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Book Review

Somdev Chatterjee. *Why Stories Work: The Evolutionary and Cognitive Roots of the Power of Narrative*. Notion Press, India, 2023

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"The universe is made of stories, not atoms", said the great writer Muriel Rukeyser, this book explains why is it so. Our perceptions and decisions are based a lot on stories because the story is the most fundamental form in which we experience our lives. Storytelling took humans far ahead of other competing species because storytelling enabled them to transfer crucial knowledge, imagine possible futures, and cooperate flexibly in large groups. Storytelling presents information in terms of its relevance to advantage in adaptation. Generally, an interesting story has a protagonist, who has some goal, then faces some challenges and overcomes challenges with ingenuity. Plain information without relevance to life is generally ignored to spare our limited cognitive resources. The author refers to a study from the Beckman Institute of Advanced Science and Technology, wherein psychologist Daniel Simons shows that most people cannot notice even a 200-pound gorilla passing through the middle of the room when focused on the task of counting the passes of a basketball among specific players in the room. Our brain has the same ultimate purpose as any other organ, that is adaptation to the environment in a broader sense that also includes our fellow humans. In the quest to increase the certainty of life, our cognitive resources prioritize information collection and processing that is relevant for us as an individual, group, species, or life form, to survive and thrive, rather than finding any absolute truth or ultimate reality.

Long back when humans lived in forests, they sat with tribe members at the end of the day around the campfire, and shared

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information. The information about a member having seen a lion near the camp and escaping being eaten would be paid more attention than another member telling about a leaf falling and its specific detailed trajectory. Then an elder member telling about how they killed a lion earlier and the challenges faced, would be an even more interesting and hopeful story. Based on these experiences shared, one will tell a story about killing that lion the next day and everyone's role in this story in the future. Nowadays the lion is not a likely danger, the most interesting stories are about social interactions. The shared value system and social norms are mostly propagated through grand stories of religion. Listening to stories is advantageous as they train a person to respond to situations that may arise sometimes. Therefore an instinctive liking for listening to stories also evolved so that we listen to more stories due to the pleasure involved in it. The author describes the detailed physiology behind enjoying even horror movies, although all the negative and positive emotions felt by the protagonist are also partially felt by the viewer. The book explains why even fictional stories invoke emotions, referring to a hypothesis by Brian Boyd and further studies by others. We have evolved a capacity to partially suspend our disbelief (cognitive vigilance) when it is safe and pleasurable/adaptive. The recent concept of embodied cognition proposes that the division between thinking and feeling is not as clear-cut as commonly believed, rather Seth Duncan's 2007 study shows that emotion is a form of cognition. The author details how humans later evolved abstract thinking, starting from the interconnection between brain 'modules' that are for sensing smell, touch, sound, taste, and light. Neurons for this cross-modal interconnection are located between the sensory modules, in the IPL (Inferior Parietal Lobules). This interconnection is responsible for the cross-modal abstraction of features from inputs given by the sensory modules. This cross-modal abstraction served as an expatation (co-option) for more and more high-level abstraction. Today it has gone so far that some of us think we can know the absolute/objective reality or "what the universe is made of", completely independent of our senses, with zero influence of even our collective story.

In the 1990s Giacomo Rizzolatti discovered mirror neurons which are fired during the mental simulation of an activity. This is a subset of the set of neurons fired during actual activity of the same

type. Mirror neurons in various parts of the brain invoke different emotions while listening to a story, and collectively perform a mental simulation of the situation and response of the protagonist. In monkeys, it was observed that the mirror neurons of hand movement fire when watching another monkey trying to grab a fruit but not when aimlessly moving hand. Along with other experiments described in the book, it indicates that for a story to invoke emotions, the viewer shall know the goal/intention of the protagonist and the challenges on the way. The author also refers to the concept of super-stimuli proposed by Nobel Laureate Tinbergen, to explain how various arts including storytelling sometimes use superstimuli to hack our primitive instincts. The author is a teacher of a modern form of storytelling, that is cinema, so the book also delves into the challenges and advantages of these new forms. The book explains what I often wondered, how cartoons are preferred by children over realistic characters. The book is for everyone as we all tell stories, live in stories, use stories, and get used through stories. The book explains in easy language, the evolutionary cognitive science behind why stories work, why most popular stories are within some archetypal structures, why we enjoy even horror movies, how stories help in our social adaptation, how storytelling evolved and is evolving, and most importantly how sometimes they can hack into our brain including en masse. It is also a good foundational book for bringing biocultural aspects to literary criticism. The author has used cartoons to clarify concepts in between and reasonably quoted other experts in the domain as well as given further references for detailed scientific studies. Overall the author has made a nice story out of knowledge available so far about the evolutionary cognitive science of story-telling.