Read the preface: an engineer in God’s service

October 25, 2014

“No soul is asked to go beyond its capability”
-- al-Jazari, medieval Islamic mechanic and engineer

It is such a gentle opening – you will not be asked to carry more than you can bear – and such a gentle description of a career: a young man of talent, encouraged by his elders and teachers, brought into the service of the leaders of his day, finally to produce a work of mechanisms rivaled only by two others among all books written before the printing press. It is an engineering textbook, The Book of Knowledge of Ingenious Mechanical Devices, written between 1180 and 1204 in the court of the king of a territory in northern Mesopotamia called Bakr, and it is celebrated in the recently opened Museum of Science and Technology in Islam, in Istanbul’s Gülhane Park. It was written by eminent mechanician Ibn al-Jazari, and he wrote it for Allah.

Its words of comfort, certainly familiar to those “who have knowledge of aphorisms” – al-Jazari here referred to the Qu’ran – helped to justify al-Jazari’s own ambitions and to emphasize that his mechanical gifts were given of God. He had earlier begun writing about all his inventions, when, as he put it, “my soul asked of me to pass on a record”, but he had put the project aside when he began to doubt that it pleased his elders. So he was ready when the king asked him to prepare a manuscript of all mechanisms known and useful. It suited his talents, and it suited his king.

And it suited his God. We can take seriously not only al-Jazari’s mechanical descriptions and sketches but also his preface, where he tells us how his great collection came about. We might dismiss al-Jazari’s preface as just one example of a common – even expected – way for an author to praise his patron. But al-Jazari praised not so much the king he served as God who granted him deep visions of how things might work, and skilled hands to build them so they did.

What if we take al-Jazari seriously? Praise be to God, al-Jazari wrote, who had consigned His secret wisdom to the earth and given al-Jazari instruction that he might produce inventions that make divine wisdom manifest. “And those who have knowledge of aphorisms know that every man can accomplish only what he is capable of by his inborn ability. And he can spend only of the provision given him by God, and let no soul spare that which can benefit others. No soul is asked to go beyond its capability.” Here al-Jazari quoted the Qu’ran, verse 286 of the Surah Al-Baqarah, itself echoing the Bible’s I Corinthians 10:13, “God is faithful, and he will not let you be tested beyond your strength.” Al-Jazari made a serious statement that engineering serves not only rulers and people of power, but that it serves people, it “benefit[s] others”, and it is an act in praise of God.