The aim of this section is to expand and accelerate advances in methods of teaching bioethics.

The Use of Narratives In Graduate Bioethics Education

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Abstract: The author considers the role of narratives, specifically end-of-life narratives, in medical education. After addressing the role of indexing and other neurological explanations for the validity of narratives in the classroom, she focuses on one recent memoir that explores the medical experience of an ALS patient. The advantages of using narratives, including the understanding of the patients' perspective and the development of empathy, are two important reasons to adopt this approach.

Keywords: narrative; end-of-life; medical education; ALS; empathy

> *"Stories are surely not innocent…"*
> Jerome Bruner, *Making Stories: Law, Literature, Life*, p. 5

Introduction

Ask any serious reader which book has left a lasting impression, and you will get an immediate response. Most readers can recall the lasting emotional impact they felt when a beloved literary character died. Children who experienced the death of Beth in *Little Women,* or who felt the anguish of Jody, the boy who is forced to shoot his pet deer in *The Yearling,* surely know this truth. Stories get into our brains and our hearts, and change us in unexpected and permanent ways.

For physicians, hospital administrators, and others in health settings who work with patients who may be facing death, the most important story is the patient's experience of illness and impending death. The illness narrative is perhaps the most meaningful story that the patient will ever construct. Providers must be ready to listen, and may find it as powerful a teaching and learning tool as a story used for pedagogical purposes in a classroom.

Schank and the Relationship Between Telling, Indexing and Understanding

The use of stories in the classroom accomplishes many goals simultaneously. The professor is passing on knowledge to students, of course, but if a memorable story is presented in a way that students are likely to recall in the future—perhaps not only on an exam, but in a real-life situation where the information could prove useful—then students have moved from the theoretical to the practical. Stories also allow professors to raise important issues that may or may not have answers. As Jerome Bruner writes, "great narrative is an invitation to problem finding, not a lesson in problem solving."[1] Not everyone agrees on the operation of the mechanism of the extraordinarily complex neurobiology that allows for this problem finding, however.

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There are many theories attempting to explain the role that stories play in education. Roger Schank argues that intelligence means having many stories to tell. When an individual is actively engaged in a conversation, reading a book, watching a movie or listening to a classroom lecture, that person is engaged in a complex mental indexing process that slots that unique story into its appropriate category[2] so that this information is available and may be recalled or shared when appropriate, and its information utilized when relevant. This indexing process necessarily becomes more complex over time as cognitive maturity occurs. While a child may index *The Wizard of Oz* under "movies that made me cry or scared me," as an adult, more sophisticated cognitive skills may later index the same film under "movies about home and nostalgia."

Indexing is imperative for meaningful conversations, and to achieve understanding with others. Imagine if this process were not possible. Providing another person with a rule of thumb with no context (as the logical Mr. Spock from *Star Trek* might do) is not helpful, but couching the decision-making heuristic within a story provides a memorable explanation for the heuristic that can be easily recalled and indexed.[3] A child may not know what to make of a warning by his elders to only call for help when a legitimate need exists, but that same child may easily recall a story about this warning. This gives one reason why fairy tales and parables such as "The Boy Who Cried Wolf" exist—to pass on useful information to younger members of the community in ways that are easily understandable and transmissible.

As Schank notes, "[w]e understand by getting reminded."[4] When we converse, one comment will often prompt the other person to share a similar story. This results in a feeling that the speaker has been truly understood.[5] Connections with others are sparked and strengthened by sharing stories. Furthermore, sharing stories with others allows us to expand our knowledge base of stories and index and cross-index these stories in increasingly-complex ways, as we learn that perhaps a story we originally indexed one way could be indexed in multiple ways. Or perhaps we understand that our original indexing of a story was incorrect, and that the story more appropriately needs to be reindexed.

This means that "[u]nderstanding, for a listener, means mapping the speaker's stories onto the listener's stories."[6] Therefore, intelligence can be viewed as some complex meshing and absorption of new stories into currently-existing stories of the listener. However, because we are all unique individuals and some aspects of a story will strike one person as more important than others, we all tend to index stories differently.[7] When we hear a story that we are unable to index within our current framework of existing stories, the intelligent listener will recognize the incoherence present and attempt to resolve the inconsistency.[8]

Interestingly, this search for congruence shows how stories are linked to intelligence. The intelligent listener will attempt to resolve the inconsistencies and appropriately index the story. This may involve some failures,[9] but continued attempts at resolution will often indicate intelligence.

Schank argues that the pedagogical purpose of indexing the stories we hear is that "what we learn **are** experiences" and that faculty should be teaching case studies that emphasize adaptation, and should place less emphasis on rules.[10] Students who are adept at indexing will eventually gain the mental agility to adapt to the constantly-shifting nature of case studies, which are as close to real life as possible.

Other Neurobiological Explanations of the Role and Impact of Narratives

Schank's explanation of the role of indexing in the role of narratives in the classroom has been addressed in different ways by other researchers interested in cognitive development. David Williams has suggested that storytelling is inextricably linked to Theory of Mind, the notion that, since we are social creatures, we have developed a cognitive evolutionary advantage that allows us to make sense of what might otherwise be the incredibly-complex job of interpreting the behavior, actions and facial movements of our fellow humans. In watching how other humans behave, we are putting ourselves in their shoes and imagining what their lives are like, what they are thinking, what is motivating them and what makes them unique. This task, which Lisa Zunshine refers to as mind reading, is so subtle that we do not even realize that we are engaging in the process.

> We engage in mind reading when we ascribe to a person a certain mental state on the basis of her observable action (e.g., we see her reaching for a glass of water and assume that she is thirsty); when we interpret our own feelings based on our proprioceptive awareness (e.g., our heart skips a beat when a certain person enters and room, and we realize that we might have been attracted to him or her all along); when we intuit a complex state of mind based on a limited verbal description (e.g., a friend calls to tell us that she feels sad and happy at the same time, and we believe that we know what she means)[11]

Furthermore, humans possess a system of neurons that allow our own neurons to mimic the neurons of those whom we are watching. When you see someone reach for a glass of water, the same mirror neurons that cause you to grasp a glass of water are activated in your own brain,[12] so that the barrier between observer and observed virtually disappears.

However, it is not only when humans observe each other that barriers between the self and the other begin to disappear. Connections are also made during conversations. William Benzon has observed that a close synchrony exists between the listener's body and the speaker's voice.[13] The gestures and body movements of the listener follow the speaker's voice patterns by a mere 24 milliseconds, a skill that an infant exhibits with near-adult skill level only 20 minutes after birth.[14] In listening to your story, my body is living your experience in a very physical way.

Possessing these innate communication skills allow us to predict how another person is feeling, or how that person is likely to behave based on signals and behaviors exhibited by that person. Humans interact with so many people every day, and we imagine that we know their lives, their thoughts and beliefs. We imagine that their stories could easily become our stories. In fact, reading narratives allows us to use these Theory of Mind skills.[15] Did this character act as the reader expected him to act? If not, why? This information can be stored away and indexed as a useful bit of knowledge, and will be useful in future encounters with others.

Children begin to develop these skills at a very early age. Eventually they will be able to piece together clues based on body movement, changes in voice, word choices, body language and other bits of information to ascertain the mood or anticipated behavior of that person. This is a very sophisticated tool, because the variations from person to person are significant; a loud voice exhibited by one person may indicate anger, while it may indicate happiness in another person.

Williams notes that evolution likely favored those primates who possessed this important skill of Theory of Mind as it is crucial to know one's status in a hierarchical organization.[16] Furthermore, this knowledge could be used to protect your life if you learned that someone was showing an intent to harm or kill you.

Like Schank, Williams notes that the mental indexing process plays an important part in storytelling and developing community relationships. Once primates developed language skills, Williams notes that this new skill was linked in important ways to indexing. "Language allows for the natural categorizing process of brain activity (which creates a mapped version of the world) to be cast into an exterior communicative web."[17] That is, language takes a complex internal process and turns it inside out by the telling of stories and the creation of connections. He calls storytelling "Theory of Mind fictionalized"[18] since this approach allows the teller to gauge the responses of the listener and refine the teller's understanding of the world. Sharing stories allows us to exercise our Theory of Mind skills and grow more competent as we mature[19] in order to better predict and understand how others will act. This approach also emphasizes that the final outcome is aimed at achieving better human understanding.

Furthermore, individual stories are constantly being indexed as they are being learned. Researchers Rolf Zwaan, Mark Langston and Arthur Graesser have found evidence that readers are constantly monitoring and indexing five components of a story (temporality, spatiality, protagonist, causality and intentionality) as they read.[20] Any cognitive dissonance between what was read previously and the current page will require a mental adjustment which quickly occurs. Both this model, the Event-Indexing Model, and a second model, The Immersed Experience Framework, propose that the portions of the brain involved in the indexing of persons and motivations when inferring intentions, are active while reading stories.[21]

Cognitive scientists have been able to isolate the areas of the brain associated with specific tasks of reading, comprehension, indexing, and integration of current stories into the framework of other stories. Many theories agree that the frontal lobes play a significant role in narrative comprehension, while others have proposed roles for the prefrontal cortex, hippocampal regions, paracingulate cortex, the temporal poles, and the amygdala.[22]

Multiple imaging studies appear to indicate that the frontal regions of the brain play a significant role in narrative comprehension; these areas are hypothesized to play a significant role in the construction of the internal cohesion of narratives.[23] Interestingly, it appears that the areas of the brain responsible for story production and story comprehension are closely, perhaps inextricably, linked. This becomes evident when one considers that "the ability to organize the meaning of connected sentences in order to form a holistic representation for either understanding or communication seems to be a shared necessity."[24] Telling and understanding a story are linked in ways that we take for granted. It is only when the teller truly understands a subject that she can begin to tell it in a way that is meaningful to her listeners.

And perhaps one of the reasons it is meaningful to the teller is that it contains emotions that are worthy of sharing with others. In one fascinating study of sixteen subjects, two versions of the same story were told. One version was told with its emotional content intact (the researchers called this

the conscious version), while the second version was told with its emotional content replaced by action language (which the researchers termed the unconscious version). Those subjects who were given the conscious version overwhelmingly tended to answer the follow-up comprehension questions with "I think," while the subjects who were given the unconscious version answered their questions with "the characters believe." The researchers hypothesized that the conscious version of the story caused the subjects to be more reflective and engaged in the story; in effect, the subjects were putting themselves in the place of the main characters of the story.[25] The researchers found that subjects who had gotten the conscious version of the story, which contained elements of metacognition, cognitive and temporal organization and emotions, had a much better recall of events when the subjects were tested two to three months later, compared to the subjects who had gotten the unconscious version.[26]

With the admittedly-limited evidence that sharing narratives containing emotional content allows for both better recall and improved ability to relate to the characters in the story on a personal level, there is some support for the proposition that stories allow for cognitive growth of several sorts. "[W]e seek story because we enjoy it. But nature designed us to enjoy stories so we would get the benefit of practice. Fiction is an ancient virtual reality technology that specializes in simulating human problems."[27] Furthermore, it is clear that there are evolutionary advantageous reasons for this practice. When we turn on the television or are actively engaged in reading a book, the "constant firing of our neurons in response to fictional stimuli strengthens and refines the neural pathways that lead to skill navigation of life's problems. From this point of view, we are attracted to fiction not because of an evolutionary glitch, but because fiction is, on the whole, good for us."[28]

The glue of the story that binds us, both individually and collectively, comes from the emotions it generates. As Martha Nussbaum has argued, emotions have been historically ignored in discussions about ethics. She suggests that emotions should be considered one of the essential parts of human intelligence, and not dismissed as an irrational human impulse.[29] The emotions generated as a result of digesting stories are deeply, deeply felt. They remain an integral part of the self that we become when engaged with a narrative. Books can change behaviors in either negative ways (as when the publication of Goethe's *The Sorrows of Young Werther* resulted in a mass copy-cat suicide trend in the 1770s) or positive ways (as when books such as Ralph Ellison's *Invisible Man* and Harper Lee's *To Kill a Mockingbird* promoted racial equity in the 1960s).[30] Books used in the classroom, particularly narratives involving patients, have the potential to be especially useful for future providers and administrators.

Use of a Medical Narrative in the Classroom

One area where emotions are felt most intensely are in narratives chronicling illness and, occasionally, death. Perhaps the foremost authority on medical narratives in the United States, Dr. Rita Charon, has written extensively on the role of narratives in the doctor-patient relationship, and how by listening to the narrative, often unconsciously embedded in the story the patient is sharing, the physician might be able to provide better care. Charon writes that the patient's narrative contains "truths about themselves of which they are unaware,"[31]

so astute physicians must "listen with the third ear."[32] Medicine is not designed for this close listening with the third ear. A 1984 study found that the typical doctor's interruption occurs a mere 18 seconds into the patient's narrative.[33] Yet, it is possible to use the patient's narrative as an opportunity to bridge a gap that has long existed. Charon's book contains many examples of how close listening, such as determining why a patient began her illness narrative backwards in time and worked forward, resulted in better outcomes for her patients.

Illness narratives demand our attention because they make personal meaning of impersonal statistics, argues Ann Jurecic.[34] While statistics, physicians and epidemiologists can tell us about the dangers of particular diseases for specific communities, narratives move from the general concept of risk and illness and inform the reader of what it means to live with cancer, or even the likelihood of cancer. Arthur Frank asks whether the genesis of the patient narrative was the quest by the patient to create a patient version of the story as opposed to the doctor version of the story created in the chart.[35] This "narrative surrender"[36] to providers could result in an effort by some patients to reclaim their story—or perhaps, their version of the story—and thus, their lives and the person the patient was before the diagnosis.

The best of these stories end well. That is not to say that all patients fully recover. Nevertheless, medical narratives often result in wonder—wonder that the patient survived the illness and is here to tell the story. Sometimes only the story has survived. "[T]he capacity for wonder is reclaimed from the bureaucratic rationalizations of institutional medicine"[37], and the thing that survives is the story. In this way, these narratives become a sort of patient testimony.[38]

While there are a number of excellent memoirs available for use in the graduate classroom (*Intoxicated By My Illness* by Anatole Broyard, *Mortality* by Christopher Hitchens, *The Wheel of Life* by Elizabeth Kübler-Ross and many others), I believe that the books that best capture patient testimony are those that spare the reader nothing, including—in some cases—impending death. In Tony Judt's *The Memory Chalet*,[39] the author, a respected writer and college professor, looks back upon his life after his diagnosis of ALS (Lou Gehrig's Disease). Judt begins his book by fondly recalling a childhood vacation in Switzerland with his parents; he then uses the chalet as a mnemonic device to trigger other memories from his life. He imagines that the chalet houses all of the events and memories of his life and, at night when he is tucked into bed by his caregiver, virtually unable to move for the next eight hours, he finds joy in returning to these memories. And perhaps one of the most surprising moments is that Judt finds joy much more easily than one might imagine.

> It might be thought the height of poor taste to ascribe good fortune to a healthy man with a young family struck down at the age of sixty by an incurable degenerative disorder from which he must shortly die. But there is more than one sort of luck. To fall prey to a motor neuron disease is surely to have offended the Gods at some point, and there is nothing more to be said. But if you must suffer thus, better to have a full-stocked head: full of recyclable and multi-purpose pieces of serviceable recollection, readily available to an analytically disposed mind. All that was missing was a storage cupboard. That I should have been fortunate enough to find this too among the trawlings of a lifetime seems to me close to good fortune.[40]

Of course, Judt experiences moments of despair as well. He discusses the mental fortitude needed to "survive the night" and how he welcomes the wheelchair in the morning so that he can once again interact with others.[41] Many of these short essays are devoted to activities he once pursued passionately (trains, buses, food, travel), but is now unable to pursue on his own. The loss is palpable. In contemplating that he can no longer hop a train and explore the world, he writes,

> [t]his knowledge weighs on me like a leaden blanket, pressing me ever deeper into that gloom-laden sense of an ending that marks the truly terminal disease: the understanding that some things will never be…Remembering Rilke, it constitutes the very loss of myself—or at least, that better part of myself that most readily found contentment and peace[42]

Judt perceives the need to connect to others; his illness has intensified this need. "If words fall into disrepair," he writes, "what will substitute? They are all we have."[43] The reader understands that Judt will soon lose his ability to write and, eventually, speaking will become difficult.

At the end of the book, he returns to his beloved Switzerland and finds it unchanged. Judt is still living fully, even at the end, when his voice—but not words—is starting to fail him. He seeks comfort in nostalgia. Just as some nursing homes ask that residents leave photos of themselves when young and active on their doors to remind staff that they were not always elderly and frail, Judt is evidence of the strength present in many patients, even those who are physically weak. The reader cannot help but want him to reach the comfort offered by his persistent memory of Switzerland where nothing ever changes or goes wrong: "it is the happiest place in the world."[44]

Medical school and other graduate health faculty could use a patient narrative such as Judt's in many ways. First, students could experience from a patient's point of view the cadences of illness, including feelings of anger, impotence, depression, regret and the range of feelings which result from a terminal diagnosis. It may be possible that a writer examining the end of his life may be more honest, and have the luxury of more time, than a patient who has only a few minutes with a doctor during an office visit, thus affording the reader the opportunity to learn more about the emotions generated by the patient's impending death. Secondly, understanding the emotions generated by the patient's anticipated death could generate feelings of empathy that will allow the student/future provider to provide better care and to become a better listener. The empathetic reader will, in fact, hope that Judt ultimately can reach that place which is his happiest place. (Judt died in 2010).

Finally, in relation to the previous discussion of the importance of indexing and Theory of Mind when listening to or reading narratives, medical narratives such as *The Memory Chalet* can be especially important. They can fill in gaps in knowledge, especially for the early-career health practitioner. For the medical student or new physician, each narrative can be appropriately indexed as if it were, in fact, a real patient encounter. One may not have had experience with an ALS patient, but this memoir allows providers to understand what it is like for this patient to experience the illness and to consider this approaching death. As one's experience grows, these stories will be indexed, and the provider will begin to develop an index of patient stories.

As Schank has noted, "[s]torytelling and understanding are functionally the

same thing.[45] Shared stories promote mutual understanding, which is likely to lead to improved patient health outcomes. Narratives, in other words, are good for your health.

Conclusion

The evidence for the use of medical narratives in the classroom is supported by a lot of data indicating that it helps create empathy in future providers.[46] Furthermore, it is useful for allowing future providers and administrators to begin the process of indexing the collection of patient narratives that they will collect over their careers, and the lengthy and complex process of sorting through the patient illness experience. A future where providers are better-prepared to sympathize with and collect patient narratives could mean a health system where medical care is not divorced from emotional awareness of patient needs.

Notes

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