

**The Scientific Mind, the Brain, and Human Culture:  
Story Telling and Story Sharing**

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There exist significant architectural similarities between scientific method, understood as a general form of inquiry, and the human brain. These in turn suggest ways to conceive of cultures that would encourage distinctive individual evolution in their members and so continual evolution of the cultures themselves. The hall marks of such cultures would be their respect for and commitment to human diversity, and their recognition that the past and present are best understood as building blocks to the construction of as yet unconceived futures, futures in which new understandings serve to alleviate or correct known problems as well as bring new challenges into existence.

Humans and their products derive from biological evolution, and so it makes sense that science has features that reflect our origins. Just as biological evolution is an open-ended generation and testing of possible forms of living organisms, so too is science an open-ended generation and testing of possible understandings of humanity’s relation to the universe. Both lacked a single intention or plan at their outset and both continue without a conceived goal or end state. Both proceed by testing what works without commitment to the existence of a final state independent of the results of the process itself. The core of both is a feedback loop consisting of the repeated generation and testing of novel possibilities in a way that reflects prior generation and testing. Science extends the potentials of biological evolution by the addition of “stories,” tentative abstractions of experiences gained that can be compared to one another in ways that create new possibilities for future exploration.

The human brain is both a product of evolution and the source of science, and so it is not surprising that it has architectural similarities to both. Sometimes thought of as a device to analyze and learn from the environment around it, the brain is in fact designed by evolution to explore, in much the way evolution and science do, by generating outputs and observing their effects. Such exploration occurs constantly, creatively, and largely unconsciously. A distinctive set of circuits in the human brain is responsible for its ability to tell stories about oneself and the world. This conscious system and its associated stories provide the mechanism by which humans are capable of conceiving and potentially bringing into existence things that have not yet existed.

Myths, both scientific and otherwise, are stories generated by the human brain that serve as common starting points for communication and the generation of human communities. In the past, these stories have served human groups primarily to stabilize existing understandings, and have additionally been put into service by those who have a stake in preserving particular forms of social and cultural order. An increasingly problematic

aspect of this use of story telling in a shrinking and more rapidly changing contemporary world is the use of cultural stories to demonize other cultures as well as to disable individuals within cultures.

Stories can equally be used to validate and encourage an ongoing process of exploration and story telling itself. The key here is to recognize that all stories are indeed ... stories, tentative ways of making sense of the world and subject to revision based on new observations. And to recognize further that multiple different stories that each serve to make sense of the world can be viewed not as antagonistic but rather as the valuable sources from which can emerge new stories. Story sharing as the foundation of human cultures would discourage both demonization and disabling and has the potential to engage all humans as equally valued participants in an ongoing process of creating and revising both individual stories and broader human stories in which everyone is involved and can take pride.

Bringing such cultures into existence will not be an easy task, but conceiving the story of such cultures is an essential first step. In addition, the essential wherewithal for such cultures, the ability of brains to explore and to story tell and story revise, is already in place. So too is the model of successful ongoing and creative exploration provided by biological evolution and by science. The need then is primarily one of encouraging all humans to make use of and further develop their story telling and story sharing skills. And to put in place institutional and cultural structures that support this and will themselves be capable of evolution as story revision continues.

Perhaps most importantly, we will all have to learn to resist the temptation to seek security through certainty, neither of which is achievable, and instead to become comfortable with, perhaps even enjoy, a universe and life in which we are all creative agents participating in a process of continually shaping yet to be fully conceived futures.

### **Relevant Papers:**

Grobstein, P. (2005) Revisiting Science in Culture: Science as Story Telling and Story Revising. Published article available at <http://jrp.icaap.org/index.php/jrp/article/view/9/18>

Dalke, A., Grobstein, P., and McCormack, E. (2006) Exploring Interdisciplinarity: The Significance of Metaphoric and Metonymic Exchange. Published article available at <http://jrp.icaap.org/index.php/jrp/article/view/43/54>

Grobstein, P. (2008) From Complexity to Emergence and Beyond: Towards Empirical Non-Foundationalism as a Guide for Inquiry. Submitted. Pdf available at <http://serendip.brynmawr.edu/reflections/Emergence07.pdf>

Grobstein, P. (2008) Social Organization as Applied Neurobiology: The Value of Stories and Story Sharing. Submitted. Pdf available at <http://serendip.brynmawr.edu/reflections/Socioneuro.pdf>