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"SECOND TO THE RIGHT, AND STRAIGHT ON TILL MORNING" (BARRIE)

GEOSPATIAL VISUALIZATION AND CHILDREN'S LITERATURE

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> "They carried their mugs and the kettle and the tin plate piled with thick slabs of brown bread and marmalade to the edge of the cliff. The island lay about a mile away towards the lower, southern end of the lake, its trees reflected in the glassy water. They had been looking at it for ten days, but the telegram had made it much more real than ever it had been before. Looking down from Titty's Peak in the evening of the day on which they had come to the farmhouse where their mother had taken lodgings, they had seen the lake like an inland sea. And on the lake they had seen the island. All four of them had been filled with the same idea. It was not just an island. It was the island, waiting for them." (Ransome)

In discussing geospatial visualization within children's literature it is important to clarify at this juncture that the intention herein is more than evaluating the maps included on the inside covers of kids' books or the various treasure maps included therein of countless protagonists, pirates and Pooh Bears. For the purposes of this exploration geospatial visualization is more than the illustrated maps included on and in said books, but also the mental maps created (if not physically visualized) by the readers themselves in the process of reading, absorbing and participating in the content, plot and lives of the characters and books themselves. It is equally important to state at this juncture that this evaluation will limit itself to children's literature (whose intent is to entertain and enlighten) and not delve into either reference or textbooks written for children (whose intent is solely to instruct).

Once upon a time (and on countless occasions since) 'X' has marked the spot. Whether it was for the fabled treasure of the dastardly brigand Captain Flint (Figure 1) and the subsequent adventures of a young Jim Hawkins or for a bear that had secreted and subsequently misplaced a honey pot, the map was, is, and can be an addition or device afforded to the reader if so desired (Stevenson; Milne). Degrees of accuracy and authenticity can, have, and do vary wildly, and to

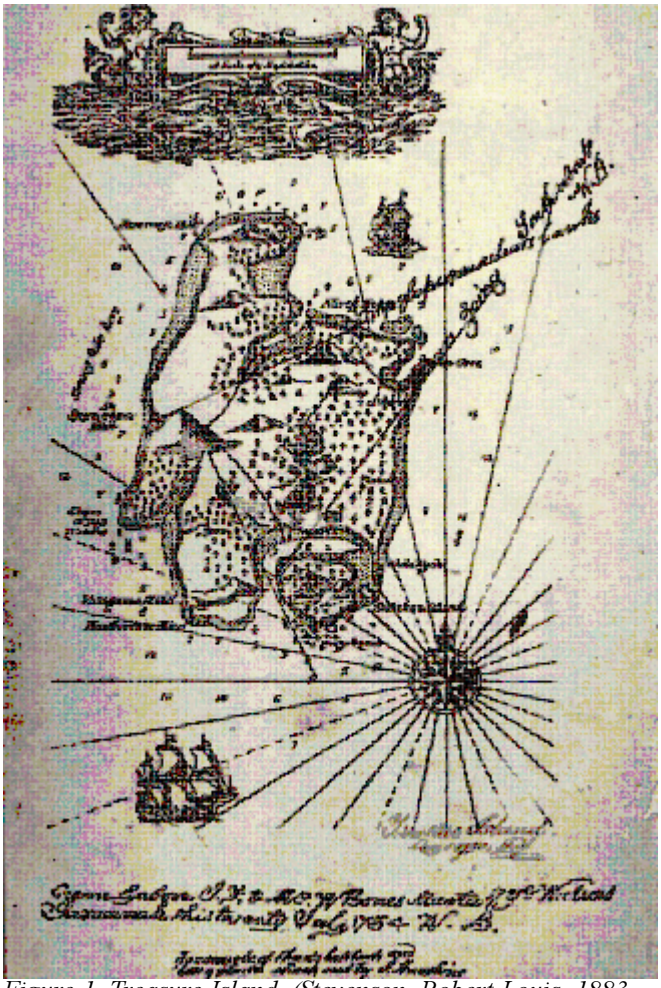


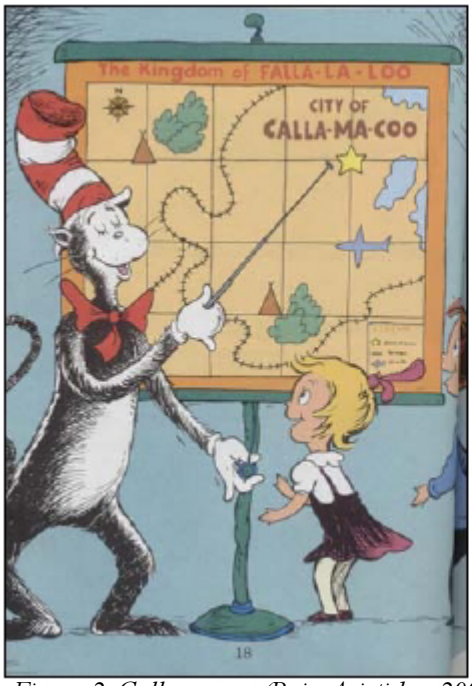
Figure 1. Treasure Island. (Stevenson, Robert Louis. 1883. In Treasure Island. By Robert Louis Stevenson. New York: Airmond Books, 1962.)

this equation we must add the levels of understanding that children themselves bring to any such document. While some educators claim that "small children relate to pictorial maps, because they identify more with the familiar than with the abstract… relative position is more meaningful than relative size… [and] direction is more important than scale" (Rieke) and that this is due to issues of reification, maintaining scale, understanding perspective, identification out of context, and inconsistency of classification, other studies indicate that children's ability to interpret abstract symbols is greater than previously believed and that "untaught mapping abilities" are recognizable in children as young as four (Michaelidou, Filippakopoulou, and Nakos).

At its most basic "a map is a picture of someplace from above. It's like flying over that spot in an airplane… we can make a map of anyplace—like a room, a yard, or a neighborhood" (Leedy). It is on this scale that educators suggest broaching maps, symbols, legends, directions, and dimensions. "Close your eyes and imagine your room. Your mind probably makes a picture just like the one you'd see if your eyes were open. But how would the room look to you if you were a spider on the ceiling?" (Wolfman). Beyond this, "in the primary grades, maps are useful tools to help the young reader put stories into perspective and to develop a sense of place" (Gundy), be it the purely fictional distance Mrs. Boot and the children would have to walk to discover why the old steam train is blowing its whistle and the route they, Wooly and the other sheep would subsequently travel back by train and illustrated on flyleaves, or the potentially real map created by Lisa to show all the locations of Penny's Treasure; including her chew bone, squeaky toy, and a missing shoe (Amery and Cartright; Leedy).

Above and beyond the concept of bird's-eye view, we must also consider the content of any given map. While Compass Roses, Pictorial Point Symbol Shapes, Topographical Lines, and an understanding of scale may have become second nature to us as adults, they are in fact abstract concepts which must be taught. Furthermore, geographic and cartographic instruction requires more than offering glorified colouring books with an outline of insert Province here (McKay), and a disappointing pastiche of Dr. Seuss (Figure 2).

So what can and do children understand, and how should we instruct them? In a 1996 as part of a study by Dr. Jacqueline Anderson (an Associate Professor of Geography at Concordia), children were asked "what they thought a map was, what maps show, their use, and what maps they had seen" (Anderson). While the majority of Grade 1 students recognized maps within their environment, and



Sometimes maps use pictures
to show where things are.
A Capital city is
marked with a star.

A tent shows a campsite.
Tracks show where the train is.
To get to the airport,
just find out where a plane is (Rabe).

Figure 2. Callamacoo. (Ruiz, Aristides. 2002. In There's a Map on My Lap! By Tish Rabe. New York: Random House, 2002.)

further identified numerous individuals and professions who would use a map, few included themselves as map users (Anderson). When looking at the specific problems of cartographic comprehension, assumptions about pictorial versus abstract symbols were both strengthened and challenged. While pictorial symbols were often recognized "because it looks like that" other factors worked against consistent recognition (Anderson). These factors have been identified by Dr. Anderson as Problems of Scale, Reification, Identification of Elements out of Context, Inconsistency of Classification, Perspective and Scale, and Colour. Adding to this is the common usage of the presentation of symbols with multiple variables, therefore compounding problems for young map readers. Using Stephen Cartwright's flyleaf map included within Heather Amery's book *Usborne Farmyard Tales: Wooly Stops the Train* (Figure 3) which at first glance appears to be a highly accessible representation we have in fact numerous conceptual problems being presented to young readers:

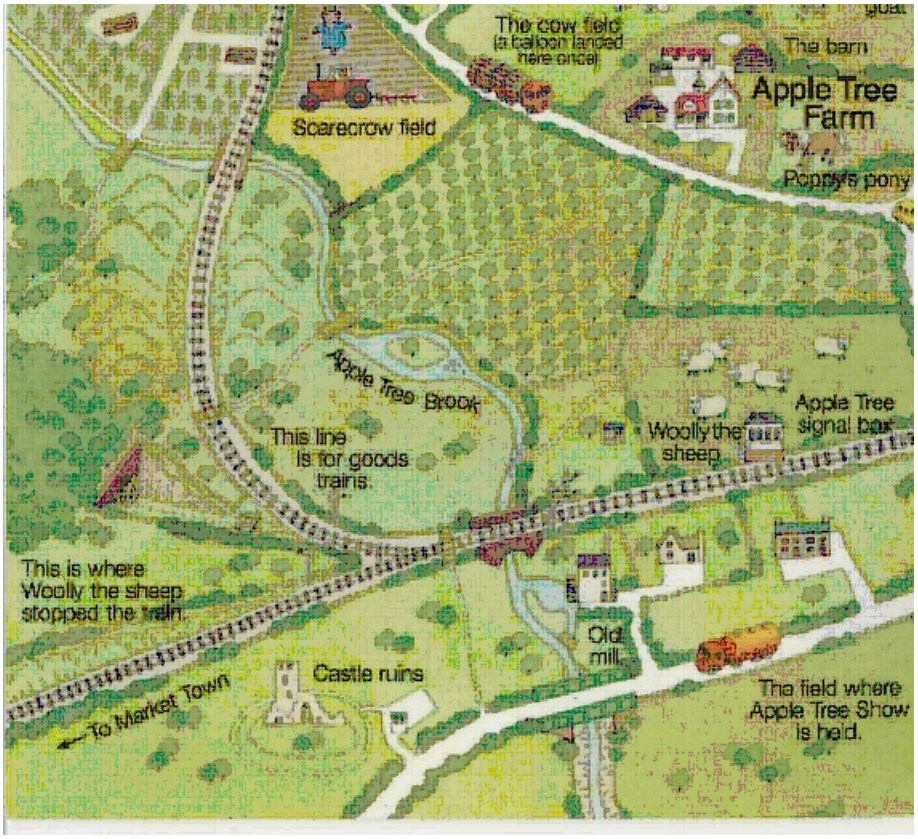


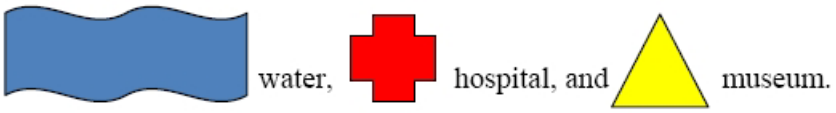
Figure 3. Apple Tree Farm and environs (detail). (Cartwright, Stephen. 1999. In Usborne Farmyard Tales: Wooly Stops the Train. By Heather Amery. London: Usborne Publishing, 1999.)

• Wooly and his fellow sheep are too large to fit within the train (not shown here),
• the roads are represented as being white and therefore could be believed to be so,
• the brook and pond (not shown here) are represented in different colours,
• the train tracks in context with the train are identifiable as such, but juxtaposed with the sheep they could easily be misinterpreted as a fence,
• elements are presented horizontally (buildings and the tractor), vertically (the water, roads, and train tracks), and obliquely (animals, and all vehicles except the tractor),
• the lack of consistency of symbols (a variety of symbols represent bridges),
• the juxtaposition and even amalgamation of pictorial and abstract symbols (6 sheep equals 6 sheep, yet trees are represented generically as either coniferous or deciduous, and also as orchards, dense woods and individual trees.

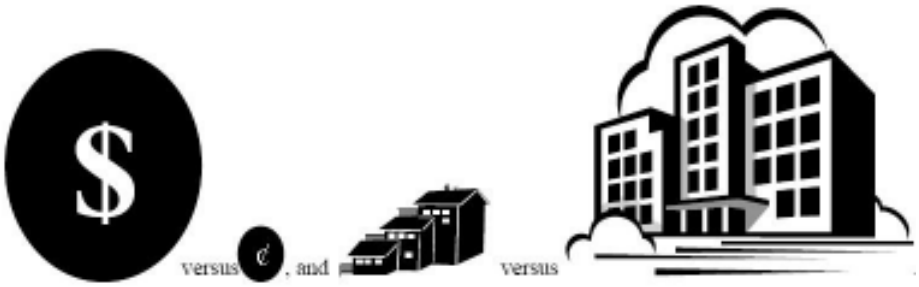
While these examples may seem hypercritical, all of the above points reduced the accuracy of interpretation and comprehension by young map readers and could have been avoided (Anderson). Having said this, some steps have been taken by Cartwright to accommodate these conceptual problems (namely the labeling of places, individuals, and events, and even the choice of font scale and intensity), although not all elements have received such treatment and several vital elements (namely title, key, compass rose, and scale) have been excluded.

While arguments can be made for the necessity of inclusion of such elements at this age level and on a book by book case, evidence presented by Michaelidou, Filippakopoulou and Nakos in their article "Children's Choice of Visual Variables for Thematic Maps" goes far to illustrate that even at a very young age children are capable of understanding abstract visualizations. In a study of school-aged children ages 6 to 9 Michaelidou,

Filippakopoulou and Nakos evaluated children's comprehension of both ordinal and nominal representations by allowing them to choose from within a set of symbols to illustrate various buildings within their sphere of knowledge such as a hospital, apartment buildings, a church, a fire station, a police station, a museum, and a school. Placing them within an electronic map consisting of land, water and roads, the children selected which symbol they felt best represented the building. While the pictorial symbols of a red cross, fire truck, and police car presented no great surprises to equal a hospital, fire and police stations respectively, the abstract symbols afforded independently and varied by either shape, hue, or scale is illuminating. While experiential elements and colour conventions can influence a child's worldview and understanding such as red for fire truck therefore fire station, a triangle because "it reminds me [of] the roof of the museums", or "I like museums and my mother likes yellow, so I choose yellow":



In representing nominal data "the majority of the participants associated red hue with importance, bigger size, and more quantity or the upper class, whereas quite often they connected green hue with lower class, and yellow with middle class" (Michaelidou, Filippakopoulou and Nakos). With less subjective ordinal data, the children associated the size of a circle with quantity of rent paid, and similarly the density of population:



Furthermore, "most children set up levels of relative importance in both qualitative and quantitative data and tried to achieve visual hierarchy not only by applying size and value but also by applying the visual variables of hue and shape":

• "Dark color matches to more quantity so I choose it for too many inhabitants."
• "When you need a hospital you have a great need for it."
(Michaelidou, Filippakopoulou and Nakos).

This said, abstract variables need not be excluded from children's maps, they must however be utilized in a consistent manner, in consort with children's understanding of the variables, and not as multiple abstract variables simultaneously.

"Differences between attributes of here and there" (Gould) are at the heart of all maps, be they representational, abstract, thematic or mental. To this end we must return to those elements all too often glossed over or excluded entirely by children's illustrators when creating 'maps'. While it can be argued that nothing is lost in not including a title, key, compass rose, and scale in a map such as the one included within *Usborne Farmyard Tales: Wooly Stops the Train* it is a slippery slope that blurs the distinction between map and illustration. Consider if you will the 'map' represented within the narrative of "Lucy and the Sea Monster" in *The Usborne Book of Young Puzzle Adventures* (Figure 4). Although there is little doubt that it is meant to represent a map, there is little evidence to support that it actually is one. But, why does this matter? At the core of any map is its intended purpose. In this case the illustration in question is included within the body of the work so the reader can help Lucy rescue Tom Cat who is stranded on Blue Bird Island. Upon closer examination of the landmass circled with a solid line we find the sole blue bird included in the illustration. We as the reader are therefore meant to conclude that having located our little blue 'Waldo' that we have identified Blue Bird Island. This is all well and good except that at the oblique angle it is represented, lacking a key, textual information or any other discerning tool such as grid lines and coordinates the area included within the dotted lines could just as easily be not three islands but one, and Tom Cat could be anywhere within the larger search radius.

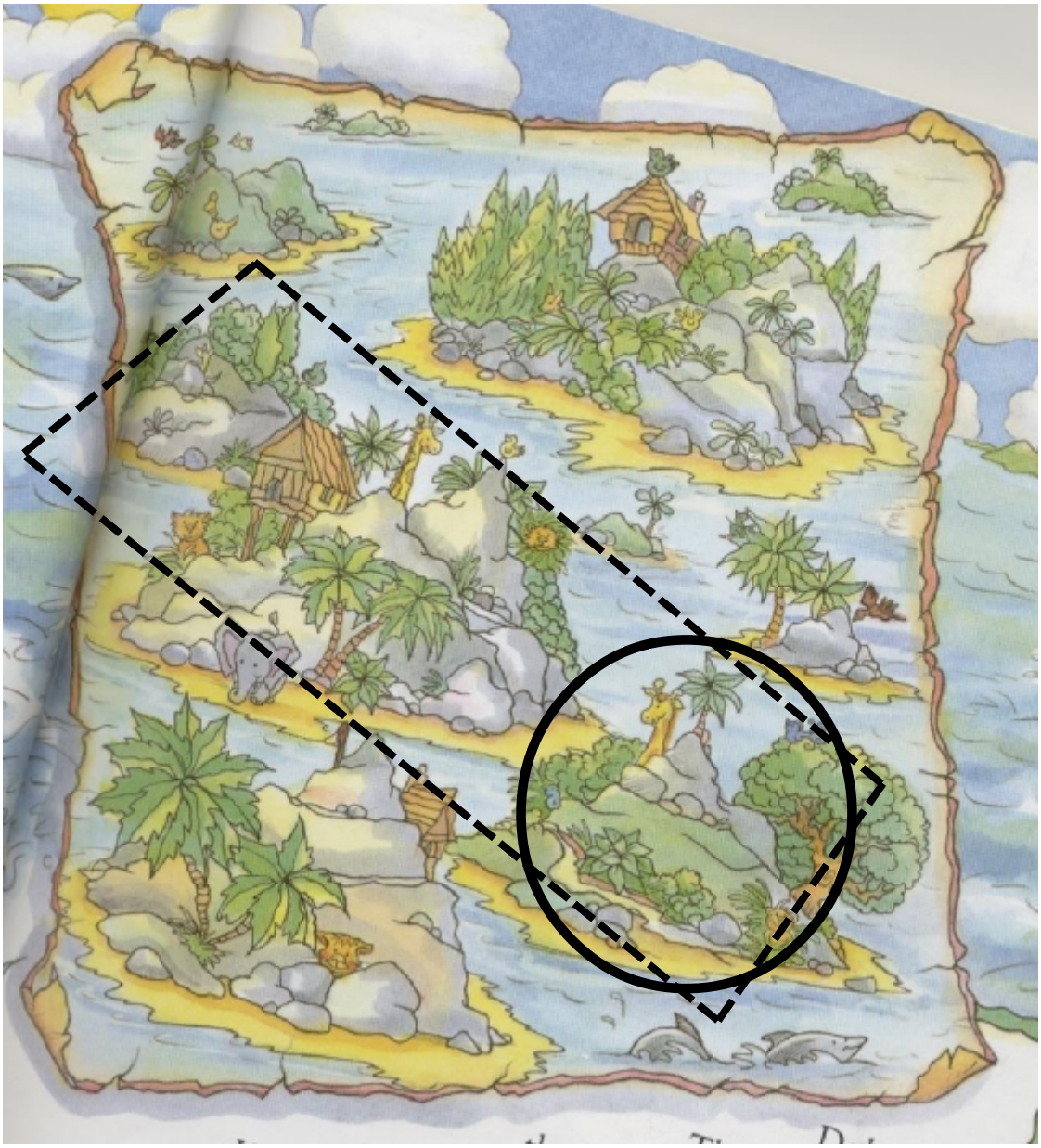


Figure 4. Blue Bird Island and environs. (Church, Caroline. 1995. In The Usborne Book of Young Puzzle Adventures. By Karen Dolby. London: Usborne Publishing, 1995.)

This illustration has therefore failed to serve in its' only function as a map. Sadly this is not an isolated example. Even within books which purport to instruct in cartography for children such as *As the Crow Flies: A First Book of Maps* and *The Once Upon a Time Map Book,* the prevalence of oblique presentation to maintain a pictorial toehold rather than cartographic in nature is based on an unsupported understanding of a child's cartography knowledge and capabilities, and does a great disservice to the young reader. This said paying lip service to cartography by including overly ornate compass roses, irrelevant grid lines, and ambiguous elements (as in *The Once Upon a Time Map Book*) for the sake of inclusion is nothing more than visual clutter and antithetical to any functional map. Having said this, successful minimalist maps can be produced if created with consideration to purpose. Such is the map of an untitled campsite taken from *My World & Globe* (Figure 5). Although crude and lacking numerous elements often vital to a successful map, it manages to provide clear distinctions and relationships between the various elements included.

Although the purposes of several of the books discussed here so far have been instructional regarding the comprehension and creation of

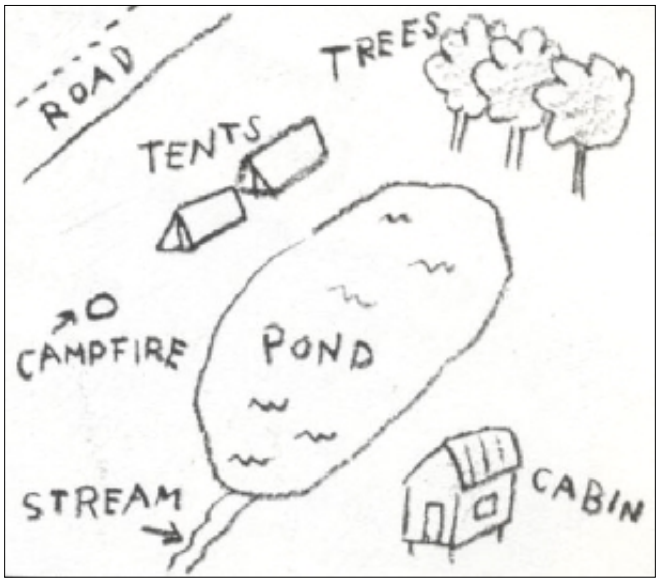


Figure 5. The Campsite. (Meisel, Paul. 1991. In My World & Globe. By Ira Wolfman. New York: Workman Publishing, 1991.)

corporeal maps, we need not limit ourselves to tangible visualizations. Considering that children aged 5 to 10 can create "cognitive maps of familiar spatial areas [that] are quite accurate" (Herman), and that "in the primary grades, maps are useful tools to help the young reader put stories into perspective and develop a sense of place, [and that] they are particularly helpful when the story describes a foreign of imaginary land" (Gandy), consider the potential value of cognitive maps of imagined lands. While the accuracy of cognitive maps among children is "built upon direct observational and concrete experiences, a framework that grows from interactions with people and their environment, a structure that takes form as children learn directly observable events and concrete objects can be represented with special symbols that have little or no resemblance to the real thing" (Maxim), there are no such requirements or limitations placed on literary-inspired cognitive maps. Yet the skills and understanding afforded them by their geospatial knowledge will seamlessly translate.

Remember, after bedtime but just before lights out, the stories, the stories about Peter and Tink, about Wendy, John and Michael, about pirates, treasure, a ticking crocodile, and The Lost Boys, about Hook, never forget about Hook! Remember? You found your way back didn't you, "second to the right, and straight on till morning. That, Peter had told Wendy [and us], was the way to Neverland" (Barrie). Can you see it, Neverland, Marooner's Rock, the Mermaids' Lagoon, and the path to the Wendy House? Can you? There it is (Figure 6). Would it surprise you to know that Barrie included no map? Yet there it is, "perfectly conspicuous in the right-hand corner" of your mind where not even Wendy can reach it (Barrie). You made that map; with the help of Mr. Barrie of course. Maps can guide, educate and instruct. They can enlighten and inspire. Maps help us understand our world in ways too countless to comprehend, and yet they are accessible to all if created with the patron truly in mind.

> "There's one thing we must do now," said John. "And that's make our chart. The Amazons will be here to-morrow, and they've got their own names for everywhere."
> "And we'll hang it up on the schoolroom wall to show where we've been," said Susan.

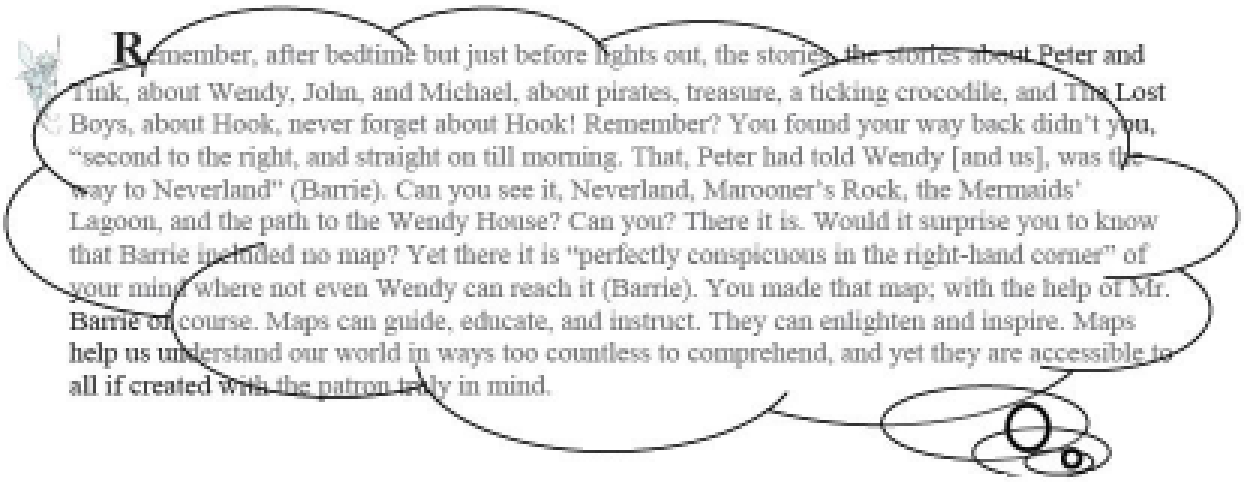


Figure 6. Mental Map of Neverland. (Ripley, James. 2008. In Peter and Wendy. By J.M. Barrie. London: Hodder and Stoughton, 1911.)

"And plan more exploring," said Titty.
"Will it have colours?" said Roger.
"They leave the land white on charts. It doesn't count, except where you can see it from a ship. And even then only bits of it count."
"John drew a tiny house with trees and three little figures, a quarter of an inch high, for the natives, mother, Vicky and nurse. Then, in Houseboat Bay, he wrote its name and made a picture of the houseboat. Then again there was Dixon's farm, with a little figure and a cow, to show the produce of the country."
"Put in the savages with their wigwam and their snake," said Titty, and a snake, a three-cornered black mark for the hut, and a fire, showed the country of the charcoal-burners."
"Then a fish was drawn in Shark Bay, where they went perch-fishing. Then…" (Ransome)

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