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HUMAN EVOLUTION AS A FRAMEWORK FOR THE THEMES OF SCIENCE FICTION

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This article integrates different discussions of theme into a system to classify the literature of Science Fiction (SF). Its aim is to provide a set of tools to distinguish SF themes from SF subgenres and to recognize SF as future speculation on humanity's evolution. Due to its speculative nature as a literature of ideas of Barthell (2012), SF emphasizes theme above other literary devices of Gunn (2011) and Klein (2014). SF is described as the literature of change, because its themes concern future transformations and their consequence on humanity. Wolfe points out that commonly used descriptors of SF mix terms of classification with terms of theme (Vonarburg, 2010). The resulting confusion between theme and subgenre is pervasive and spans from advice to SF writers (e.g. Gilks, Fleming & Allen) to literary criticism collections (e.g. James & Mendlesohn). The discussion of theme is absent from collaborative works like Bould, Butler, Robert and Vint or Gunn and from

curricular design aids like Booker and Thomas or Sawyer and Wright. Given its importance to SF, a renewed systematization of theme is warranted. As the literature of change, SF looks to where humanity is headed, implying a parallel to where it came from. SF themes trace much further back in time than post-Renaissance inventions and explorations (Gunn, 2011) or utopias (Vonarburg, 2010). They reflect evolutionary stages of mankind, relating to matters of import to early humans.

In order to use Human Evolution as a basis for thematic analysis, key benchmarks in this evolution must first be detailed. Seven key benchmarks in human evolution are the following:

1. Tools. Tool making was long considered the benchmark that defined the beginning of genus Homo, some 2.4 million years ago.

2. Setting. African Homo erectus is the first hominin morphologically equipped to walk and run over long distances, and adapted to foraging for food in varied ecosystems. They are the first early human to disperse out of Africa, explored settings as far removed as the Caucasus, Indonesia and China.

3. Others. Jump forward to 200,000 years ago, when modern Homo sapiens appeared.

4. Dimension. By 50,000 years ago, Homo sapiens had become behaviourally modern humans. They exhibited an increased reliance on symbolic thought, as attested by personal ornaments such as shell beads and burials with grave offerings. The latter is early evidence of belief in an invisible dimension, the realm of the spirits.

5. Essence. As early as 30,000 years ago, the representation of entoptic phenomena in cave paintings attest to the onset of shamanism. Ethnographic studies suggest that ancient shamans achieved altered states of consciousness in order to communicate with spirits. In the eyes of their people, shamans thus transformed from ordinary humans to beings with supernatural powers.

6. Rules. The end of the last ice age saw the unrelated innovations of sedentism and domestication of plants ultimately result in true agriculture, for instance 10,500 years ago in the Middle-East. Over the next two thousand years, the intensification of agriculture led populations to concentrate into villages and towns, larger-scale sedentary communities that enabled the diversification of labor, the necessity to manage social relations, and the emergence of some form of authority to enforce rules of behavior.

7. Habitat. Intensive agriculture led to radical modifications of the environment, notably irrigation and terracing. Despite the increase risk of infectious disease in higher density populations, towns became city-states such as in Sumer 5000 years ago. The development of cities exacerbated ecological impacts such as the clearing of woodlands, the provisioning for clean water, and the accumulation of waste.

Results of the Research

The advent of writing allowed humans to document and transmit ideas outside their own memory. Writing answered the need for accounting and commemorating events, but was soon used for literary creations in the broadest sense.

From myths and stories of later records, we observe that the key benchmarks of prehistory carried over to historical times. To wit: Daedalus and Icarus (tools), The Voyage of Unamun (setting), Homer's Odyssey (others), The Egyptian Book of the Dead (dimension), The Sumerian Epic of Gilgamesh (essence), and Plato's Republic (rules). As history progressed, so did the writings on the same topics: Da Vinci's Codex Atlanticus (tools), The Travels of Marco Polo (setting), The Seven Voyages of Sinbad the Sailor (others), Dante's Divine Comedy (dimension), Le Morte d'Arthur (essence), and Thomas More's Utopia (rules).

Writing allowed civilizations to record the state of the world, including changes brought about by inventions and explorations. The European Renaissance began five centuries of gradual innovation, a momentum that culminated with the Industrial Revolution in the mid-19th Century. Historical change had gone from imperceptible to conspicuous: the future will be different (Gunn, 2011). Thus, science fiction emerged, just as change and its consequences clamoured to be addressed.

SF picked up the contemporary versions of the age-old preoccupations – inventions, explorations, and others we meet, invisible dimensions and how to master them, the societies and environments we live in – and projected them in to the future.

This is best understood by applying what will be called the Metaphor of Change. The idea, as first put forward by Gunn, is that an SF theme "incorporates a basic aspect of change — something new has been introduced in the experience". Gunn's own examples are discussed in detail in the next section, but he clearly implies an experience that is contemporary with the storywriter.

Starting instead from the experience of early humans, the Metaphor of Change spans from prehistoric to future times. Thus, we progress from stone implements to intelligent machines (tools), from reaching the next

valley to exploring the cosmos (setting), from encountering other tribes and hominids to meeting aliens (others), from divining the future to time travel (dimension), from shamans dealing in the supernatural to mutants with superpowers (essence), from loose-knit bands of people to finely structured utopias (rules), and from waste accumulation within village walls to radioactive wastelands (habitat).

Several schemas have been proposed over the years to analyze the themes in SF. The four selected herein represent different approaches to the problem.

The first is an insider's view. SF authors Gordon Dickson and James Gunn discuss theme in SF, listing eleven in all. Their combined experience as active participants in the vast conversation of written SF brings a semi-historical perspective to the subject, one that remains essential to the understanding of the SF genre. Gunn later published a definitive version of the list (Gunn, 2011). Another insider's view is found in Del Rey's interviews, although the proposed list of themes appears somewhat idiosyncratic, with themes like Biology and Stargates.

The second is the anthologist's view. Using SF extant works in English, many of them classics, senior French editors Gérard Klein, Jacques Goimard, and Demètre Iokamidis put together a multi-volume anthology showcasing the themes of SF, with each volume including an essay dedicated to its particular theme (Klein, 2014). The third is the structural approach. In a book-length analysis, Gary K. Wolfe presents SF as the means by which a technological society deals with the tension between the known and the unknown. Wolfe summarizes this conflict with five icons: the Spaceship, the City, the Wasteland, the Robot, and the Monster. The strength of this imagery, and how easily we recognize it as SF, suggests a direct link to the genre's main themes. Inasmuch as the notion of archetype can be applied to genre fiction, Wolfe's icons provide archetypal images of science fiction.

The fourth approach is multidisciplinary. Author, translator and teacher Élisabeth Vonarburg (Vonarburg, 2010) uses myths, history, and psychoanalytical concepts to derive four clusters of themes, which encompass two-dozen subthemes. While these clusters are somewhat heterogeneous, her text also emphasizes how SF subthemes often merge into each other.

The themes mostly flow from one to the next. Wonderful Inventions is linked to Pandora's box, from which comes both despair (War) and hope (Progress). Super Powers describes almost inhuman abilities, leading to Man and Alien, the truly inhuman. In that last segment, Dickson points out the purpose of many an alien environment in SF is to be dominated by the protagonist, a meaning very similar to that assigned to Man and his Environment – which one of the two will dominate – that suggests there is some overlap between themes. Another interesting point is how SF writers define Man and the Future as a thought experiment that takes a contemporary problem, and puts in a completely fresh context. Since this is precisely how they defined science fiction itself at the onset of the interview, Man and the Future becomes a catchall. Several other themes in Alternate Worlds may also be paired: Man and His Society with Progress, Man and the Machine with The Wonders of Science, Man and his Environment to Cataclysm, Superman with Super Powers. Gunn further confirms this by applying the change principle to only one member of each pair, another clue that one theme subsumes the other. With Progress and The Wonders of Science already deemed too general, and Superman defined by Gunn as a subset of Super Powers, this group yields four themes: Man and His Society (includes utopia/dystopia), Man and the Machine, Man and his Environment (Cataclysm), and Super Powers (Superman). Adding Far Traveling, Man and Alien, and Man and Religion, the Dickson and Gunn/Alternate Worlds list is synthesized to a total of seven major themes that can be considered truly independent of each other.

Later, the 12-Volume antology, edited in France, intent to exemplify the major themes of SF using stories, sixteen per volume on average, selected to cover a wide range of possibilities on that particular theme, and with a five to fifteen-page introductory essay tracing the theme's link to history or literature, and its importance in the SF corpus. The anthologists were quick to point out that many stories addressed more than one theme, making the choice of the volume in which it appears an editorial decision. There is a dialectic aspect in the selection and ordering of texts, which is made explicit in each story's introduction.

The twelve volumes are as follows: 1. Extraterrestrials; 2. Robots; 3. Astronauts; 4. Mutants; 5. End of the World; 6. Machines; 7. Planets; 8. Powers; 9. Tomorrow; 10. Time Travel; 11. Wrong-Way; 12. Galactic.

For example, the Time Travel stories are presented in order of increasing complexity, making this collection a practical treatise on the subject. The second half of its Table of Contents reads: "The Man Who Came Early" (by Poul Anderson), "Dark Interlude" (Mack Reynolds and Fredric Brown), "Vintage Season" (C. L. Moore), "Experiment" (Fredric Brown), "Me, Myself and I" (William Tenn), "Hindsight" (Jack

Williamson), "The Discovery of Morniel Mathaway" (William Tenn), "Time Patrol" (Poul Anderson), "Of Time and Third Avenue" (Alfred Bester), "All You Zombies" (Robert A. Heinlein).

The Wrong-Way theme relates to humour. By the anthologists' own admission – in the general introduction to the series, reprinted in each of the twelve volumes – this is a mixture of the other eleven themes, not a theme unto itself. Cultural biases may explain why humorous stories must be segregated from the others, so as not to contaminate serious analysis. This general introduction also makes clear that the anthologists consider the eleven subjects to be the most representative themes of science fiction, the ones that give it unity as a genre.

With the initial success of these twelve volumes, the editors published another twenty-four, all prefaced according to the new topics they were meant to exemplify: 1. Parapsychological; 2. Survivors; 3. End of Time; 4. Ecological; 5. Invaders; 6. Space Travel; 7. Medical Doctors; 8. The Divine; 9. 4th Dimension; 10. Immortals; 11. Automatons; 12. Supermen; 13. Creatures; 14. Future Societies; 15. Strange Worlds; 16. Rebels; 17. Untrue; 18. Paradoxical; 19. Mirages; 20. Year 2000; 21. Catastrophes; 22. Future Wars; 23. Mechanical; 24. Sex Fiction.

The general introduction to the series has disappeared, leading one to conclude that these twenty-four new volumes either develop the original major themes, or explore related subthemes. Indeed the titles and contents of many volumes suggest immediate pairings to that effect: Powers with Supermen, Automatons with Machines, Space Travel with Astronauts, Extraterrestrials with Invaders, Rebels with Future Societies, Survivors with End of the World, and so on.

Examining the tables of contents, as reflected in the volume titles, elucidates less obvious themes. The End of Time, nominally about the ultimate fate of humankind in the very far future, often implies that eons alone will provide the necessary impetus for the transformation of humans, a subject matter similar to Mutants.

Ecological stories are, as the title suggests, about the environment we unwittingly damage as we modify it to suit our needs. They are modern Catastrophes of the slower kind, with pollution or global warming replacing a nuclear End of the World as the immediate threat. The Mirages theme contains stories that question reality or explore other dimensions of space. Most stories in the 4th Dimension volume do the same, with a few using time as a fourth dimension, à la Einstein, and therefore relating to Time Travel. The Medical Doctors theme is about life and death, and science's push to extend one and prevent the other. This puts it in the realm of transforming humans, the same category as stories about Immortals.

The volume on The Divine deals with our relationship to it, although it also contains stories about local gods, meaning very powerful aliens. As for the even more unusual volume titles, Untrue contains more humorous stories, and Sex Fiction encompasses future sex, not with aliens but in different social contexts.

A comparison of the volume titles with their actual contents also reveals a stated intent that quickly gives way to a more creative, some would say loose, interpretation of the anthologists' own guidelines. Naturally, this does not alter the value of any given story.

We can easily find some duplications and may reduce all themes to the following thematic groups:

1. Extraterrestrials – Invaders – Creatures
2. Robots – Machines – Automatons – Mechanical
3. Astronauts – Space Travel – Planets – Strange Worlds – Galactic
4. End of the World – Survivors – Catastrophes – Ecological – Future Wars
5. Powers – Mutants – Parapsychological – Supermen – Immortals – End of Time – M.D.s
6. Tomorrow – Future Societies – Rebels – Year 2000 – Sex Fiction
7. Time Travel – Paradoxical
8. 4th Dimension – Mirages

Conclusion

This article has shown how the seven benchmarks of human evolution permeate humanity's stories, spanning from early myths and proto-literature to modern Science Fiction. It has also illustrated how different approaches to theme in SF exhibit such similarities as to immediately suggest eight major themes. Moreover, it has demonstrated that the few remaining themes that may on the surface appear unrelated partake of a single, seventh one.

Whether these seven themes are mutually exclusive and jointly exhaustive is beyond the scope of this paper. However, the application of the seven evolution benchmarks to speculation about the future does provide a rationale for the suggested existence of seven, and only seven, major themes of SF:

1. Machine Intelligence: intelligent tools, including their interface with humans.
2. Space Faring: humanity traveling and living in the cosmos.

3. Extraterrestrials: non-human intelligent life, evolved on other worlds.
4. Inter-Dimensional: different spacetimes, such as time travel and alternate realities.
5. Trans-Human: humans modified by intrinsic mental powers and/or physical alteration.
6. Newtopia: society restructured via new rules and social constructs (continuity is implied).
7. Devastation: wastelands and survivors, post-cataclysm or otherwise (rupture is implied).

Main thematic categories by no means imply that stories should be confined to a single one, especially in longer forms. For example, A Space Odyssey by Kubrick incorporates six themes as major story elements: the HAL-9000 computer (tools), the Moon and Jupiter Mission sequences (setting), the four black Monoliths, known from the novel version to be products of superior alien minds, the Star Gate sequence, a clear candidate for other spacetimes (dimension), the final Starchild as a transformed human (essence), and his use of newfound abilities to stop a nuclear exchange (habitat). The Dawn of Man sequence ends with what is arguably the most famous match cut. A prehistoric man throws an antelope thighbone up in the air, which instantly becomes an orbital satellite two million years later. One may argue that this precisely illustrates the contention that the seven major themes of science fiction originate from the evolutionary benchmarks of humankind.

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Аннотация

ИНСОНИЯТ ЭВОЛЮЦИЯСИ–ИЛМИЙ-ФАНТАСТИК АДАБИЁТ МАВЗУЛАРИНИНГ МАНБАИ СИФАТИДА

Р.Ш. Ахмедов

Мақола инсоният эволюциясининг етти босқичи ва илмий-фантастик адабиёт мавзуларининг классификациясига бағишланган. Тадқиқотимиз илмий-фантастик адабиётда бўлган мавзуларни, инсоният эволюциясига боғлаб, классификация қилиш имкониятини беради. Натижада, эволюциясининг етти босқичи илмий-фантастик адабиётда бўлган еттита асосий тематик категориялар билан солиштирилган.

Таянч сўзлар: инсоният эволюцияси, илмий-фантастик адабиёт, тематик категория, етти босқич, классификация.

Аннотация

ЭВОЛЮЦИЯ ЧЕЛОВЕЧЕСТВА КАК ИСТОЧНИК ТЕМ ДЛЯ НАУЧНО-ФАНТАСТИЧЕСКОЙ ЛИТЕРАТУРЫ

Р.Ш. Ахмедов

Данная статья посвящена сравнительному анализу семи этапов эволюции человечества и классификации тем научно-фантастических произведений. Исследование предоставляет научные инструменты, при помощи которых появляется возможность классифицировать темы НФ согласно периодам человеческой эволюции. Таким образом, семь периодов человеческой эволюции соотнесены с семью тематическими категориями в научно-фантастической литературе.

Ключевые слова: эволюции человечества, научно-фантастическая литература, тематическая категория, семь этапов, классификация.

Summary

HUMAN EVOLUTION AS A FRAMEWORK FOR THE THEMES OF SCIENCE FICTION

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This article is devoted to seven benchmarks of human evolution compared to classification of the themes in the literature of Science Fiction. This research provides a set of scientific tools by which SF themes can be classified according to the periods of humanity's evolution as a species. Thus, seven periods of human evolution are correlated to seven thematic categories within Science Fiction literature.

Key words: human evolution, Science Fiction, thematic categories, seven benchmarks, classification.