

# Learners, Computers & the Storytelling Habit



Barbara Barry, Ph.D.  
OLPC Computational Story Consultant  
Postdoctoral Associate, MIT Media Lab

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# What is a Story: Many definitions!

Beginnings + Middles + Ends  
(Aristotle, 'Poetics')

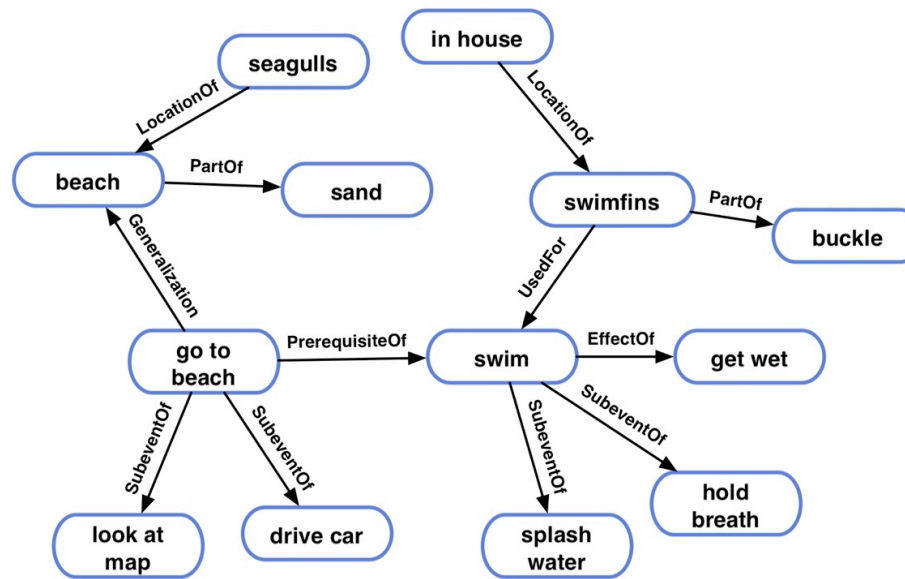
Fabula & Sujet  
(Vladimir Propp, 'Morphology of the Folktale')

Creating a coherent life narrative  
(Kearney, 'On Stories')

Cognitive tool kits and Objects of social power  
(Marie Laurie Ryan, 'On Narrative')

Humans and computers as predictive and reflective storytellers  
(Story Generation in Artificial Intelligence)

# Stories by People and Computers: Commonsense Computing




**Teaching computers the stuff we all know**

Please tell your friends about us! Our url is <http://www.openmind.org/commonsense>

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Search Results for **water**

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Plankton are tiny organisms that float in the seas and other bodies of water  
The pond skater is a bug that walks on water  
The solid form of water is ice  
A river is a large stream of water  
Amphibians are animals that live in the water during their early life, but usually live on land as adults  
People need water to live  
The beluga is a small, white, toothed whale that lives mostly in cold, arctic waters  
A sea is a very large body of salt water  
Water is the liquid form of ice  
Boats float in the water  
Water is wet  
Lemonade is a drink made from water, lemon juice, and sugar

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Results Page: 1

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# 3 Storytelling Practices

- \* Documenting Life
- \* Documenting Learning
- \* Stories One Degree from Reality

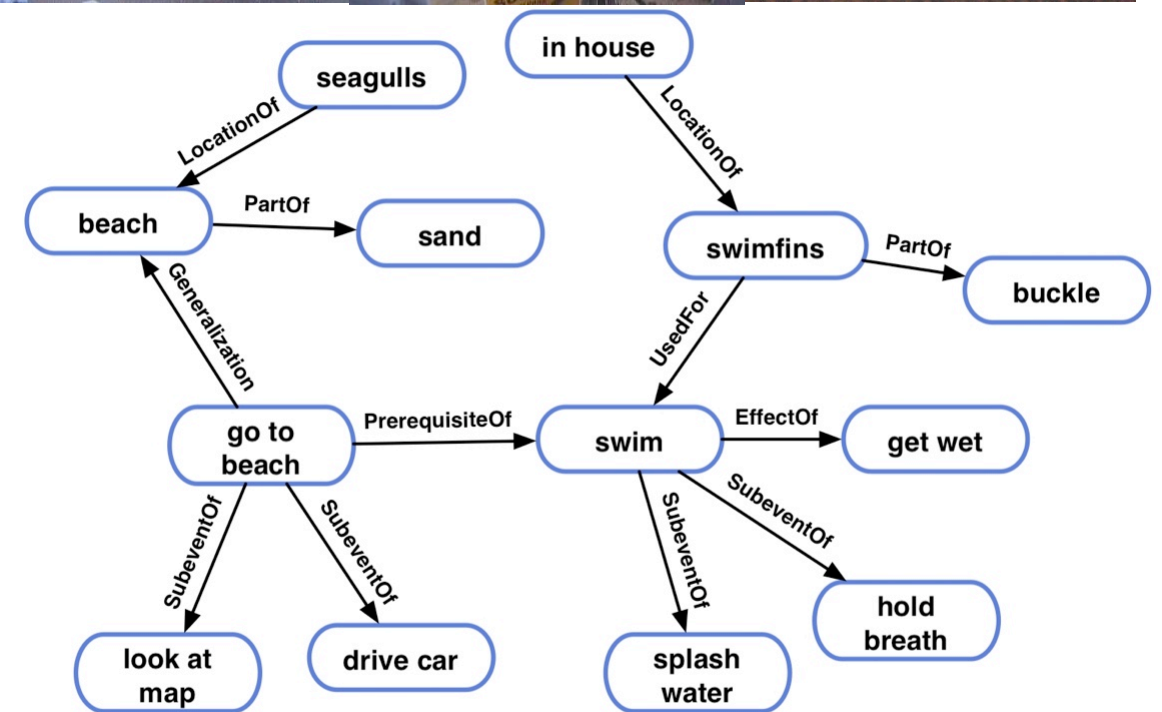


# Documenting Life

The practice:

- A question you want to ask? A hypothesis?
- Models and examples to inform your plan
- The role of the documentarians
- Finding an opportunity to observe
- Having the resources to collect data
- Reflecting in the moment
- Respecting the subject
- Discovery and flexibility during making
- Finding an audience and sharing the story

# Mindful Documentary



- Storytelling while standing on the ideas & observations of others during making.
- Practicing observation through the lens of others' experiences
- Modeling human storytelling in machines - How are we similar or different?!



# Documenting Life : Why Computation Matters



# Documenting Life : Why Computation Matters

- People are not recording devices: people think, remember, and learn.
- If you record your whole life, you need another lifetime to look at it
- Looking at our pasts and imagining our futures in new ways
- Sharing (or not) in real-time
- Computation in the moment of capture
- When and where is a voice most effective? The placement of documentary evidence in the world at the most impacting time and in the most impacting place



# Documenting Learning: Challenges and Opportunities

- Participatory List from Workshop Attendees!
- Documenting the External and the Internal Experience of Learners
- Videos of Children Learning (subject)
  - > Children Explaining Learning to Others (creators)
- Practices
  - Creating an ontology of learning moments
  - Anticipating learning moments (frameworks for expectation)
  - Explanation patterns for learning moments
  - Tagging the world with media learning moments
  - Accommodating different learning styles

# Documenting Learning

JULY 2003

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13	14	15	16	17	18	19
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27	28	29	30	31		



National Dance Institute . Future of Learning Group . Papert.org

Monday 21, @ 11:27 AM

### Eric's Intro to the Sound Program

On Monday, before the kids split off into their groups, Eric gives them a little presentation of the sound possibilities. He explains how to use the program and what options are available to them.



Posted by mara    Comments: (0)

Monday 21, @ 11:24 AM

### David Helps Louis

Louis has been working hard on creating his "Pac Man Monster" and his "destroy sound," but he asks David for help in creating a background for his animation piece.

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Original Reference:  
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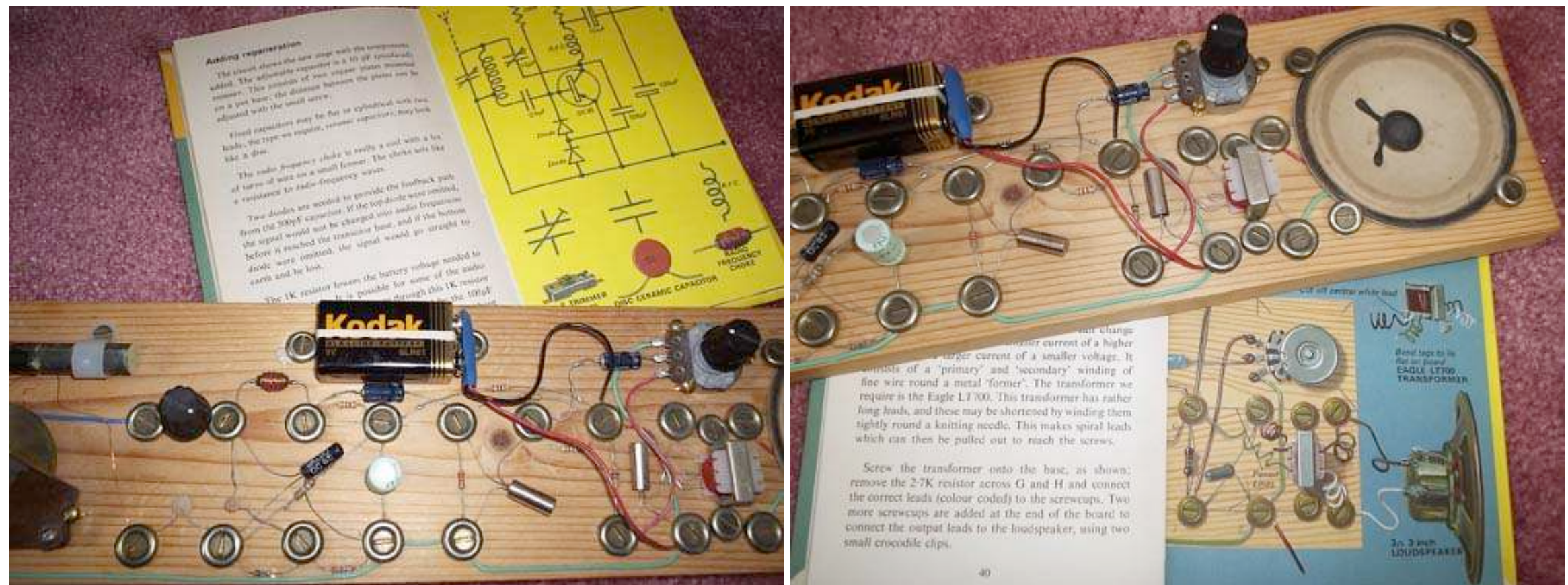
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  - Tagging the world with media learning moments
  - Accommodating different learning styles
- Supporting learners across ages, classes, and cultures
  - When does age matter or not in understanding?
  - How do learning strategies translate?
  - When is it best to collaborate vs. work on one's own



# Stories One Degree from Reality

## Circuits, Ladybirds, and around the World (2008)



Original Image Reference:  
[www.arar93.dsl.pipex.com/.../trfradios02.html](http://www.arar93.dsl.pipex.com/.../trfradios02.html)



# One Degree from Reality: Why Computation Matters

“A child is given a collection of beads of different colors, say green, red, blue, and black, and is asked to construct all the possible pairs of colors: green-blue, red-green, green-black, and then the triplets and so on. Just as children do not acquire conservation until the seventh year, children around the world are unable to carry out combinatorial tasks before their eleventh year or twelfth year. Indeed, many adults who are “intelligent” enough to live normal lives never acquire this ability.

From a computational point of view, the most salient ingredients of the combinatorial task are related to the idea of procedure - systematicity and debugging. A successful solution consists of the following some such procedure:

1. Separate the beads into colors
2. Choose a color A as color 1.
3. Form all the pairs that can be formed with color 1.
4. Choose color 2
5. Form all the pairs that can be formed with color 2.
6. Go back and remove the duplicates

From Mindstorms by Papert (p. 175-176).

Combinatorics and Story...from beads to phrases

# One Degree from Reality: Tracking story patterns (in text and in life) & recombining elements

Story elements as puzzle pieces:

*Event + Event + Event + Event*

I saw a bird + I went to school + I ate a cookie  
(text, audio, or video)

*Event + Event + Explanation*

I saw a bird + I chased the bird + because I wanted to catch it  
I chased the bird + I saw a bird + because I wanted to catch it  
ORDER Dependence!

*? + ? + ? + ? = story*

I went for a walk - I broke my foot - My friend needed a ride - There are sharks in the ocean - We ate rice this morning - The book fell off the table - My friend was sad - His car broke down - I like rice - The car ran out of gas - The sky is blue (sometimes) - If a person rides in a car they are in a different place after the ride than before - My friend was laughing - We saw a funny looking dog - ..... 100,000 statements.

Using human and computational commonsense to find the possible stories in the collection of puzzle pieces.

# Finale :

## Benefits of Cultivating the Storytelling Habit

1. Reflecting- Individual, Neighborhood, Global Community
2. Communicating - I:I , I:many
3. Learning concepts and practices by simulation in stories
4. Acknowledging and developing creativity
5. \*Building a strong personal toolkit for thinking, feeling, acting in the world!\*



# 3 Storytelling Exercises on the XO

- \* Documenting Life
  - Interview starting with breakfast
  - Keep track of your free form questions
- \* Documenting Learning
  - Over the course of today document one learning moment (internal or external). Be sure to include the moment and the explanation!
- \* Stories One Degree from Reality
  - Creating a new story by identifying links between your interview story and a folklore or fiction story you find on the web

Thank you!

<http://www.media.mit.edu/~barbara>  
[barbara@media.mit.edu](mailto:barbara@media.mit.edu)