

Introducing narrative

Ralph Levinson

The word ‘narrative’ derives from the Sanskrit ‘gnarus’ (knowing) and the Latin ‘narro’ (tell). In medieval times, storytelling combined with juggling and other forms of theatre were popular activities. The narrative story thus combines wisdom with street credibility and frivolity. Narrative conveys what is known, and can take various forms – drama, cartoon, film, dance. Allowing people to tell and listen, to talk of experiences not understood or imagined by others, narrative is an organiser for these experiences by structuring and sequencing events.

Since science is made and done by humans it does yield narratives as lived experience. Until quite recently the prevalent stories published in school science textbooks were heroic, celebrating the lives and breakthroughs of individual scientists, such as Pasteur and Jenner, and the impact of their discoveries on the welfare of humankind. But paralleling these grand narratives have been localised and personal narratives around contemporary science, for example, people affected by pollutants as waste from local industries or parents-to-be, who as carriers of a genetic condition, are seeking advice about what action to take.

How such personal, and often collective, narratives can link to personal stories and acts of political organisation, resistance and social solidarity can be exemplified in the story of the neem tree. This ancient tree has been celebrated and used for many years for its fungicidal, medicinal and contraceptive properties, and is popularly known as the ‘village pharmacy’ of South Asia. Neem trees were planted in avenues when New Delhi was built because of the coolness of their shade. In 1995 a patent was granted to a US multinational company on an antifungal product that could be extracted from the neem. This meant that the neem was no longer a resource for the rural population of India but the property of an American corporation. Led by the environmentalist and physicist Vandana Shiva, local people mobilised to successfully resist the patent, which they perceived as bio-piracy. Political organisation and publicity formed around the stories that villagers could recount about the cultural and scientific importance of the neem tree to their ways of life over thousands of years.

This power of narrative to “see the lives of the different” (Nussbaum, 1997, p. 88) and make the invisible visible underpins Angela Calabrese Barton and Tara O’Neill’s article about a group of New York inner-city schoolchildren, the ‘Fabulous Five’, who decide to make a video about their lives and about what science means to them. There are similarities in the politics and structure of the stories they come to tell to that of the neem tree because the Fabulous Five are re-appropriating science as part of the story of their lives. For them, science as taught in school is decontextualised and distant, but their understanding is transformed as science comes to have meaning for issues which concern them. Their stories are characterised as counter-storytelling both in challenging the dominant school narratives of science from which the Fabulous Five feel marginalised and in providing a sense of community where they seek to use science to participate in society. Barton and O’Neill identify the underlying themes of counter-storytelling: ‘valuing place’, which incorporates social, political, cultural and historical dimensions, mediates the relationship between the children and science. ‘Hybridity’ is revealed in the cultural resources such as dance and music that the children draw on to tell the story of science that illuminates their experiences. There are overtones of hybridity in a story Vandana Shiva tells about the festival of *Akti* in central India, where families from the villages perform a ritual bringing their rice in folded leaves; the rice is mixed and exchanged, demonstrating the dangers of isolated, pure-bred rice being vulnerable to disease. And in ‘re-constructing authority’ the Fabulous Five have shifted the locus of power away from their teachers to a point where they become active participants in telling the story of science.

Reclaiming science by those marginalised by education is also the theme of Catherine McNamara and Alison Rooke’s article on *Sci:identities*. In this project, young transsexual and transgendered people generated their personal narratives in the forms of interviews, weblogs and ‘zines through a process of subverting

common-sense biological assumptions about sex and gender. The detailed and informed discussion with medical professionals highlights problems of understanding and the limitations of extant scientific resources in supporting the young trans people's self-understanding. The insights shown by these young people and the transformative experiences of telling their stories in creating new works of art have many commonalities with the Fabulous Five. They have to find a new way of drawing on a science that they find self-affirming and consistent with their lived realities. In the process they are reconstructing authority and, as with the Fabulous Five, it is the collective experience which is crucial in supporting their developing personal narratives. What has science come to mean for them? As one of the participants says: "science is...always changing and adapting to personal experiences and social movements. And if it isn't, it should be!"

These articles demonstrate an awareness of the constraints as well as the possibilities of the science curriculum, that science can make links with personal narratives that are very powerful and a social role for change, but it is not a straightforward process. The forms of narratives can present distinct challenges. Kerry Chappell's article on embodied narratives asks questions about the ways in which dance can narrate scientific and socio-scientific ideas. Chappell draws on the idea of a spectrum of intimacy in describing the relationships between dance artists and scientists. At one end there are the kinds of connection that science teachers are familiar with, exploiting movement to reinforce a chemical change or to demonstrate 'invisible' concepts such as the motion and arrangement of atoms in space. But at the other end of the spectrum, the nature of the relationship between dance and science is complex and distinct from other forms of narrative such as written stories or videos. Chappell draws on a range of examples and collaborations between scientists and artists – genetics and neurophysiology – to unravel the mechanism of embodied narratives. To engage and understand in these collaborations is a difficult but rewarding process.

Caution is needed in relocating these ideas in the science classroom. The articles on counter-storytelling and Sci:identities tell of narratives that emerged from a sense of social dissatisfaction. The process of developing fruitful narratives, as also shown in Chappell's article, demands commitment, knowledge and organisation from everyone involved. But the approaches used show that an ability to draw on the resource of narrative can open windows on what it is to do and understand science, and the creative relationship of science to self-knowledge and social change.

Bibliography

Nussbaum M. *Cultivating humanity*. Cambridge, MA: Harvard University Press; 1997.