

After the Genome: A Language for Our Biotechnological Future.¹

Michael J. Hyde & James A. Herrick, (Baylor University Press, 2013)

Review by: Dr Ebrahim Moosa

Summary

The myriads of ways the human body reproduces itself — in predictable and unpredictable iterations — are some of the benefits arising from the revolutionary outcomes of genome science. What is less studied, however, is how the advent of genomic literacy also alters our existing social imaginaries and moral landscapes. Language, especially rhetoric in the age of the genome, Hyde and Herrick, the editors of this volume inform us, unmistakably shapes the mental, moral and political space of humans, a vital fact in discerning what it means to live in a biotechnologically-driven world. Today, the genome and gene technology play an indispensable role in the advancement of medicine, food production and in the construction of human personhood.

The changes in our uses of language as well as our experiences with technologies do not necessarily mean that the essence of human social imaginaries undergoes immediate transformation and a metamorphosis. “Biotechnology’s religious language,” Herrick and Hyde write, “reflects the fact that human beings remain spiritual creatures in a scientific age.”² For humans to remain “spiritual creatures” in a “scientific age” might be consoling to anxious religious individuals and communities, but some questions remain: what indicators determine that we have remained spiritual? Does the quest for spirituality have something to do with the kinds of anxieties and commitments we possess as humans in order to demonstrate our continuity with past traditions, especially experiences that were described as spiritual or ineffable in character? It is not clear what specifically in genome-based biotechnology demonstrates that we remain spiritual beings, and what people mean by the term “spiritual” is perhaps the most apt

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² A., Herrick, and Hyde, " Editors’ Introduction: A Language for Our Biotechnological Future," Kindle Locations 184-85.

question. Could there be subtle and not so subtle changes in the nature of our spirituality itself? In other words, the question can be posed like this: did changes occur in both the rhetoric and symbolism of spirituality?

Given the changing nature of our lived environment, the editors of this volume point to the ongoing question: whether human flourishing requires humans to seek out improvement and perfection in form and function, or whether we should accept and celebrate our natural limitations.³ It is here that some people might argue that human evolution allows for adaptation to new conditions with the aid of new technologies and, therefore, in the age of the genome it is no different. Others might argue that the forms of interventions proposed by genome science and therapy are exceptional and unprecedented with the result that our previous measures and assessments are no longer effective.

For students of Muslim bioethics and genome studies, one critical take-away from this volume is that it highlights the need to undertake studies of contemporary literature in Muslim languages, especially novels, in order to grasp and gauge of how the age of biotechnology and the genome has impacted the moral and cultural imaginaries of writers and readers. In his essay, Ronald M. Green compared the work of two novelists, Sinclair Lewis, who wrote *Arrowsmith*, a 1925 Pulitzer-prize winning novel, and the two novels authored by the Canadian novelist Margaret Atwood, *Oryx and the Crake* (2003) and *The Year of the Flood* (2009). In *Arrowsmith*, a doctor's research helps to save people on a Caribbean Island from the bubonic plague. He does so in defiance of the wishes of a medical missionary whose religious views opposed vaccination as the plague was God's just punishment for sin. Atwood's novels are pessimistic and depict "a world destroyed by human scientific and biomedical interventions" and the technological behemoth is only resisted by religious communities.

Between 1925 and 2009, the image of both religion and science underwent a massive transformation in the West's cultural evaluation. Whether this holds true for regions outside the West needs to be tested. "Religion," writes Green, comparing the work of Lewis and Atwood, "went from being a threat to scientific advance to the sole bastion of human feeling in a world of technocratic domination."⁴ A study of language and rhetoric allows us to evaluate how metaphor

³ Ibid., Kindle locations 97-100.

⁴ Kindle location 920

and rhetoric oversells the “rhetorical walls erected around” what was deemed to be “traditionally religious concerns...,” including what it meant to be human, while challenging the “transcendent aura around medical procedures” and the invincible power of technoscience.⁵

Technoscientific language and aspiration shaped the skeptical and pessimistic attitude of the late Jean Bethke Elshtain, a noted political theorist. She points to the fact that the exploration in gene-technology could lead us to the door of the harms evident in transhumanism, a view that the human body has no finitude and can be endlessly remade. She wonders if we had reached the age of “genetic fundamentalism.” Severe on the fantasy world, Elshtain was skeptical about the optimism in the medicinal advances of the “gen-tech industry.” Responsible people who are supposedly thinking ethically about these matters, she chastised, issued “rationalized permission slips for the gen-tech industry at a rapid clip. (Not all ethicists, of course, but way too many.)”⁶

It is unfortunate that many authors and writers engage in the topic in an unhelpful manner of pitting “an unethical science” against “a restraining religion,” as a clear-eyed view offered by Leah Ceccarelli signals.⁷ Politicians in the United States have frequently utilized their religious convictions to magnify this division between science vs religion, as the era of George W. Bush testifies when stem-cell research undertaken with the help of government funding was outlawed. Yet, while some religious communities see stem-cell research as an unbreachable boundary, others see it as a promised land for treatment options. Both science and religion are available to people who wish to generate partisan rhetoric without always being clear of what broader vision for society they are affirming. Genome scientists, like Francis Collins, who are also religiously devout, often conflate the language of science with that of religion, equating the map of the genome with the mapping of divine horizons in nature, known as the book of nature. While the analogy of the book of God as congruent with the book of nature was meant to be a piece of poetic wisdom, it often creates horizontal lines of equivalence between the book of God and the book of nature, a comparison that is often received as a shibboleth of positive fact.

Dealing with a technology that continues to change, Herrick and Hyde are right to warn; “Caution is a reasonable state of mind to have when dealing with technology that is changing

⁵ Kindle location 167

⁶ Kindle location 1654-1656

⁷ Kindle location 1911-1912

what it means to be a human being. Caution is a defense against allowing ourselves to become rotten with perfection as we work to improve the human condition. With too much caution, however, we risk the danger of becoming rotten with imperfection. The language of our biotechnological future is still in need of development and careful tuning.”⁸

When it comes to the science itself, there are some daunting moral questions as a number of essays make clear. Several authors helpfully illustrate the science in some legible detail. The essay by Tristan Keys, Nancy M. P. King and Anthony Atala, titled “Faith in Science”, is efficiently descriptive of the varieties of stem cells and allied technologies, and the multiple roles these cells can play in regenerative medicine. Regenerative medicine, we forget, has for a long time undertaken organ transplantation. Now, this stage is followed by cell therapy in bone marrow transplants and tissue engineering to replace damaged or diseased cells. In order to generate cells with pluripotent qualities, a variety of techniques have been used from using adipose tissue-derived stem cells and mesenchymal stem cells that have advantages and limitations

One of the more daunting moral aspects of genome science is somatic cell nuclear transfer (SCNT), popularly described as cloning. A nucleus of a female germ line cell, called an oocyte, is replaced with a somatic cell nucleus from another individual. The new cell can be re-implanted in the uterus and will genetically be identical to the donor. This is how the new fetus will be a clone of the donor. While this procedure has been successful in animals, it is deemed morally impermissible for human reproduction. Instead of human reproduction, the same SCNT cells can be used to engineer organs is viewed as the new frontier in regenerative medicine. If the prepared oocyte is cultured in a laboratory, it can generate embryonic stem cell (ESC) lines to pursue organ engineering. Since these ESC’s are autologous, namely genetically identical to the somatic cell donor, thus the need for immunosuppressive therapy can be obviated. Recent experimental work with the use of the gene-editing tool CRISPR-Cas9 allowed scientists to edit genes in the human embryo in order to correct a gene mutation.

Critical Evaluation

⁸ Kindle location 265-268.

One of the positive aspects of this collection of essays is that a variety of scholars from different disciplinary backgrounds are also interested in how the rhetoric of biotechnology and genomics work. Their grounding in different subfields in bioethics as well as in the clinical and academic practice of medicine give their essays a special appeal. The disadvantage is obvious: the volume is focused on North American experiences and strangely does not capture the range of voices and faith traditions, even in the USA. It would be hard to find popular and literary narratives that relate to Jewish, Muslim or Buddhist experiences in the West. Invitations to a diverse and broader range of moral theologians would have served the volume better, in my view.

Expert opinion clearly has its value in any collection of this kind. However, in an emerging field where genomics is rapidly moving into therapeutic modes, it might be a requirement to hear the voices of patients and recipients of genomic-treatments. The voices of diverse communities were also absent. In other words, in contemporary ethics and moral anthropology, there is a need to ensure that the voices of patients and communities are documented and factored into the treatment.

Some of the essays addressed the rhetoric of care. Are systems taking over the care for patients, like health-care systems, medi-care insurance, or patient-care systems, instead of medical physicians? Given the nature of medicine, the idea that one would be entitled to health care or have access to physician-care has grown to a much more complex system. In other words, patient autonomy has changed in clinical practice and it has become much more fragmented and complicated. We might also be envisioning a future where there will be a greater occurrence and use of laser and micro surgeries instead of invasive surgeries, a feature that could alter the nature of medicine as well as patient-responses. With genome-based therapies, medication and medicine become a silent enterprise with very little apparent disruption, but could create enormous changes and transformation to the human body.

Relevance for Indigenizing Genomics in the Gulf Region (IGGR)

The collection of essays also clearly makes the case that good quality studies are needed to capture the reception of genomics in the popular imagination, film and other media, literature, and explorations in the cultural imaginaries of people living in the Gulf region. It is one thing to

get normative teachings on genomics from religious experts. But it is another matter if there are hardly any studies of the cultural, social and moral anthropologies of the lived experiences of citizens in the Gulf and other Muslim majority regions. Without such data, the ethical inquiry will remain to be incomplete. It will, again, mean that audiences are at the mercy of normative judgments made by individual experts or teams of Islamic experts who speak from a singular vantage point, namely the aspect of formal traditional Islamic law (*fiqh*). Only adequate anthropological studies can help to create a bigger tableau of knowledge from which normative inquiries can benefit from in terms of the questions these studies generate; ones that could potentially be consequential. This volume of essays did make me think of Muslim bioethics as a whole and it dawned on me how highly monochromatic and deeply normative it is as a field and how it lacks internal diversity. Islamic law and ethical resources are in full supply, but they are not tested against application in lived human experiences.

One key aspect of this book is the importance of rhetoric. Rhetoric can do many things, but, among other things, *After the Genome* teaches us that language can help us understand whether we are heading for perfectionism in our moral culture or whether are we seeking something more ambivalent. In this collection of essays, the pessimism surrounding the post-genome world abounds with some sobering views on the constructive possibilities of genomic research.

Historically-speaking, Muslim thought is not unfamiliar with the process of language and the impact of the modern linguistic and rhetorical turn on Muslim religious and moral thought, even though such studies have been in short supply in modern times. Language and rhetoric, by inference, is first and foremost a tool, the editors Hyde and Herrick remind us, which facilitates meaning and understanding.⁹ To think of language as a tool or a technology is almost counter-intuitive to many language-users, especially to many Muslim theologians and ethicists who pay insufficient attention to these phenomena. Take the example of the Arabic language. Arabic grammarians thought of grammar as a form of ethics (*adab*) since it encouraged one to foster

⁹ James A., Herrick, and Michael J. Hyde, "Editors' Introduction: A Language for Our Biotechnological Future," in *After the genome a language for our biotechnological future*, ed. James A. Herrick and Michael J. Hyde (Waco, TX: Baylor University, 2013), Kindle Locations 102.

efficiency and character in articulation.¹⁰ The pre-eminent jurist Muhammad bin Idrīs al-Shāfi‘ī (d. 820) had different uses for the word “explication” (*bayān*). For him, explication was a discrete hermeneutical register that shaped Islamic ethical and legal thinking in specific ways. A few decades after Shāfi‘ī, the great literary figure ‘Amr bin Bahr al-Jāhiz (d. 868) offered a different path to think about the meaning and purposes of texts.¹¹ For Shāfi‘ī, the word *bayān*, as a perspicuous and comprehensive statement by its very nature, welded together the Qur’ānic and prophetic teachings into an address to humanity who are required to think about God’s revelation as an enormous legislative statement.¹² Jāhiz, on the contrary, is less specific. He thinks of the term “perspicuous declaration” (*bayān*), as “a comprehensive noun that unveils the intention or meaning of any hidden thing” and declares explication to be a more general form of articulation unencumbered by deep theological hermeneutics.¹³ Language and rhetoric are not simply crucial components to scientific endeavors as the essays in this volume show, but they also play a decisive role in the conceptualization of religious and moral discourse.

A future study that documents the many ways that a biotechnological imaginary has entered the lifeworld of the inhabitants of the Gulf, through their short stories, novels, poetry, film and other forms of media will be of immense value. Such studies will help us understand how both rhetoric and the lived practices of Muslims in the Gulf shape the self-understandings of such communities. Furthermore, a more careful and critical rhetorical analysis of the juridical opinions, fatwas, that were issued, or the monographs produced in the Gulf region, is vitally required. When religious experts deliberate on gene-technology from an Islamic legal and theological perspective, scholars will be curious to learn how they frame the new technologies in their moral horizons and how these technologies translate into their specific juro-moral idioms and conceptions. In other words, we need to have a better grasp of the moral anthropology at work in the writings and methodologies of the religious experts as well as that of medical practitioners.

¹⁰ Maḥram Āfandī, ‘Abd Allāh Āfandī, and al-Sayyid Sa‘ūd ‘Alī, *Maḥram Āfandī ‘arabī sharḥ Sharḥ Mullā Jāmī*, 2 vols. (Deoband, UP: al-Maktaba al-Ashrafiya, n.d.). 1:4.

¹¹ Whether *bayān* is a term of elucidation for the “legislative statement” God, as Joseph Lowry states, in my view it is better described as a “perspicuous declaration,” meaning a clear and comprehensive statement.

¹² Joseph E. Lowry, *Early Islamic legal theory the Risāla of Muḥammad ibn Idrīs al-Shāfi‘ī* (Leiden;Boston: Brill, 2007). 25-26.

¹³ Jāhiz and Muwaffaq Shihāb al-Dīn, *al-Bayān wa-al-tabyīn*, 4 vols. (Beirut: Dār al-Kutub al-‘Ilmīya, 1998). 1:60.

Gene technology also generates a new sensibility of what is the *nomos*, the rules operative in the world of nature. How these rules of nature now syncopate with the rules of God, in terms of inherited and emerging Muslim theologies and moralities, raise new questions. In other words, to what extent are we already determined in our behavior and performance by our genes? What is the boundary between human freedom and natural determinism? With our heightened awareness and knowledge of the determinative nature of the human genome, new questions arise about how theodicy (*al-‘adāla al-ilāhīya*) operates in the post-genome world. All of these aspects remain to be investigated from a perspective of Muslim moral theology.

One of the notable features, of at least some of the essays of this edited volume under review, is the fact that many essays eschewed methodological naturalism. Methodological naturalism is the repudiation of the claim that scientific knowledge automatically supports moral meanings. That is a lesson the IGGR project could also take seriously. Too often, it has been observed, many Muslim physicians and persons with some scientific knowledge in a fit of piety and devotion hastily relate their scientific knowledge to moral meanings derived from either the Muslim scripture or a citation of tradition. This is nothing more than rank apologetics and serve no reliable knowledge function. But it is indeed a form of rhetoric deserving of study in order to document the deep moral and psychic concerns harbored by actors, especially religious and scientific experts, who are role-players and who are embedded in Muslim majority contexts. Clearly, the only meaning scientific inquiry yields is a materialistic causality. The challenge, then, is to configure how this knowledge derived from materialistic causality then relates to moral concerns in a complex, non-mechanical, manner. This ought to be the benchmark and desideratum of any serious moral and ethics research program. Yet, linking one kind of scientific insight to a single moral or ethical teaching provided by tradition often lacks integrity and intellectual rigor. What a robust program of inquiry does require are more subtle processes and more layered approaches that accumulate information in order to theorize a modicum of ethical ambivalence, and identify pathways to moral openness and new moral possibilities in the light of what we know and what we do not know.

The IGGR could benefit from a set of research essays that document the genome-related rhetoric in the Gulf region from different perspectives. It would require a wide-ranging study that addresses the rhetoric and meaning of religious discourses in order to map their presumptions

and understandings of science, alongside inquiries about deeper moral concerns and conditions of optimism. A careful study of policy documents, government legislation pertaining to genome-science and therapies, popular cultural artifacts and secular debates generated in the Gulf region would be most helpful. It would also require documenting and assessing public opinion with respect to the reception of genomic technologies in the cultural, moral, political and theological imaginaries of the diverse communities inhabiting the Gulf region. The big questions for many moral philosophers and theologians include: are we going to lament the future human person who is emerging out of the knowledge explosion produced by our knowledge of the human genome? Are we going to be pessimistic? Or, will we acclimate to radical change, in the same way we adapted to the motor vehicle, leaving behind the chariot, or the way we adapted to flying air planes as we left behind slow-moving ships on the oceans?

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