

# Developing Systems Understanding Through Children's Stories



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## A Question:

*Are we, particularly in western cultures  
actually "set up" by the structure of our stories,  
habituated at an early age to look for linear  
cause and effect relationships?*

## Typical Story Elements

- The initial event, e.g. the event that spurs the protagonist into action and sets up the problem.
- A simple reaction, e.g., an emotional response to the initial event.
- The setting of a goal, e.g., a decision to do something about the problem.
- The attempt to reach goal, e.g., outcomes and consequences of the attempts
- The reaction, e.g., the protagonists reactions to the events of the story.

Reference: Educational researchers, Jacobsohn and McMullen (1986)

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## Some Systems Stories Indicators

- **Is someone or something out of control?** As the Once-ler is in The Lorax.
- **Is there what can be called a “yo-yo” effect where a character is being pulled back and forth?** Or is there a situation that appears to get better, then worse, then better again?
- **Is there a demonstration of overt aggression?** Aggression can often be an indicator of an attempt to achieve unlimited growth, like the tiger in Marcia Brown's Once a Mouse.
- **Are there unintended consequences?** Are there elements of surprise? Such as the effects of star swapping in Dr. Seuss's The Sneetches.
- **Is there a chronic problem?** In Taking Care of Melvin, Melvin continues to annoy his friends until they they become exasperated.
- **Are there goal-seeking behaviors?** As demonstrated by the yooks and the zooks in Dr. Seuss's Butter Battle Book.
- **Are characters operating within the same time horizon?** In Who Speaks for Wolf, the tribe is focused on the long-term while the settlers are focused on the short-term.

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## Talking the Language of Circular Causality

**If A increases/ decreases, then B increases/decreases. And if B increases/decreases, then..” and so on.**

**OR:**

**There were a certain number of A, because there were more/less A, there were more or less B because there were B, there were more/less C. Because there were more/less C, there were more/less A.**

**OR:**

**As A increased/decreased (got bigger/smaller) B increased/decreased (got bigger/smaller) As B increased/decreased (got bigger/smaller) C increased/decreased (got bigger/smaller).As C increased/decreased (got bigger/smaller) A increased/decreased (got bigger/smaller).**

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## Dynamic Systems Behaviors and Structures To Explore Via Children's Stories

- Simple interconnectedness
- Feedback loops (balancing & reinforcing)
- Emergent properties
- Impact of time, material, information delays
- Change of behavior over time, time horizon selection, “extended present”
- Rational micro behavior leading to unintended (often disastrous) macro results
- Stock and flow relationships
- Self-organization

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