit stylistically with the rest of the book.

Additionally, when houses are presented in an array of variety, the whole collection may be innovative but the individual pieces less so. A metaphor might be seen in the example of a craft sale. Whereas a large display of a craft, say beaded lizards, is enticing with the massed effect of the different colors, shapes, and reflections of light, buying just one beaded lizard and isolating it is not as satisfying as the original collection. Part of this issue is that innovation is not discernible without something to contrast it
against. In the case of *The Big Orange Splot* (Pinkwater, 1977), the houses have increased the amount of variation between each but, as a whole, conform to several new rules including bold colors and drastic forms. In books, the protagonist’s house typically needs something extra to stand out from the crowd, often an extra innovation. In *The Big Orange Splot*, Mr. Plumbean’s house innovates through decoration more so than form. In *Charlotte Jane Battles Bedtime* (Wolfe, 2011), her house looks like a boat, a different form than the variety of other houses. *A Cup for Everyone* (Yonezu, 2008) similarly has the protagonist’s shop stand out from the line of relatively innovative houses by forming it as a giant teacup.

In general, children were able to innovate to a greater degree but presented less aesthetically satisfying depictions of these houses. Although Kress and van Leeuwen (2006) observed that children are “less constricted by culture and its already-existing and usually invisible metaphors” (p. 8) this only seems to hold true until children are indoctrinated into conventional means of representation. At this point a child’s lack of technical ability is compensated for by finding patterns of depiction that allow them to communicate. Anning and Ring (2004) cited Davis and Gardner (1992), noting that “it is well documented that children’s early drawings are characterized by a ‘creativity’ which somehow becomes stultified into the ‘conventionalized drawings of middle childhood’” (p. 26). However, when presented with the task of depicting something unfamiliar, some of the early “creativity” can return. This could be seen in the circle house by Participant 20 (female, age 8), the gumdrop house by Participant 19 (male, age 7), and the villa house by Participant 38 (female, age 7). Thus objects for which they have a conventional vocabulary of depiction will be portrayed conventionally but other less common objects have the potential for expressing innovative ideas since convention is less useful.

Illustrators were better able to combine satisfying aspects of house with aspects of innovation, including enough criterial aspects of a house to maintain the connection between sign and the object to which it refers. For example, the mushroom houses in *The Story of the Leprechaun* (Tegen, 2011) include doors with door knobs, windows with panes, little stove pipes, and rounded but still rather triangular roofs. In comparison, the mushroom houses in Participant 19’s drawing and design (male, age 7) have rounded tops and doors or doorways without any extra detail. This may have been due to the artistic media, as water color and pencil permit greater detail than children’s crayons but other children attempted small details at a
similarly small scale such as Participant 16’s tiny drawing with presumed door and door knob (female, age 5).

When designing space, architects typically draw in plan since this reflects the lived-in world most similar to how the human body experiences it. However, all but some of the youngest children definitely drew in elevation, as a person outside a house would see it. Enculturating children to think this way puts an odd focus on divisions between people, especially in a time when some lament the lack of community (see Hall, Porterfield, & Porterfield, 2001; Jacobs, 2005; The Sustainable Community Research Group, n.d.). As for untaught children’s representations of space, it is difficult to say exactly what is being denoted. It may be that although their drawings are unclear, their conceptions of space are actually based more in observation and experience than those of trained children.

Links between enculturation and lack of innovation have been found in other areas. Baxter (2005) studied weavings produced by children, observing that when guided by adults, creativity decreased:

In this learning scenario, the teacher (usually the child’s mother) actively helped, modeled, and verbally directed the child in the process of weaving. The resulting material record emphasized cultural conservation, with the child having little opportunity to make errors, and even less of a chance to innovate or experiment with design or technique during the learning process. Therefore, the child’s work closely resembled the work of her mother in both technique and design. (p. 52)

When drawing conventionally, children are not only similarly limited in what they can present but also in the ways in which they are able to think critically about what they present. Children who did not draw traditional houses were more likely to depict items on the inside of the space, rather than the outside. Without the limits of convention, they seemed to be able to think spatially. In cases where interior objects appeared on what seemed to be the exterior of the house, the child had to rationalize how the façade and the inside of the house interact, a much more difficult process than recreating a flat image with little relation to actual built space.

Because innovation in housing may become important in a world with ever expanding populations and limited resources (see T. L. Friedman, 2008; Martenson, 2011; Meadows, Randers, & Meadows, 2004), it may be difficult promote this innovation via techniques for depicting houses. Hayden (1986) commented, “the dream house is a uniquely American form, because for the first time in history, a civilization has created a utopian ideal based upon the house rather than the city or the nation” (p. 18).
However, when this ideal limits the ability of children and illustrators to dream of houses that both innovate and provide comfort, as this study has suggested, the ideal perhaps deserves re-thinking. Hayden continued, “for the last two centuries, the quintessential American intellectual, political, and architectural dilemma has been: dream house or ideal city? We have seen how Americans have wavered over these alternatives and how costly this hesitation has been for an urban society” (p. 231). The prevalence of an agrarian house not only disenfranchises children who live in urban areas or in different types of housing but misses out on the construction of community better equipped to deal with future challenges. Furthermore, the commonalities between children’s and illustrator’s depictions of houses suggest that the sign for house is firmly established and that children are enculturated into its representation at the age of four or younger.

**Finding two: Production techniques and innovation.** Within most design fields, iteration is an important part of the artistic process. Although not technically within the scope of this study, evidence of iteration in the work of illustrators appears within their descriptions of their design process. Chris Raschka’s Caldecott Award winning work on *A Ball for Daisy* (2011) involved numerous versions of the illustrations (Raschka & Wade, 2013). With quickly produced watercolors, Raschka’s artistic technique required large numbers of paintings before he selected the optimal version. Unfortunately this sense of iteration is typically kept backstage and children presented only with finished images. One exception comes in the form of a graphic novel, almost a picturebook for older readers. *The Wonderful Wizard of Oz* (Shanower & Baum, 2010) included a section of character sketches from when Scottie Young was working on the illustrations. However, unlike the carefully optimized 32 pages of the typical picturebook, graphic novels can be of any length.

Although the two activities with children barely hinted at an iterative process, the comparison of the two houses allowed some measurement of the degree to which they could innovate when asked to design a house as opposed to drawing a house. It seems healthy to find evidence of creating different versions of houses on their own initiative. In particular, the multiple complete versions of houses did not include the negative attitude focused on “doing it right” surrounding starting incomplete drawings over.

By nature, the picturebook is an iterative media. Fitting the definition of sequential art, “juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or
produce an aesthetic response in the viewer” (McCloud, 1999, p. 9), picturebooks have the opportunity to depict not just one, but many images. In this way there is greater potential for innovation since other signifiers beyond the conventional patterns of house depiction can indicate “houseness.” However, this potential seems typically underused due to the emphasis on communicating other important information via the illustrations.

Illustrators who did present innovative depictions of houses typically did so when they were presenting a variety of houses. One theory to explain this might be that when depicting several houses at once it is more entertaining to play with the differences between them, at least to the extent that the artistic style of the book allows. One issue with this is that it becomes the collection of houses that is appealing, rather than the individual house. Going back to the example of The Big Orange Splot (Pinkwater, 1977), Mr. Plumbean’s house has so many different ideas that it almost becomes generalized. In comparison, his neighbor’s houses are so specific that it would be difficult to choose only one (see Figure 57 on page 163). Whereas this concept would translate well into neighborhoods with collections different houses, the house’s ties to individuality often preclude it from working in a community. This is even seen in books like Charlotte Jane Battles Bedtime (Wolfe, 2011) where the protagonist’s house—in this case a boat—need to stand out from the other houses even though the neighborhood presents a large amount of variety. Regardless, the presentation of many items in sequence draws attention to differences without impacting the communicative properties of the sign through association by context.

The potential for fatigue in iteration is of some concern. When the designs were judged against the drawings they seemed less aesthetically satisfying as the children experimented with new forms. Whereas illustrators are more trained and practiced, it is worth remembering that innovation takes more effort than repeating conventional forms and should, perhaps, be granted more leniency in terms of technique. It is also possible that the process of iteration depletes some of the whimsy of first expression, especially in children’s shorter attention spans. Fortunately, even if already enculturated into conventional methods of depicting houses, several children still demonstrated elements of innovation in their first drawing.
Conclusions

This study reported a variety of findings in response to the three research questions. Although they focus on three different aspects of house depictions—the patterns found in children’s books, correlations between drawings and illustrations, and how these depictions demonstrate innovation—together they suggest that the house is traditionally a conventional image that can host numerous messages. Although typically these messages are conservative, the opportunity for innovation is present but currently does not fulfill its potential.

Patterns of house depiction in picturebooks. This study found that house depictions closely follow several conventional patterns. As these patterns departed from the primitive of the iconic house, they became larger, more realistic, and more complicated. These images demonstrated conflict between their ability to communicate and the innovative aspects of the illustrator’s stylistic choices.

Depictions of houses in illustration are closely related to other aspects of the picturebook media including text-image interactions, location in sequence, and repetitions of images. Thus they cannot be removed from their context without changes in their meaning-making abilities. Choices of house depiction are also associated with the possible roles that houses typically play within picturebooks. Other potent aspects of how presentation of these images fights between tradition and innovation include variation between houses depicted and depiction of criterial aspects of houses. Like conventions of characters in traditional literature, these traditions provide a shorthand for indicating “housesness,” allowing illustrators to communicate economically.

In addition to characterizing the house occupants, the patterns of house depictions reflect the culture that creates and consumes them. Particularly in evidence are reflections of the American Dream. Ideas of children’s literature and even preferred architectural attributes of home are also present.

The amount of design invested in depictions of houses varies considerably. Houses with less artistic investment suggest more of an intuitive selection of form such that it fits in an artistic sense with the rest of the book. Houses that are detailed and are important to the story are likely more deliberate products of an illustrator’s imagination.
Correlations between drawings and illustrations. As shown in differences between patterns of house depiction in children’s work and picturebooks, children depict houses symbolically once trained in the conventional approach of the iconic house. Younger and less skilled children represent houses conceptually as space rather than signs. In comparison, illustrators draw more houses based on realistic patterns. However, their work nonetheless occupies a middle ground between observation of actual houses and highly symbolic representation. This could be seen as spectrum from the most realistic house depictions to the most symbolic on which children draw more towards the symbolic end. In comparison, illustrators typically depict houses about midway between realistic houses and the symbolic representations depicted by children.

Findings as to whether children differed from illustrators in terms of economic connotations for the icon of the house were inconclusive. Some children evidenced a competitive sense of house as indicative of wealth and status as seen in size, pattern, and verbal description. Others, on the contrary, bypassed this impulse in order to create an interesting house for their designs.

Although this study could only suggest possible impacts of house depiction techniques upon conceptions of actual constructed architecture, visual and verbal cues as to how houses are conventionally depicted in the process of drawing enculturate children as to what images of houses are meant to look like. As a visual cue, picturebooks perform a similar role of enculturation. In comparison, the illustrators of picturebooks likely had similar influences as children. With repeated stimuli throughout their longer lives, these adults have had continued exposure traditional images. At the same time, their training and practice as artists endows them with greater skill in depiction, as well as increased exposure to unconventional images. Thus the work of illustrators often blends conventional depiction with realism and moderate innovation.

Innovation in house depiction. Innovation in house depiction is typically superficial, timid, or merely substitutes a different type of building for a house. This is likely due to the difficulty of indicating that nontraditional structures are dwellings. Freed from the constraints of realism, the need to communicate houseness, and the practice of illustrators, children can be more adept at innovating, although of course they do so less realistically.
Limitations

In the end, this study, like all research, has limitations to its findings. One serious consideration is the subjective identification of houses and subsequent coding. Other noteworthy areas of concern include conflating depiction with their real-world equivalents, limits to the use of drawings and books as artifacts, and overestimation of the picturebook as a tool of enculturation.

Despite an intuitive knowledge of houseness (cf. Jacobson et al., 2002, p. 7) and a more objective awareness of criterial aspects of houses, there were occasionally some difficulties in determining if something was a house. One such issue was having a substantial enough portion of the houses present in the book for assessment. This disqualified *A Birthday for Frances* (Hoban, 1968) with only fractions of the front porch present and *The Gingerbread Boy* (Galdone, 2011) which depicted only a bit of wall with window beyond an arbor from the subsample of picturebooks that included houses.

Another difficulty was with vague houses often identified through association by context. Some books obfuscated houses with lack of detail. *Every Cowgirl Needs Dancing Boots* (Janni, 2011) and *These Hands* (Mason, 2011) are prime examples of this but the vague forms in the background were actually easy to distinguish as houses. Sometimes the use of generic forms created more confusion than forms that were obscured. As the buildings in the background got less distinct, they were more difficult to make out and may have resulted in possible errors in counting distinct houses and numbers of depictions of houses, especially in books such as *The Hinky-Pink* (McDonald, 2008). Of the most concern to the issues at hand, extremely innovative houses were also easy to overlook due to their lack of visual indicators of houseness. This may have resulted in a lack of representation of some of the most unique examples presented. To mitigate this, error on the side of positive identification of a structure as a house was preferred.

Furthermore, in discussing some of the images with others, it became clear that different people had different definitions of what constitutes a house. Although *Ella the Elegant Elephant* (D’Amico, 2004) did not present significant issues through indistinct buildings in the distance, it was difficult to determine the use of the buildings without traditional distinctions between commercial and residential buildings (see Figure 58). Fortunately, other pages depicted the structures close up and indicated most buildings depicted as commercial or mixed use, as the protagonist’s home was. However, without this contextual piece,
numbers of “houses” seen in a two page spread ranged from none to thirty-two based on the personal predilections of the viewer.

Figure 58. Spread in *Ella the Elegant Elephant* (D’Amico, 2004) that produced widely varying counts of houses ranging from 0 to 32 when shown to different people in comparison with a close up view on a subsequent page with visual indicators as to the use of the buildings.

Many of the connections between depictions and their real-world equivalents are also tenuous. Crabb and Marciano (2011) observed that “the world of material culture in children’s books does not perfectly reflect the real-world of made things and technology” (p. 396). Consequently, connections between domestic architecture and depictions of houses, a basic precept upon which this study is based, must remain as supposition until more conclusive research is performed.

Additionally, there are definite limits to what can be seen in drawings from the perspective of artifacts. Coates and Coates (2006) noted that drawings “cannot communicate the social interaction, problem solving, conceptual and creative thinking, predicting, debate and introspection which may well be a fundamental attendant of the process of drawing” (p. 221). The social interactions with children and observations as they worked alluded to some of these aspects, but also had the drawback of influencing the drawings produced.

Moreover, my own proclivities may have resulted in an overestimation of the power of picturebooks as a tool of enculturation. Crabb and Marciano (2011) noted that “children’s books may be
only one of many sources of information that contribute to schema development” (p. 396) such as that of house depictions. This is certainly true, as seen in the influence of social interactions in children’s drawings, but is nonetheless difficult to measure. Additionally, children are bombarded with visual images from a number of different media streams including television, comic, movies, video games, magazines, advertisements, and toys (cf. Kinder, 1999). Effects from one specific media are impossible to separate from the others.

**Researcher reflections.** Coming from an upper middle class suburban neighborhood, my perspective toward houses bears a particular bias. Although my childhood was replete with White privilege, my public school education in an affluent county with a mandatory commitment to mixed income housing brought me into contact with people of different color and class. I slept over in working class townhomes, made soup and cookies in moderately sized single-family detached houses, and filmed a scene from *The Odyssey* (Homer & Lattimore, 1967) in a hot tub in a McMansion.

I have a love-hate relationship with houses. Of all architecture, I see the greatest possible impact from these structures on people’s daily lives but also a blight of dull-colored repetitions of over-size houses across emotionless suburbs. Combined with an interest in promoting sustainable practices, I am drawn toward variety, innovation, community, and small nurturing structures that respect the earth on which they are set with modesty and efficiency. Just as these aspects inspired this study, so too do they bias it towards my personal predilection.

**Implications**

The findings suggest several areas in which to recommend change. Both from the perspective of illustrators and children, innovation in house depiction could be increased through several avenues. First, the data collected could be extended to suggest a new theory of how picturebooks work to convey meaning. Part of this includes increasing access to books depicting innovative and non-traditional housing. Generating awareness of such a subtle ideological issue may present some difficulty but nonetheless is a worthwhile endeavor. Illustrators may wish to reconsider their depictions of houses and educators should consider changing practices regarding drawing in order to increase potential for innovation.
How illustrations in picturebooks might work. Understanding how the particular sign of the “house” is communicated suggests a new set of ways that illustrations in picturebooks work. Pictures work to convey meaning through criterial aspects, text to picture identifications, connections across the page turn, and association by context. First, there are the criterial aspects of the sign itself that allow a number of degrees of freedom for variation while communication is still achieved. The text can additionally identify questionable structures as houses by referring to them as such. As seen in houses playing the role of a shell for stories that happened inside, the scene to scene transition between pages can be enough to connect interior criterial aspects of home with the exterior (cf. McCloud, 1999, p. 74), even if somewhat unlikely as seen in the size issues in *Here Comes Jack Frost* (Kohara, 2009, see Figure 33 on page 115). Finally, identification of houses was often accomplished through association by context. Unidentifiable buildings that shared one or more physical properties (such as size, proportion, color, shape, and orientation) with a house in the same context could also be assumed to be houses.

In comparison to previous theories of how pictures work, this theory is drawn from an empirical study and can be supported by observations on a moderate-sized random sample of picturebooks. However, it does not have some of the same neatness characteristic of personal grammars (cf. Moebius, 1986; Nikolajeva & Scott, 2001; Nodelman, 1988 and others). This theory would certainly need further study to see if it was exhaustive and if it could be applied to other images as well as depictions of houses.

Access to books depicting innovative and non-traditional housing. Whereas biased depictions of housing may not present the same level of concern as stereotyped representations of race, gender, and other ways of being, there is still reason to carefully consider housing depictions in when selecting books. By choosing picturebooks that present innovative houses and non-traditional housing, teachers, librarians, publishers, and parents can help promote a similar recognition of diversity. Additionally, this work will help deconstruct the restrictive institution of the American Dream.

A prime way to encourage innovation in children is to present books that include innovative houses. Books that focus the plot on innovation—for example *Roberto the Insect Architect* (Laden, 2000), *The Big Orange Splot* (Pinkwater, 1977), *The Araboolies of Liberty Street* (Swope, 2001)—are not the norm but may be the easiest to find in a library catalog with a sufficient selection of subject headings.
Books with innovative houses such as *Charlotte Jane Battles Bedtime* (Wolfe, 2011), *A Cup for Everyone* (Yonezu, 2008), *Don’t Squish the Sasquatch!* (Redeker, 2012), and *A Goodnight Walk* (Cooper, 2005) only come up by seldom chance. However, once purchased for a collection, this type of representation of houses is at least publicly available.

Although only 61% of housing units in the United States are single family detached houses (United States Census Bureau, 2013c), pictures of houses seem to fill picturebooks. Books that include multifamily and mixed-use housing also present a variety of races and economic classes that are beneficial for reflecting the lived experiences of readers (cf. Bishop, 1990; Cooperative Children’s Book Center, n.d.-b; Saltmarsh, 2009; Sano, 2009; and others). However, books such as *Come On, Rain* (Hesse, 1999), *Ella the Elegant Elephant* (D’Amico, 2004), *Metal Man* (Reynolds, 2008), *Jack and the Beanstalk* (Crews, 2011), *Because Amelia Smiled* (D. E. Stein, 2012), *At Night* (Bean, 2007), and *Three French Hens* (Palatini, 2005) with alternative dwelling types are not easy to find. However, their tender representations of homes that diverge from single-family detached housing can affirm the experiences of children who live in similar places.

Libraries could improve access to this literature through several methods. Consistent and additional search terms would help locate both innovative houses and non-traditional housing in picturebooks. *At Night* (Bean, 2007) produced the subject “City and town life -- Pictorial works” in the Columbus Metropolitan Library catalog (*Columbus Metropolitan Library Catalog*, 2013) but none of the other books came up under this heading. *Three French Hens* (Palatini, 2005) came up with “Bronx (New York, N.Y.) -- Juvenile fiction,” a place specific heading. With only two or three search terms per title, the important secondary themes of the books, particularly those that happen within the illustrations, are missed. With deplorably limited search capabilities in library catalogs such as that at Columbus Metropolitan Library, a better alternative may be NoveList (*NoveList Plus*, n.d.), a subscription resource that adds an extra step to searching but includes more subject headings.

As libraries can be limited to number and pre-established subject headings, opportunities to promote these books can happen through other routes as well. Creating and distributing booklists is another
method of making these books findable. Additionally, libraries can promote these books through displays, storytimes, and programs once the books have been identified.

**Generating awareness.** In light of the urgency of other diversity issues, creating awareness of potential hazards associated with traditional depictions of houses will be difficult. In particular, understanding that the repetition of more conventional house depictions can have as much impact on consumers as actual houses is difficult due to the hidden ideology of these images. The most direct option for generating awareness of these issues would be presenting articles in publications that are likely to be accessible to illustrators and adults with front line interaction with children. Another possibility would be to broaden research in the area to address other conventional images more closely linked with more pressing diversity issues or approaching the subject from the direction of visual literacy.

Additionally, some of the impetus for change could come from the discipline of architecture itself, particularly in terms of increasing exposure to non-conventionally house-like dwellings. Although architecture camps and other child-friendly activities are available, the presence of architectural creation and appreciation could be increased in classrooms and libraries. Recent interests in Legos programs and science technology engineering math education (e.g. Hopwood, 2012; Prendergast, 2012) would be good starting points for increased attention. Popular media could also be enlisted; a new television show on the Public Broadcasting Service called *Cool Spaces!* (Chung, Agnese, Kim, & Nieminen, 2014) hopes to engage the general public with innovative works of architecture (“Cool Spaces! Premieres on PBS in April,” 2014).

**Creating books.** Illustrators may also wish to question their representations of houses since their choices reaffirm traditional ideals and privilege a subset of their audience. This could occur in two different areas: houses depicted with less detail in the background and well-detailed houses that are primary locations within the book.

Houses in the background are perhaps the more difficult challenge. Alternative types of housing such as apartment buildings do not function as icons. Instead their exterior is similar to places of business and commerce. Thus they do not easily communicate the idea of home without the direct visual connection to a character within the story. Identifying and exploiting criterial aspects of apartment buildings such as
balconies and window boxes could help separate them from other buildings. These apartment buildings can be seen as an important visual representation of multiculturalism (cf. Scott, 2014). Additionally, the tall and urban patterns present opportunities for features that could be adapted to indicate multifamily and attached housing by stretching the patterns. Techniques such as using criterial aspects on buildings in the area would also help assign status as a home to buildings in proximity through association by context. In particular, *The Last Tiger* (Elliott, 2012) presented this (see Figure 43 on page 131) and *Courage of the Blue Boy* (Neubecker, 2006) includes an example of somewhat innovative background houses that draw on pueblo houses that can be identified through association by context.

The other area of concern is in the depiction of a protagonist’s home. These dwellings appear with more detail but are more suited to use additional techniques, such as identifying the building in text and shifting between exterior and interior between images. They have the advantage of more artistic investment in design and can thus portray a more deliberate expression of “houseness.”

Furthermore, there is the greatest opportunity for innovation in “houseness” when indicators beyond the visual patterns of house depiction are employed. Instead of depending on the patterns identified in Question 1, Finding 1, new types of houses have the potential to be introduced using other signifiers. Possible ways of indicating that a building is a home beyond criterial aspects included textual references, association by context, and scenes that shift from outside to inside, depicting typical interior amenities for living.

**Education.** This research also presents some recommendations in terms of artistic expression and appreciation in the classroom. Although the sources that encourage conventional means of representing the world are numerous and widespread, children’s ability to innovate would benefit from supporting observational drawing at young ages as well. As early childhood education teachers can be uncomfortable teaching technical art skills, this suggests the need for more art teachers in schools. The ideal would be for children to be proficient in both types of visual literacy. By becoming “bilingual,” both realistic and conventional images can be produced and understood, allowing critical skills for evaluation of images. In the case of depictions of houses, questioning the relationship between sign and the object represented might help children expand their ideas of where people live and the best ways to fulfill those needs. Although
unlikely in the current test-driven education system, the opportunity for not only further art appreciation but architecture appreciation would increase visual and spatial literacy skills.

Additionally, further exposure to the practices of iteration and artistic expression could benefit children. Hidden behind finished works of art like picturebooks, the artistic process seems instantaneous and easy rather than a practice that is ongoing and evolving. Inviting children to draw the same thing multiple times and compare would further increase visual literacy skills as well as let them participate in typical processes of design. Looking closely at different artistic expressions of the same object across several books or even several media would encourage experimentation and, at the least, affirm variations in conventional methods of representation.

**Suggestions for Future Research**

Moving beyond the boundaries of a dissertation, several ways to continue research in the area of cultural influences on visual communication present themselves. Most directly, several of the topics covered herein lend themselves to more focused articles for publication in variety of venues. Further analysis of the data sets already collected could extend the investigation into areas identified as of interest. Additionally, this study has suggested directions for research with supplementary data in the same vein.

**Focused reporting of the present analysis.** The data and analysis from this study lends itself toward a series of articles that go into more depth than permitted in this space. The essence of this study may be best reported in a somewhat substantial piece on patterns and innovations of house depiction. Additionally, a practice-oriented article for librarians and teachers would suggest opportunities for teaching visual literacy skills and encouraging critical awareness of commonplace images like the house. A general review of the differences between children’s drawing and the work of professional illustrators from the perspective of art education could address conventional and observational techniques for representation, perhaps making an argument for alternative techniques of representation. As art education is not my central area of expertise, this would be best done in conjunction with someone who specializes in children’s drawings since a wealth of information on the subject is available.

Beyond the major ideas of this study, several subtopics deserve more attention than they have so far received. In particular, reflections of the American Dream found in these picturebooks would produce a
piece narrower in focus but still of interest to a wide variety of scholars. This type of work may best fit the field of popular culture studies. In specific regards to the field of children’s literature, an examination of how depictions of houses work to characterize in picturebooks could extend Nikolajeva and Scott (2001). Investigating how attitudes toward the suburb are represented in the picturebooks collected would provide a thoughtful connection between city and regional planning and material culture. The implications of depictions of houses as uninhabitable objects as art or for play, especially in association with metafiction, speak to scholars of both children’s literature and art education.

**Further analysis of data sets collected.** Further analysis of the data and picturebooks collected could produce additional findings of interest to this field of research. As dates of publication were collected, assessing change in house depictions over time would extend this inquiry. Additional data sources may be desired, particularly older books since most of the picturebooks collected were recent. These newer books could be compared with a historical children’s literature collection such as that at the Baldwin Library at University of Florida. Gender differences between children’s drawings were observed but not explored. Girls and boys seemed to use different techniques for innovation with girls focusing on decoration and style and boys enabling unusual actions for a house. Although the sample size is small for such a subdivision, the drawings could be analyzed in some depth. Dwellings for people or anthropomorphized animals beyond houses were observed but not counted. Revisiting this theme would suggest incidence in the population and strengthen the case for nontraditional housing types. Exploring the relationship between ambiguity in artistic style and realism of house depiction would focus on the choices illustrators make in terms of representation. Additionally, a more thorough investigation of artistic investment and intuition comparing background images to more detailed, and presumably deliberate, houses that have been foregrounded. Although addressed in the pilot study, this study did not thoroughly pursue how depicted houses relate to architectural housing styles. This area of inquiry could propose ties between built houses and depictions of houses. Finally, analysis of alternative terms for houses and textual mentions of houses in picturebooks that do not depict houses would facilitate a more in-depth investigation of textual representations of houses.
Research involving supplementary data. Several related areas of inquiry involving the collection of additional data seem promising. These include: investigation of the illustrator’s perspective, more direct connections between children interpreting and producing depictions of houses, linking depicted architecture with ideas of actual buildings, divergences between the work of American and international illustrators, and comparing this random sample of picturebooks with award winners or a purposive sample.

Whereas the influences on illustrator’s process were not a part of this investigation, these findings indicate a promising area for inquiry. The Transactional Theory of Reading Literature (Rosenblatt, 1978) highlighted a threesome of the reader, the text, and the author (p. 1). In this study I examined the books themselves, focusing on the visual “text” and attempted to glimpse responses of child readers through their drawings. A next logical step would be to look at the third party involved in visual texts—the illustrator. Interviewing several illustrators would provide data suggesting some of the intentions behind the illustrations and possibly theories as to their origin. Such study would be easier through self-reports of memories and influences rather than real-time observation but could produce the missing part of a metaphoric enculturation equation.

Additionally, evaluation of a more immediate response to picturebooks would provide more dependable evidence of visual enculturation through the images they contain. This area of inquiry could investigate how children view and process these texts through activities involving picturebooks and their illustrations. One such activity could include pre-test and post-test drawings of houses to gauge response to picturebooks with non-traditional houses such as The Big Orange Splot (Pinkwater, 1977) or non-traditional housing such as the mixed use housing in Because Amelia Smiled (D. E. Stein, 2012) or the apartments in At Night (Bean, 2007).

The relationship between conceptions of architectural space and depiction of it could be hypothesized from this study but not to the point of any definitive conclusion. Investigation in this direction could attempt to align evidence of children’s ideas of houses with actual houses. For example, an individually-narrated free pilesorting activity of illustrations and photographs of houses could show how children categorize the various types of images they may be presented with.
As the house has a lot of cultural importance within the United States, the question of differences between depictions of houses in American and international illustration has been raised by this study. Especially with global interchange of ideas, the iconic house may be a somewhat universal sign or it may be tempered by local forms for dwellings. This could be studied through a sample of books featuring houses by international illustrators not published within the United States.

This study addressed the breadth of children’s picturebooks through a random sample, a technique not commonly used in picturebook research. With so many studies focused on award winners (e.g. Crabb & Bielawski, 1994; Crabb & Marciano, 2011; Crisp & Hiller, 2011; Hillard, 2002; Williams, Podeschi, Palmer, Schwadel, & Meyler, 2012) and purposive samples (e.g. Moebius, 1991; Smith-D’Arezzo & Musgrove, 2011), the variety of children’s literature that children check out from libraries and read every day—a combination of award-winners, titles with popular appeal, and more mundane books—is neglected. Although Hillard (2002) alluded to this concern, there is no evidence that award winning books provide a representative sample (p. 20, see also Crabb & Bielawski, 1994). Comparison of the depictions of houses in award winning books with those of less acclaim could address this need. In particular, non-award winning books may be more conservative than books selected by a party possibly interested in promoting books with particular messages (cf. Crabb & Bielawski, 1994, p. 78).

In an increasingly visual future (Kress & van Leeuwen, 2006, p. 16), questions regarding how images communicate social norms will continue to proliferate. These may materialize in many media, but those of picturebooks and children’s drawings have proved fertile for exploration of themes of tradition and innovation. Hopefully such studies will encourage innovative images to transform ideas, as children creatively address any number of challenges in the future while maintaining the comforting refuge idealized in the house.
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184


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**Picturebook Sample Containing Depictions of Houses**


Appendix A: Categories and Codes

* Categories prompted by the pilot study
  Analysis of exemplar house
  Analysis of entire picturebook
  Analysis of children’s drawings and designs

*Pattern
Conmonly found types of houses depictions primarily based upon form, an evolution of the “house type” category in the pilot study, in regard to the exemplar houses this category is exclusive but books can contain different types of house

Iconic (square or squat rectilinear form with a gable-front or triangular pyramidal/hipped roof, often small and simple)
Tall (rectilinear form more than two stories tall with a gable-front or triangular pyramidal/hipped roof)
Simple (single story house with side gable roof or hipped roof, often small and simple)
Square (side gable roof over body that is approximately as tall as it is wide)
Urban (wall dominates the façade, often flat or hipped/mansard roof)
Neighborhood (compound forms with irregular floor plan, often more realistic)
Haunted (complicated houses with compound forms tending to have towers and cresting, often in poor repair, Victorian style with mansard roofs)
Castle (large and impressive houses often including round or square towers, masonry construction, and battlements)

Tree (house is within a hollowed out tree trunk, other plant forms such as mushrooms are also possible)
Other (anything that did not fit but was clearly distinguishable, often historic or cultural architectural styles or extremely innovative)
Unknown (could not be determined)

Body Shape
The shape of s house’s elevation once the roof has been removed
Portrait (taller than wide)
Square (height is approximately the same as width)
Landscape (wider than tall)
Round (circular or dome-like)
Irregular
Other
Unknown (could not be determined)

*Height
Number of stories tall

*Width
Number of units wide

*Depth
Number of units deep

*Elevation Size
Height multiplied by width
Elevation Size (Categories)

Ordinal categories of elevation size
1 (less than three units square)
2 (less than five units square)
3 (less than seven units square)
4 (seven or more units square)

Volume

Height multiplied by width multiplied by depth

*Roles

Roles that one or more houses played within the story of a book, an evolution of the "plot type" category in the pilot study

Plot (house is important to the plot)
Driveby (houses are passed along a journey to indicate distance)
Identity (house is used to give information about one or more of the characters)
Destination (house is a destination of a journey)
Origin (house is the origin of a journey)
Prop (house is acted upon in the story)
Visit (the protagonist is a visitor to the house)
Scenery (house is there for aesthetic purposes)
Setting (house helps set the scene)
Inside (story happens inside the house)
Conformity (multiple houses depict conformity)
Variety (multiple houses depict variety)
Refuge (the house is portrayed as an especially warm and safe place)
Mood (stylistic depiction of the house helps establish a distinct atmosphere)
Symbolic (house can be read as symbolic of something beyond identity and comfort)

Text Mentions (Number)

Number of times the word house (or houses) is used in the text

Text Mentions (Yes/No)

Whether the house is mentioned in the text or not
Yes
No

Location in the Book

Where in the physical sequence of pages houses are found, houses may be found in multiple places within one book

Front Cover
Front Endpapers
Beginning (approx. pages 1-7 of a 32 page book)
Near Beginning (approx. pages 8-13)
Middle (approx. pages 14-19)
Near End (approx. pages 20-25)
End (approx. pages 26-32)
Back Endpapers
Back Cover

Ambiguity

Amount of ambiguity that a picturebook or picture depicts the setting with
0 (an exact specific place as in a photograph)
3 (specific props, vague background sometimes shown)
5 (could happen anywhere, no details, figures floating in white space or on a simple horizon line)

*Realism of House

The degree to which realistic details are present on a house

Realistic (includes all trim and details such as siding lines, gutters, downspouts, window/door trim, shutter detail, etc)
Mostly (includes door/window trim, and beyond but not necessarily all)
Somewhat (includes door/window trim)
Cartoon (outline only)
Basic (blocks of color/ shape only)

Realism of House (Ordinal)

An ordinal translation of realism codes
3 (realistic)
2 (mostly)
1 (somewhat)
0 (cartoon or basic)
Characters
What type of being are the primary characters
Animals (act mostly like animals, do not live in houses)
Anthropomorphized Animals (act more like people than animals)
People
Other (such as monsters, ghosts, or robots)

People as Characters
Whether the primary characters were people or animals
Yes (people)
No (animals including those that have been anthropomorphized)

Total Depiction Count
Number of houses depicted in an entire book including both fractional and entire depictions

House Page Count
Number of pages that houses appeared on regardless of the number of houses or portion of the house shown

Distinct House Counts
Number of different houses depicted in a book regardless of how many times they were depicted

Amount of Variety
An integer between -8 and 8 created by adding together characteristics that were similar as a negative value and the number of characteristics that were different as a positive value

Size
Shape
Style
Roof
Window
Color
Decoration
Orientation

Amount of Variety (5 Categories)
Codes restricted to five levels for chi-square testing
Very Similar (-8 through -6)
Similar (-5 through -3)
Equally Similar/Different (-2 through 2)
Different (3 through 5)
Very Different (6 through 8)

Amount of Variety (3 Categories)
Codes restricted to three levels due to the small data sets for some categories
Similar (-3 and less)
Equally Similar/Different (-2 through 2)
Different (3 and more)

Race (5 Categories)
Apparent race of the protagonist(s)
Asian
Black
Latino/Latina
White
Multicultural (principal characters of more than one race)

Race (2 Categories)
Collapsed codes for more accurate chi-square tests
Non-White (Asian, Black, Latino/Latina, and multicultural)
White

*Repair
Apparent state of repair of the house
Good
Fair
Poor
Wealth
Apparent socio-economic class (Scheffert, 2009) of the house’s owners based on size, style, and repair

Generational Poverty (“the harsh conditions of this type of poverty may keep these families from breaking the barriers for generations”)

Working Poor (“these families live paycheck to paycheck, often in fear of being laid off”)

Working Class (“generally these workers have more stable employment than the working poor. They may use their hands and bodies as a primary tool to do their work”)

Situational Poverty (“a crisis (e.g., health, divorce, etc.) results in an income drop causing these situations. They generally are able to make it back to middle class due to their assets such as education, family support, etc.”)

Risen from Poverty Middle Class (“they have gained some resources. They often become the “safety net” for others (their immediate family, friends, etc.”)

Illusory Middle Class (“these Americans have houses, cars, TVs, etc., but they also have staggering debt associated with each possession”)

Lower Aspiring Middle Class (“adults imitate neighbors with consumer purchases. Going to college is emphasized with children although they may not have gone to college themselves”)

Solidly Middle Class (“they own their home and have investments or business. Assume children will be college graduate/professionals”)

Upper Middle Class (“they have a higher income due to professional jobs and/or investment incomes”)

Millionaire Middle Class (“they have a net worth of over a million dollars, but have not mentally accepted their wealth”)

Owning Rich (“they own income-producing assets sufficient to make paid employment unnecessary”)

Ruling Rich (“they hold positions of power in major institutions of society and may live secluded lives or are protected from the general public”)

Setting
Where the book appears to be primarily set
Rural
Small Town (more populated area in rural setting)
Suburb
Urban

*Symmetry
Type of symmetry present
Symmetrical
Balanced
Asymmetrical

*Number of Garages
Number of garages depicted on the exemplar house

Garages
Presence of one or more garages
Yes
No

*Number of Chimneys
Number of chimneys or stovepipes

Chimneys
Presence of one or more chimneys or stovepipes
Yes
No

*Porches
Type of front entry feature present
No Porch (door opens directly on to the ground or walk)
Steps (one or more step leading to the door)
Stoop (could be covered with small overhang)
Porch (front porch suitable to habitation beyond opening the door)
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porches</td>
<td>Presence of some type of entry feature</td>
</tr>
<tr>
<td></td>
<td>Yes (steps, stoop, or porch)</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Perspective</td>
<td>Type of indicators of perspective</td>
</tr>
<tr>
<td></td>
<td>Flat (no use of perspective)</td>
</tr>
<tr>
<td></td>
<td>Fake (non-traditional representation of perspective)</td>
</tr>
<tr>
<td></td>
<td>Real (traditional representation of perspective)</td>
</tr>
<tr>
<td>Can See Inside</td>
<td>Depiction of interior and exterior of one or more houses in the same image,</td>
</tr>
<tr>
<td></td>
<td>in children's images this appeared with items like couches depicted on the</td>
</tr>
<tr>
<td></td>
<td>front façade, in picturebooks this was typically the use of a cross-section</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Face Focused On</td>
<td>Which sides of the house are shown and emphasized</td>
</tr>
<tr>
<td></td>
<td>Front (no other faces present)</td>
</tr>
<tr>
<td></td>
<td>Front and Side (emphasis on front)</td>
</tr>
<tr>
<td></td>
<td>Side and Front (emphasis on side)</td>
</tr>
<tr>
<td></td>
<td>Side (no other faces present)</td>
</tr>
<tr>
<td></td>
<td>Back (only the back or the back and a side shown)</td>
</tr>
<tr>
<td></td>
<td>Unknown (cannot be determined)</td>
</tr>
<tr>
<td>Shows Other Than Front</td>
<td>If a house shows the front of the house</td>
</tr>
<tr>
<td></td>
<td>Front (no other faces present)</td>
</tr>
<tr>
<td></td>
<td>Other (any other face present)</td>
</tr>
<tr>
<td></td>
<td>Unknown (cannot be determined)</td>
</tr>
<tr>
<td>Focuses on Front</td>
<td>Focuses on the front façade regardless of what other faces are also</td>
</tr>
<tr>
<td></td>
<td>depicted</td>
</tr>
<tr>
<td></td>
<td>Front (can include side if not the focus)</td>
</tr>
<tr>
<td></td>
<td>Other (a façade other than the front is focused on)</td>
</tr>
<tr>
<td>Percent of Whole Depictions</td>
<td>Number of fractional depictions divided by total number of depictions</td>
</tr>
<tr>
<td>Decorations</td>
<td>Presence of decorations as an innovative feature</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Patterning</td>
<td>Presence of non realistic patterns as an innovative feature</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Bold Colors</td>
<td>Presence of bold colors as an innovative feature</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Artist Gender</td>
<td>Gender of the illustrator or child</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>House Art w/in Illustration</td>
<td>Presence of non-inhabitable houses</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Year</td>
<td>The original year of publication</td>
</tr>
<tr>
<td>Rating</td>
<td>The average GoodReads.com rating</td>
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### Appendix B: Inference Test Tables

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<td></td>
<td>Destination</td>
<td>19.46</td>
<td>&lt;.001</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Visitors</td>
<td>27.38</td>
<td>&lt;.001</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Drive-by</td>
<td>4.79</td>
<td>.03</td>
<td>Negative</td>
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<tr>
<td></td>
<td>Setting</td>
<td>16.04</td>
<td>&lt;.001</td>
<td>Positive</td>
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<tr>
<td></td>
<td>Inside</td>
<td>5.94</td>
<td>.02</td>
<td>Positive</td>
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<td></td>
<td>Prop</td>
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<td>Variety</td>
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<tr>
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<td>Refuge</td>
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### Identity

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<td></td>
<td>Setting</td>
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<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Inside</td>
<td>4.77</td>
<td>.03</td>
<td>Positive</td>
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<td></td>
<td>Refuge</td>
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<td>Positive</td>
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### Origin

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### Destination

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<tr>
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<td>Visitors</td>
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<td>&lt;.001</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
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### Visitors

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<td>Setting</td>
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<tr>
<td></td>
<td>Prop</td>
<td>.04</td>
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Table 1. Inference tests reporting significant associations between roles of houses in picturebooks.
Table 1 continued

<table>
<thead>
<tr>
<th>Drive-by</th>
<th>Plot</th>
<th>.03</th>
<th>Negative</th>
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<tr>
<td>Origin</td>
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</tr>
<tr>
<td>Scenery</td>
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<td>Positive</td>
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<tr>
<td>Variety</td>
<td>.001</td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Refuge</td>
<td>6.14</td>
<td>.01</td>
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</table>

<table>
<thead>
<tr>
<th>Scenery Identity</th>
<th>Drive-by</th>
<th>.06</th>
<th>Negative*</th>
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</thead>
<tbody>
<tr>
<td>Setting Identity</td>
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</tr>
<tr>
<td>Identity</td>
<td>&lt;.001</td>
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<tr>
<td>Origin</td>
<td>5.92</td>
<td>.02</td>
<td>Positive</td>
</tr>
<tr>
<td>Destination</td>
<td>.03</td>
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<td>Positive</td>
</tr>
<tr>
<td>Visit</td>
<td>.04</td>
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<td>Positive</td>
</tr>
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<td>Refuge</td>
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</table>

<table>
<thead>
<tr>
<th>Inside Plot Identity</th>
<th>5.94</th>
<th>.02</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>4.77</td>
<td>.03</td>
<td>Positive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prop Plot Visit</th>
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<tbody>
<tr>
<td>Visit</td>
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<td>Positive</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Conformity (None)</th>
<th>Variety Plot</th>
<th>7.07</th>
<th>.01</th>
<th>Negative</th>
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</thead>
<tbody>
<tr>
<td>Drive-by</td>
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<td>.001</td>
<td>Positive</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuge Plot Identity</th>
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</thead>
<tbody>
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<td>Drive-by</td>
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<td>.01</td>
<td>Negative</td>
</tr>
<tr>
<td>Setting</td>
<td>.02</td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td>Mood</td>
<td>6.11</td>
<td>.01</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mood Refug Symbolic</th>
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<th>.01</th>
<th>Positive</th>
</tr>
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<tbody>
<tr>
<td>Symbolic</td>
<td>4.77</td>
<td>.03</td>
<td>Positive</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbolic Plot Mood</th>
<th>7.67</th>
<th>.01</th>
<th>Positive</th>
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</thead>
<tbody>
<tr>
<td>Mood</td>
<td>4.77</td>
<td>.03</td>
<td>Positive</td>
</tr>
</tbody>
</table>

*The chi-square test reported a significant finding ($p = .05$) with 25% of cells having an expected count less than 5 but the more conservative Fisher’s exact test reported the association as not significant. ($p = .06$).
## Appendix C: Books with Depictions of Houses Not for Habitation

<table>
<thead>
<tr>
<th>Title</th>
<th>Depicted Media</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Cup for Everyone (Yonezu, 2008)</td>
<td>clay model</td>
<td>yes</td>
</tr>
<tr>
<td>Amelia Bedelia Bakes a Cake (Parish, 2010)</td>
<td>cake</td>
<td>no</td>
</tr>
<tr>
<td>Arthur Turns Green</td>
<td>child's drawing, poster</td>
<td>yes - the protagonist's house may be indicated in the drawing but is unclear</td>
</tr>
<tr>
<td>Best Baby Ever</td>
<td>child's drawing</td>
<td>yes</td>
</tr>
<tr>
<td>Curious George Visits a Toy Store</td>
<td>doll house</td>
<td>no</td>
</tr>
<tr>
<td>It's Not Fair</td>
<td>child's drawing</td>
<td>yes - similar to but not the protagonist's house</td>
</tr>
<tr>
<td>Layla's Head Scarf</td>
<td>child's drawing</td>
<td>no</td>
</tr>
<tr>
<td>Maddie's Monster Dad</td>
<td>product packaging</td>
<td>yes - similar color and window style to the protagonist's house</td>
</tr>
<tr>
<td>Merry Un-Christmas</td>
<td>doll house</td>
<td>no</td>
</tr>
<tr>
<td>Nobody's Diggier than a Dog</td>
<td>mural</td>
<td>yes - same house is treated as &quot;real&quot; until the last page</td>
</tr>
<tr>
<td>Ready for Pumpkins</td>
<td>child's drawing</td>
<td>yes</td>
</tr>
<tr>
<td>Road Work Ahead</td>
<td>pillow</td>
<td>yes</td>
</tr>
<tr>
<td>Squares</td>
<td>framed work of unknown artistic media, puzzle</td>
<td>yes</td>
</tr>
<tr>
<td>The Magical Christmas Horse</td>
<td>painting, wall-hung quilt, Christmas tree ornament</td>
<td>yes - same house as in the painting and on the ornament</td>
</tr>
<tr>
<td>Yours Truly, Louisa</td>
<td>billboard</td>
<td>yes</td>
</tr>
</tbody>
</table>

Table 2. List of books with depictions of houses not intended for habitation with depicted media and if the book also contains depictions of houses as dwelling places.
Appendix D: Research Protocol for IRB Approval for Investigation 2

Study Title: Children’s Drawings of Houses
IRB Protocol Number: 2013B0161

To ensure an effective review by the Institutional Review Board, a full description of the planned research must be submitted with the Application for Initial Review. A research protocol provides the reader with background information of the problem under study, including the study rationale, a detailed plan for conducting the research involving human research participants, and a discussion of the potential importance of the research.

I. Objectives

To investigate how children depict houses in their drawings
   Hypothesis: Children use similar conventions to depict houses when drawing
To see what elements of traditional depictions of houses are present in children’s drawings
   Question: What conventions do children use to depict houses in their drawings
   Hypothesis: Conventions that children use to depict houses can be identified
To assess the ability of children to innovate when drawing houses
   Hypothesis: Children are innovate more when asked to “design a house” rather than to “draw a house”
To see what correlations might be drawn from children’s drawings of houses to depictions of houses in picturebooks
   Hypothesis: The conventions children use in their drawings of houses are the same as those used by illustrators in picturebooks
   Hypothesis: The pictures where children are drawing a house will be more similar to the more traditional/conventional illustrations in picturebooks while the pictures where children designed a house will be more similar to illustrations that are more innovative in their depiction of houses

II. Background and Rationale

While much inquiry has investigated how children respond to the textual aspects of books, there has been little examination of the effects of images such as those found in picturebooks upon children. Most research in this area focuses on children’s responses to picturebooks as a whole through participant-observation of children usually using ethnographic methods (Kiefer, 1982; Sipe, 2007). Previous research has also looked at the texts on their own, focusing on images such as bedroom scenes (Moebius, 1991) or the house as a symbol in text (Dewan, 2004). However, visual media affects its viewers and understanding these effects becomes even more important as Kress and van Leeuwen (2006) suggested that our primarily verbal cultural is transforming into a primarily visual one.
This study is investigating if and how picturebooks influence ideas of how a house is represented. While Kress and van Leeuwen (2006) considered all “visual means of communication are rational expressions of cultural meanings” (p. 23), this particular image has rich connections to so many aspects of American culture—historical houses, race and class, contemporary critical architecture, and even the American dream. At the same time, depictions of houses appear to have changed little throughout the history of the picturebook.

This study primarily employs visual content analysis to look at motifs within pictures. The first phase of the project has been to analyze a random sampling of children’s picturebooks, looking at the prevalence of a similar depiction of house and the importance of the characteristics that comprise this iconic house. This portion of the study aims to compare the illustrations in picturebooks with drawings produced by children, two cultural artifacts that may influence each other. The goal is to investigate how children depict houses in their drawings, what elements of traditional depictions of houses are present in children’s drawings, and how children can innovate when drawing houses. From this it may be possible to see what connections might be drawn between children’s drawings of houses and the depictions of houses in picturebooks. Using a mixed methods approach, quantitative statistics will be able to speak to the prevalence of patterns and the extent to which they correlate between the two cultural productions investigated while qualitative analysis using grounded theory (Charmaz, 2001) will suggest how and why these images converge and diverge.

The research will provide benefits to educators, artists, and parents who are interested in how children view and internalize symbols and other visual information. This research will be of great value because little has been done before on this particular subject. The results may also be of interest to architects in understanding how traditional images of the single family detached home are promoted through repetition of a particular image. Increased understanding in visual conventions and symbol representations could inform teacher’s pedagogical practices of teaching visual literacy skills, help illustrators communicate effectively with children while encouraging creativity, encourage parents to help children develop visual interpretation skills, and help architects to create dwellings that satisfy their desires for a sense of home. On the other hand, looking at the potential for creativity and innovation may help children, illustrators, and architects re-imagine what a house is, moving toward the possibility of creating sustainable places to live that are less hampered by tradition. Additionally, research in the general area of visual literacy will become more and more important as visual communication increases.

III. Procedures
A. Research Design

Children ages 4-8 will be asked to first draw a house and, second, to design a house in a pre-test/post-test quasi-experiment. This activity would function by imposing a treatment, the baseline being the first drawing and the different prompt for second drawing suggesting a different response. The data collected will also be used for correlational comparison to images from picturebooks. Afterward each child will be asked about their drawings via an informal interview to gather qualitative data suggesting reasons for what has been observed.

These drawings will then be compared using visual content analysis to illustrations from a random sample of picturebooks. Using a mixed methods approach, quantitative statistics will be able to speak to the prevalence of patterns and the extent to which they correlate between the two
cultural productions investigated while qualitative analysis using grounded theory (Charmaz, 2001) will suggest how and why these images converge and diverge.

B. Sample
The first 35 children ages 4-8 with consent and assent to participate who are visiting COSI with a guardian who approach the activity station will comprise the sample. As this sample is not particularly large and will be limited by the demographics of museum visitors, this particular research will not be used to represent a larger body of children but rather to identify and explain connections and discrepancies with picturebook illustrations as well as suggest avenues for further research.

C. Measurement / Instrumentation
Appropriate categories from those used to analyze the illustrations in picturebooks will be used to review the drawings. These categories include characters present, ambiguity, house type, stories tall, units wide, units deep, wall material, wall color, trim color, foundation, roof shape, roof slope, roofing, roof color, chimney (number of), chimney location, chimney material, footprint, symmetry, p.o.v. vertical, p.o.v. horizontal, realism, number of doors, garage, door color, number of windows, matching windows, house style, front porch, leaning, towers, and cresting. Additional categories may be necessary to add once data has been collected. Since similar research has not been conducted before, an appropriate existing measurement technique does not exist. The data has not been coded by multiple raters partially due to the use of analysis similar to grounded theory (Charmaz, 2001) to develop the measurement tool throughout the analysis but also due to the logistical limitations of this study. The presentation of the data will maintain transparency and the conclusions will be reviewed by the dissertation committee before final presentation in order to meet measures of qualitative research validity (Lincoln, 1995) as best possible.

D. Detailed study procedures
Children ages 4-8 who are visiting COSI with a guardian will be asked to first draw a house and, second, to design a house using crayons on provided 8.5 x 11 paper. Afterward each child will be asked about their drawings in an informal interview (see below) and further informed about the study including examples of houses in picturebooks if they are interested. If the child wishes to keep his/her drawings, a scan of each will be made and the child can keep their original work. Personal information such as a participant’s name will not be stored at any point during the study with the exception of the permission form. The drawings, the researcher’s personal observations, notes from the informal interview, and the participant’s age will be kept in hard copy and drawings scans in digital copy on a password protected personal computer. The notes and the two drawings will be linked by a number.

Reasonably expected risks are limited to those which might present themselves to a child in daily life. Risk will be minimized by not separating adults and participant during the activity and allowing them interact as they please. A child will not be upset at giving up their drawing at the conclusion of the activity because they can keep the original and a scan can be collected. The activity will take place in a public venue with the permission of an organization devoted to children, education, and science. A child may become bored or tired as the result of a long day at the museum and will be permitted to leave at any time if distraught.

Timeline:
Late March: apply for expedited IRB approval
Mid-June to Early July: recruit participants and conduct activity in 2-4 days as needed to fulfill the sample size
Mid to Late July: analyze data collected

E. Internal Validity
To avoid study bias, dissertation committee members including one from a different field of Humanities review the data analysis. Additionally, measures of qualitative research validity (Lincoln, 1995) will be met as best possible.

F. Data Analysis
Appropriate categories from those used to analyze the illustrations in picturebooks will be used to review the drawings in a mixed-methods analysis. Categories will be analyzed using qualitative methods or quantitative methods as best fits their characteristics. Qualitative categories will be developed and analyzed using methods based on grounded theory (Charmaz, 2001). Qualitative data will be compared using t-tests or chi-squared analyses in SPSS as appropriate.

Sample Interview Questions

Can I ask you some questions about your two drawings to help me think about them?
Which house do you like better? Why?
What are some things that you see that are the same between your two drawings?
What are some things that you see that are different between your two drawings?
Do you think either of the two drawings looks like where you live?
What are some of the ways the drawings are similar or different to where you live?
Appendix E: Letter of Permission from COSI

April 12, 2013

To whom it may concern:

This letter has been written in support of Children’s Drawings of Houses currently being undertaken by Erin Reilly-Sanders. It is our understanding that the purpose of the research is to investigate how children depict houses in their drawings for the purpose of comparing with illustrations in children’s picturebooks and I give permission for the study to recruit and interact with participants from COSI.

We believe this work will be valuable to COSI in support of our efforts to showcase research that is relevant to the well-being of families. The researchers will recruit and interact with visitors to COSI during COSI normal operating hours, and they have agreed to work with me and the COSI staff regarding details of the interaction with COSI visitors and the logistics of the data collection.

We look forward to working on this project together.

Sincerely,

Rita Deedrick
Director, Center for Research & Evaluation
Appendix F: Participant Demographics in Investigation 2

<table>
<thead>
<tr>
<th>Gender</th>
<th>Race</th>
<th>Age</th>
<th>Other Participants</th>
<th>Media of House Depictions</th>
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<td>2</td>
<td>2</td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>1</td>
<td>1</td>
<td>paper</td>
</tr>
<tr>
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<td>No Participants for a Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Black</td>
<td>4</td>
<td></td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>3, 4, 5, 6</td>
<td></td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>6</td>
<td>4, 6, 7</td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>5</td>
<td>4, 5, 7</td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>5, 6</td>
<td></td>
<td>photo</td>
</tr>
<tr>
<td></td>
<td>No Participants for a Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>White</td>
<td>5</td>
<td></td>
<td>paper</td>
</tr>
<tr>
<td></td>
<td>No Participants for a Time</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>White or Other</td>
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<td>10</td>
<td>photo/paper</td>
</tr>
<tr>
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<td>White or Other</td>
<td>9</td>
<td>9</td>
<td>paper</td>
</tr>
<tr>
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<td>No Participants for a Time</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Black</td>
<td></td>
<td></td>
<td>photo</td>
</tr>
<tr>
<td></td>
<td>No Participants for a Time</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>Black</td>
<td>13</td>
<td>13, other children</td>
<td>photo</td>
</tr>
<tr>
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<td>Black</td>
<td>12</td>
<td>12, other children</td>
<td>photo</td>
</tr>
<tr>
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<td>White</td>
<td>15</td>
<td>12, 13, 15, other children</td>
<td>photo</td>
</tr>
<tr>
<td>Male</td>
<td>White</td>
<td>14</td>
<td>12, 13, 14, other children</td>
<td>photo</td>
</tr>
<tr>
<td></td>
<td>No Participants for a Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>17, 18</td>
<td></td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>White</td>
<td>18</td>
<td>16, 18, other children</td>
<td>paper</td>
</tr>
<tr>
<td>Male</td>
<td>White</td>
<td>17</td>
<td>17, 18, other children</td>
<td>paper</td>
</tr>
</tbody>
</table>

Table 3. Demographic information about the children who participated in the first day of data collection for Investigation 2 by participant number. Includes gender, age, race, other participants from the same party, other participants that may have influenced the participant, and media of house depictions collected.
<table>
<thead>
<tr>
<th>Male</th>
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<th>White</th>
<th>20, 21, 22</th>
<th>photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>8</td>
<td>Black &amp; White</td>
<td>22</td>
<td>19, 21, 22</td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>White</td>
<td>19, 20, 22</td>
<td>photo</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>White</td>
<td>20</td>
<td>19, 20, 21</td>
</tr>
</tbody>
</table>

No Participants for a Time

| Male | 6 | White | photo |

No Participants for a Time

| Male | 6 | White | photo |

Male 8 White 26, 27, other children photo

Female 5 White 25, 27, other children photo

Female 5 Asian 25, 26, other children photo

Male 4 White photo

No Participants for a Time

<table>
<thead>
<tr>
<th>Male</th>
<th>6</th>
<th>White</th>
<th>30</th>
<th>paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>6</td>
<td>White</td>
<td>29</td>
<td>paper</td>
</tr>
</tbody>
</table>

No Participants for a Time

| Female | 5 | White | 32 | 32 | paper |
| Female | 7 | White | 31 | 31 | paper |
| Female | 6 | White | 31, 32, other children | photo |

No Participants for a Time

| Female | 8 | White | 35, 36, 37 | 35, 36, 37 | paper |
| Male | 7 | White | 34, 36, 37 | 34, 36, 37 | paper |
| Male | 4 | White | 34, 35, 37 | 34, 35, 37 | paper/photo |
| Male | 5 | White | 34, 35, 36 | 34, 35, 36 | photo |
| Female | 7 | White | 39 | 34, 35, 36, 37, 39 | paper |
| Female | 5 | White | 38 | 34, 35, 36, 37, 38 | paper |

Table 4. Demographic information about the children who participated in the second day of data collection for Investigation 2 by participant number. Includes gender, age, race, other participants from the same party, other participants that may have influenced the participant, and media of house depictions collected. Participant 33’s mother mentioned that she had an autism spectrum disorder.
Appendix G: Drawings and Designs by Participant