

input supported by experience of God in ecclesial communities and life of inner prayer” (p.166). Ultimately he moves the discussion to the study of cosmology where he advocates for a more multifaceted view of knowledge. He argues that Big Bang cosmology tries to destroy “the multihypostaticity of knowledge” by making it objective, thus falling short of the telos in his overall system (p. 232).

Because this text presents an Orthodox perspective from the viewpoint of a mathematician using Western continental philosophy, it is rooted in current theology-and-science scholarship while also integrating multiple viewpoints effectively. The text is somewhat technical for those without a philosophical background in phenomenology because the focus is on the ecclesial and philosophical versus the work of specific patristic thinkers. In addition, Nesteruk’s use of the twentieth-century thinker Georges Florovsky is notable. The volume presents an overall approach to Christian tradition that places the theology-and-science dialogue within it. This may be viewed as a shortcoming for those who do not subscribe to this worldview, as well as those outside of the Orthodox tradition. As a whole, Nesteruk has taken Orthodox discussion of theology-and-science to a new level, broadening the dialogue and presenting a synthesis of Orthodox Christian tradition and science.

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Spiritual Transformations: Science, Religion, and Human Becoming. By Karl Peters. Minneapolis: Fortress, 2008. 146 pages. \$7.00.

In his reflection on the metaphor of “crossings,” one of the many metaphors that shape the chapters of this book, Karl Peters says that crossings can refer to both individual and social transformations depending on the religious perspective explored. This contrast is one of many that confound the search that Peters sets for the text, which is a set of reflections he gave at a Star Island conference that explored the recent work on spiritual transformations in the religion-and-science dialogue. Clearly the reflections are meant to explore not only the various ways that one can talk about spiritual transformations but also how that becomes a focus for conversation between religionists and scientists. Peters is a veteran at this effort and once again is successful in navigating the many challenges of the topic toward clarifying how a legitimate religion-and-science interaction can help bring new light to the issues involved.

Navigating the territory is a challenge because we face not only the difference between social and personal but also the problem we have in our culture of clarifying the relation between spirituality and religion. These issues seem to be related and prove to be part of the strength of the text but also perhaps a problem. Peters is adept at moving between different religious traditions, and these traditions actually resolve the relation between the personal and the social in different ways, opening the door for multiple possible understandings. He does this as well in introducing a variety of metaphors for transformation. Thus, his understanding of the religious and the spiritual does not become an either/or proposition, as we see in authors such as Diarmuid O’Murchu or Dean Hamer for strikingly different reasons. On

the other hand, it is difficult to escape the sense that transformation for Peters remains essentially a personal experience that is applied to or comes to affect the social only through individual choices.

I also am struck by the way that Peters sees the relation between science and religion. On the one hand, Peters clearly knows that nature is the context in which transformations take place. This means that what science has to offer is helpful in understanding that context; science becomes a tool for understanding religious phenomena. However, if spirituality and religion are not the same but different, then transformations clearly might happen quite unrelated to religion. In what way do we talk about these as spiritual transformations? If we mean by *spirit* that which is personal, transformations of the spirit can occur through the physical/social environment of the individual. All of this seems to be in the mix as Peters uses this set of reflections to provide metaphors for our thinking. The small text is a nice primer for the subject that introduces enticing ways to think about the complexities of spiritual transformation. One hopes for more development perhaps in another volume.

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The Genial Gene: Deconstructing Darwinian Selfishness. By Joan Roughgarden. Berkeley and Los Angeles: Univ. of California Press, 2009. 272 pages. \$24.95 (cloth), \$18.95 (paper).

The Genial Gene is about “social selection” that trumps the sexuality and individuality of Darwinian sexual selection. On page 237, Table 19 outlines “The Contrast between Evolutionary Systems of Sex,” between “Social Selection” and “Sexual Selection.” This is the book in a nutshell.

But “memes” are equally important. Richard Dawkins coined the term *selfish gene* in his 1976 book of the same name. He wrote about “selfish replicators”: selfish genes and selfish memes. Memes are replicators that copy information beyond the genome’s DNA.

Two problems emerge in Roughgarden’s elegant research. Can “human” qualities such as kindness be attributed to biological nature? Perhaps more important, are there aspects that go beyond Darwinism, even beyond the distinction Roughgarden makes between sexual selection and social selection? Could cultural selection fit the bill? Genetics is how organisms and cells reproduce, carrying DNA to the next generation of offspring. However, much biology occurs through extragenetics, categorized as “culture” by sociobiologists, especially John Bonner (1980).

A recent article in *Science* (Pennisi 2009) chronicles work on cooperation and selection. In sperm and egg, the large ovum “guides” sperm to “land” so zygotes form. This is extragenetic. It takes place by means of a chemical gradient not dependent on the DNA. Culture plays a role beyond genetics and sociality based solely on DNA biology. So do “passionate” and “coy” males and females.

Roughgarden addresses peacock tail biology. In sexual selection, gaudy peacock tails advertise desirable genes—billboard plumage easily detected by mate-seeking