Archetypes, Idealized Cognitive Models and Prototype Effect: A Discussion of Images and Cognition in Categorization

Abstract
Explores the usefulness of the idealized cognitive models (ICM) and related cognitive models in image organization. Discusses archetypes, ICMs and the prototypes visible in illustrations from historical children’s literature and considers the pitfalls and challenges inherent in selecting prototypes of images for representation in Web-based resources, children’s catalogs and database.

Introduction
According to Jung, archetypes exist in a substratum reminiscent of Plato’s world of forms that is common to all humanity, the “collective unconscious”. Individuals build experiences and distinctive psychological characteristics based on the innate, imperceptible forms that they are born with. These archetypes emerge as symbols and patterns of behavior. These tend to manifest in images, art, myths, religion, etc. Examining these facets of human existence enables humans to indirectly identify the inherited archetypes. “The archetype is a tendency to form such representations of a motif - representations that can vary a great deal in detail without losing their basic pattern ... They are indeed an instinctive trend" (Jung, 1978, 58). One of the key ideas for knowledge organization is that they “can vary a great deal in detail without losing their basic pattern,” indicating that any number of variations on the central, core archetype can and do exist, but they all relate to, or cluster around, the archetype.

Archetypal images have played a significant role in folklore and literary studies, especially the works of Joseph Campbell and Northrop Frye. Work in these areas demonstrates how tracing archetypal images works across cultures. Joseph Campbell’s most famous work, The Hero with a Thousand Faces, offers a prime example of just how broadly the archetypal figure of the hero reaches. The Byronic hero, also sometimes known as a romantic hero as described by Frye, with all of the accompanying flaws offers an example of a variation on the archetype and is thought of as a literary archetype. The mother is perhaps the most powerful and natural archetypal figure to consider.

“The collective unconscious is every human’s biological inheritance of archetypes which offer potentials for meaning and image formation. An archetype can never be fully manifest in the conscious mind, let alone a literary text. What critics are really searching for are archetypal images, which will inevitably be affected by culture even if they bear the numinous stamp of the antecedent archetype. Jungian critics tend not to make a rigid distinction between the unrealizable archetype and the culturally influenced derivative, the archetypal image” (Rowland, 1972, 3). The archetypal tradition claims that humans function more basically in terms of symbolic images than literal concepts, which means they will be influenced more on a fundamental level by images, even those who function on a highly conceptual level. Particularly in the digital and Web environment, archetypes and their accompanying symbolic images offer the potential for organizing information in a way more naturally and universally appealing than that offered by conceptual language.
This paper is less concerned with the numerous potential causes of archetypal images or the possibility of transcendental archetypes and their resemblance to Platonic forms that muddy the waters of Jungian thought than it is with the basic idea that these types of symbolic images constitute a knowledge structure that has the potential to shape how we organize knowledge in the Web environment. Whether or not someone believes in the “collective unconscious” and its power, archetypal images can be utilized as prototype images in knowledge organization to group concepts under a broader idea represented by the image. Images speak across cultures in a manner that language cannot and can also span generations and age groups. Visual memory also often operates much more effectively than conceptual or word memory. While the applications for digital image collections are readily apparent, this can also be used when designing information systems aimed at children or for designing cross-cultural or cross-linguistic information systems. Representative images are also used in browsing large image collections.

Prototypes resemble archetypal images. Viewing this from a cognitive perspective, the prototype effect occurs within an idealized cognitive model. Archetypes exist outside human comprehension, but the archetypal images reveal aspects of the archetype but with the effects of the cultural context. An idealized cognitive model (ICM) depends on context, on the conceptual maps of a society, and the prototypes thus generated cluster and relate to each other in our minds. Hence, the ICMs are seen as deeper structures and the prototypes as more of a surface-level phenomenon. Archetypes are somewhere outside of humans but shared by all humans on some unconscious level and might be thought of as the root source of idealized cognitive models while the social and cultural context determines all other aspects of the model. However, it is that vital crux where archetype becomes an ICM through the window of context that makes using images potentially as challenging as promising for the organization of information. This paper further discusses archetypes, ICMs and the prototypes visible in illustrations from historical children’s literature and considers the pitfalls and challenges inherent in selecting prototypes for representation in Web-based resources, children’s catalogs and databases.

Objectives
The objective is to explore the usefulness of ICM and related cognitive models to image organization and to examine the illustrations in children’s literature from this perspective.

Methodology
The historical children’s literature collection held by the M. E. Grenander Department of Special Collections and Archives at the University at Albany, State University of New York was used for this study. Fifty books that portray blacks in their illustrations were selected randomly from the collection. The illustrations were analyzed in terms of gender representation, activities engaged in, occupations, clothing, inter-relations portrayed and background scenes.

Cognitive Models
Cognition and categorization have a pivotal role in knowledge organization. How do we comprehend categories and what are the most relevant cognitive models that come to play in the process of understanding and category formation? The concept of metonymies, paragons, typical examples, and stereotypes are seen as ICMs that produce a prototype effect. A large part of our knowledge is organized based on typical examples, and we reason, draw inferences and create generalizations based on these examples. We tend to use the typical cases to generalize about the non-typical ones and not vice versa. This leads to what George Lakoff calls the prototype effect. Stereotypes are similar to typical examples but slightly different, as they tend to be oversimplified and often carry negative
connotations while paragons and ideals have made a positive impression to the degree that people will seek to emulate them. *Metonymies* are yet another source of prototype effect. A metonym is a part that takes the place of the whole; the part comes to substitute for or represent the whole (Iyer, 1995; Lakoff, 1987).

Lakoff’s classic example of “mother” presents a *cluster model* that entails a clustering of several representations/cognitive models of the mother idea is very relevant in this context; an additional level of prototype effect occurs in this category. The social stereotype of a housewife mother frequently stands for the mother category as a whole and defines the cultural expectations of what a mother is supposed to be. This is associated with caring for and raising children and additionally entails the nurturance model of the mother concept. Thereby it serves as a basis of judgment for other models of the mother category and produces another layer of prototype effect. The resulting clustering of cognitive models of the mother include the housewife model in the center with the various other models, such as adoptive mother, surrogate mother, working mother, foster mother, donor mothers etc., representing the birth model, genealogical model, marital model and so on, converging and forming a composite mother category and a *composite prototype* with attributes from the various models. The other models are comprehended in contrast with the nurturance model, and this he calls as the radial structure and the presence of such a structure within a category can be a the source of prototype effects (Iyer, 1995, 51-52; Lakoff, 1987, 80-84).

Theoretically speaking, this has no place in the classical theory of categorization in which all members of a category possess the necessary and sufficient conditions to belong to a category. Stereotypes have no place in such an approach to conceptual structuring. However, in reality, stereotypes do have a significant role in characterizing concepts, and they define the normal expectation, and this plays an important role in cognition, like in the mother example where the other models of mother, such as working mothers, are defined in contrast to the nurturance models. Thus we need to take cognizance of metonymies, stereotypes, typical examples, and paragons and ideals that shape and influence our thinking. This is especially true when we are organizing collections, both texts and images, wherein it is often necessary to choose representative examples for categories, such as in the choice of thumbnails used for browsing image collections, when representing categories of information for children or endeavoring to create cross-linguistic collections. In this paper the characterization of blacks in historical children’s literature is examined and discussed from the cognitive point of view as a means of understanding the possibilities and important variables to consider when selecting prototype images.

**Observation and Discussion of the Illustrations**

Gender inequity was evident; boys were represented more frequently than girls; Men were shown as working very hard in the plantations and on their own farms. In such illustrations women were in the background and girls were infrequently represented and, even if they were, they were seen in the background. LaDow in the content analysis study of randomly selected picture books from the Mishawaka, Indiana Public Library also observed that in the illustrations males appeared four times more than the females (LaDow, 1976). Women were shown with a matronly bearing, engaged in preparing a meal, often coaxing and disciplining a child at the dining table. Some illustrations represented them outdoors with a basket full of fruits that they had picked on the farm. Gender stereotyping is evident in the illustrations. Children were seen playing, chatting, sitting on the farm fence, riding in a tyre, dancing and helping the adults in their outdoor activities and work. They appear as being very joyful in the outdoor settings. Most often they are seen with their pets, especially puppies. The books set in the south especially portray plantations with adults and children drawing a wagon full of produce. Stereotyping with reference to gender,
As regards archetypes, those of caregiver, mother, outsider, hero, friend and the master-servant dynamic seem to be present in the illustrations. The archetypes observed in the illustrations overlap with the findings of Beth Jones Ricks in her study of Newbery children’s literature. Ricks identified 12 archetypes among the female characters across all genres, thereby demonstrating that archetypes are universal and are experienced by all regardless of race, religion, time period and gender. Young female characters are friends, caregivers, orphans, innocents, and seekers; warriors and fools are found in both young and old characters; older women who are in charge are presented as evil, tyrannical and untrustworthy (Ricks, 2004). Specific instances are discussed in the following section.

Challenges in Choosing Image Prototypes

When considering the possibility of using prototype images for databases or websites for children, for example, many challenges exist in choosing images. The encroaching threat to ICMs and prototypes are some literary archetypes, such as the wicked stepmother, and stereotypes, which bear resemblances to these means of classifying knowledge, but include characteristics, usually negative, not necessary for organization into conceptual clusters. Children’s literature might seem an ideal location from which to draw prototype images for child-oriented databases and Web resources, but examining illustrations from historical children’s literature demonstrates the danger for stereotypical representations to leak into illustrations. Looking at children’s literature related to an ethnic group frequently stereotyped over an extended period of time in the United States reveals the challenges in choosing prototype images that do not bear unnecessary “baggage” while standing in for an ICM. Perhaps the most eerily representative image of what a prototype should avoid comes from a children’s book simply titled George Washington by Ingri and Edgar Parin D’Aulaire (copyright 1936, published 1940). The illustration depicts the wedding ball of George and Martha Washington through a window with black children and a dog in the foreground peering in on a lavish scene in which they have no place. A prototype should leave no one feeling like an outsider looking in through glass, though this may be seen as reminiscent of the outsider archetype.

The majority of the books examined used hand-drawn illustrations to depict characters and events in the books, though two books relied on photographs. One of the books using photographs instead of illustrations is Tobe by Stella Gentry Sharpe with photographs by Charles Farrell, published in 1939. Like many of the illustrated books, this book depicts characters engaged in farming activities, but the differences in details between illustrations and photographs are notable. The photographs show the family as it actually is without the details that make most of the illustrated characters into caricatures that reflect negative stereotypes as is the case with a book like Little Brown Koko’s Pets and Playmates by Blanche Seale Hunt (1959), which also takes place on a farm, and has illustrations of all its black characters with large red lips. The mother from Tobe is an average-sized woman sewing and listening to the radio as she sits with her husband or shown walking into church at the head of her family; the mother from Koko is drawn large, wearing an apron and head cloth, and in the kitchen cooking or in a rocking chair knitting. Both of these books show a mother figure, but they depict the mother figure in distinctly different ways. The photograph of Tobe’s mother sewing compared with the most compositionally similar image of Koko’s mother knitting emphasizes the black mother caricature of Koko’s mother. Other mother or nanny figures drawn in similar fashions appear in other Afro-American children’s literature. Tobe’s mother from the photographs might be considered as representative of a cluster model ICM, portrayed as possessing more facets and without the negative elements of a stereotyped caricature. This demonstrates the necessity of choosing prototype images with care because something as seemingly innocent as a woman racial features and occupational roles, was observed. The surroundings are usually modest log cabin homes.
sowing/knitting can have so much more meaning because of the stereotypes that exist in a society’s conceptual map at any given time and bleed so easily into illustrations.

Attempting to classify activities using a prototype image drawn from children’s literature might also prove challenging. The children’s literature examined typically takes place on a farm or shows a plantation with black men harvesting crops. Even a category like “occupation” can be complicated by an image of black people as laborers. The other book illustrated through the use of photographs once again proves the best counter-example to the majority of the children’s literature available. *My Dog Rinty* by Ellen Tarry and Marie Hall Ets (1946) is set in Harlem, New York and shows black characters in an urban setting. Compared to books set in the countryside, there is a well-dressed newspaper editor in *Rinty* and at one point the father to the family, also wearing a suit, reads to his children from a library book. The mother is shown in the kitchen cooking and accepting a note from her son, a neighbor is shown bathing her baby, and other women in the book hold professional positions as store clerks, nurses or receptionists. When choosing a prototype image for “occupation”, should it be a man or a woman depicted? What ethnicity should they be? What type of occupation would avoid issues of bias? In the books described above, there are people in a variety of occupations but which gender in which occupation would be most neutral?

The children’s literature also allows for consideration of paragons. A folk hero is a type of paragon, and John Henry is the prime example of a black folk hero. *John Henry and the Double-Jointed Steam Drill* by Irwin Shapiro (1945) is a children’s book in the collection about this famous folk hero. However, the visual depictions of Henry and other black characters in the book convey a different impression. The muscles are over-emphasized, the limbs and fingers too long, the eyes often blank, the lips too large, and the characters frequently hunched over in an awkward manner. Illustrating John Henry as larger-than-life would hold with the folk hero tradition, but there is a wide-variety of other details in the illustrations that make this depiction of a famous folk hero troubling. While it might be ascribed to the illustrator’s individual style, stereotypes of black men could play a role in the skewing of the images in this children’s book. Who chooses to create an image and how they feel about the subject of that image can impact what a viewer experiences regardless of how positive the subject of an image is might be. Because of the inherently superlative aspects of a paragon or ideal it would seem easy to choose the resultant prototype image to represent a category, but, as this example shows, a great deal can be read from or into an image that may undermine its status as prototype.

**Conclusion**

Because prototype images stand in for a group of related concepts, extreme care must be taken in choosing them. A word or phrase can have multiple connotations but ultimately lacks the details of an image that can have far more meanings and more far-reaching consequences. When considering databases or catalogs geared toward children, the psychological effects that images can have need to be taken into consideration. A great deal of work has been done on the impact of stereotypes in US children’s literature on a child’s psyche, particularly for children from under-represented groups (Roethler, 1998). In terms of cross-linguistic and cross-cultural efforts in categorization, such as might be undertaken on the Web, the vastly different contexts make choosing neutral images challenging. The conceptual maps of societies differ from each other, so while images might circumvent issues of language, they can result in vastly different interpretations depending on the culture encountering the image. Even over time conceptual maps change, which can impact archetypal images even if at the root there lays an unchanging ideal. A prime example of this would be the literary archetype of the hero. The hero of Greek mythology is not the
knight of Arthurian legend or the misanthropic hero of Shakespeare and Byron or the American folk hero or the super hero of comic books in the United States in spite of all of these heroes originating in western European cultural traditions. No matter how information professionals engage with the organization of knowledge, whether in libraries or on the Web, the fluidity of human experience requires constant change in approach and methods along with a persistent awareness that one person’s interpretation will not be another’s.

Moving forward in information organization for the Web, children’s databases and other categorization methods that might benefit from prototype images, there are several important factors to keep in mind from the discussion above. As explored extensively in this paper, there are dangers of caricature or negative stereotyping appearing in images, but this should not prevent the use of prototype images. There are ways to approach this and minimize excluding or marginalizing the people encountering prototype images. One way would be to use a variety of prototype images, particularly those that result from the clustering effect described by Lakoff. An image that captures the multi-faceted nature of a category while still representing that category would acknowledge the wide-range of cognitive models that converge around a concept. A selection of images, either rotating through or as a small collage, could also be used. Instead of the category of “occupation” being represented by a single image of a CEO or a doctor, images of a farmer, a mechanic, a musician, an artist, etc. could be provided. It is likely that broad categories like this will be most difficult to represent with an unbiased prototype image. Narrower categories run more of a risk of stereotyping rather than marginalizing or excluding a person or group of people in a prototype image. Having a large and diverse group of people involved in image selection would also help to ensure that the most neutral prototype images are chosen.

Regardless of the method chosen, the prototype image that results from an ICM must always be acknowledged to arise from a particular social and cultural context and steps taken to recognize elements of an image that might be considered negative, exclusionary or marginalizing.

References