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INTERSECTIONS OF SCIENCE, TECHNOLOGY, AND POETRY IN THE WORKS OF PETER PAYACK, ANDREW JORON, AND GENE WOLFE

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Abstract

Science fiction poetry is a relatively new genre having emerged with the scientific and technological developments brought about by the Industrial Revolution. It is distinguished basically from the traditional poetry in that it alters traditional poetic forms and has a speculative content enriched by scientific and technological terms. Peter Payack's "The Migration of Darkness," Andrew Joron's "The Sonic Flowerfall of Primes," and Gene Wolfe's "The Computer Iterates the Greater Trumps" are the examples of science fiction poetry that combine the elements of science fiction and traditional poetry. While Payack's and Joron's poems are discerned with their proselike lines having a science fictional content, Wolfe's poem resembles more a scientific paper having numbers and formulas. Since the poems discuss mainly the relationship between science, human beings and machines, they are dominated by a speculative tone, scientific notions and images. Hence, they deviate from the norms of conventional poems that deal with the thoughts, emotions and experiences of individuals in a lyrical way. Nonetheless, the poems have an interaction with the traditional poetry as they use the conventional verse form and treat usual human emotions in a quasi-lyrical way. The aim of the present study is to show that the mentioned poems experiment with classical poetic and narrative forms and imageries to debate over the impacts of scientific and technological developments on human life.

Keywords: Peter Payack, Andrew Joron, Gene Wolfe, "The Migration of Darkness", "The Sonic Flowerfall of Primes", "The Computer Iterates the Greater Trumps".

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**PETER PAYACK, ANDREW JORON VE GENE WOLFE'UN
ESERLERİNDE BİLİM, TEKNOLOJİ VE ŞİİRİN KESİŞİMLERİ****Öz**

Bilim kurgu şiiri, Endüstri Devrimi'nin getirdiği bilimsel ve teknolojik gelişmelerle ortaya çıkan nispeten yeni bir türdür. Geleneksel şiir formlarına farklı boyut kazandırdığından ve bilimsel ve teknolojik terimlerle zenginleştirilmiş düşünsel bir içeriğe sahip olduğundan temel olarak geleneksel şiirden ayırt edilir. Peter Payack'ın "The Migration of Darkness", Andrew Joron'un "The Sonic Flowerfall of Primes" ve Gene Wolfe'un "The Computer Iterates the Greater Trumps" adlı eserleri bilim kurgu ve geleneksel şiir unsurlarını birleştiren bilim kurgu şiirinin örnekleridir. Payack'ın ve Joron'un şiirleri, bilim kurgusal içeriğe sahip düzyazıya benzeyen dizeleriyle ayırt edilirken Wolfe'un şiiri sayıları ve formülleri olan bilimsel bir makaleye daha çok benzer. Çoğunlukla bilim, insan ve makineler arasındaki ilişkiyi tartıştıklarından şiirlerde düşünsel bir üslup, bilimsel kavramlar ve imgeler hâkimdir. Bu nedenle, bireylerin düşüncelerini, duygularını ve deneyimlerini lirik bir şekilde ele alan geleneksel şiirlerin kurallarının dışına çıkarlar. Bununla birlikte, şiirler geleneksel nazım biçimini kullandıklarından ve bilindik insani duyguları yarı lirik bir şekilde ele aldıklarından geleneksel şiir ile etkileşime girerler. Bu çalışmanın amacı, bahsi geçen şiirlerin bilimsel ve teknolojik gelişmelerin insan yaşamına etkilerini tartışmak için klasik şiirsel ve anlatı biçimleri ve imgeleri üzerinde denemeler yaptıklarını göstermektir.

Anahtar Kelimeler: Peter Payack, Andrew Joron, Gene Wolfe, "The Migration of Darkness", "The Sonic Flowerfall of Primes", "The Computer Iterates the Greater Trumps."

INTRODUCTION

The developments in science and technology have introduced changes into poetry writing, and science fiction poetry is a genre on which the impacts of scientific and technological developments can be well observed. Introduction of scientific and technological themes and terms into poetry, in turn, has enabled the poets to experiment with traditional forms and contents. Science fiction poems are characterised by speculative topics, an argumentative discourse, a frequent use of scientific and technical terms, and a combination of a mechanical language with a figurative language. The changes observed in the poems have a functional quality for they convey the changes brought about by science and technology.

The history of science fiction poetry is traced back to the times of gods and goddesses and to the world of mythology (Dutcher, 2005). The fictional worlds and characters in such works as *Gilgamesh* and *Beowulf* are the sources of inspiration for science fiction writers (Dutcher, 2005). However, it is with the Industrial Revolution that poems started to deal with scientific terms and themes, and Byron's "Darkness," which has an apocalyptic theme, is considered to be an early example of modern science fiction poetry (Dutcher, 2005). Still, science fiction poetry appeared as a distinctive genre in 1978 with the foundation of the Science Fiction Poetry Association whose mission is to encourage poets to merge poetry

with science (Green, 2009). The organization created the Rhyslings, a poetry award for the best long and short poems dealing with science and fantasy (Green, 2009). Although there are not strict rules for science fiction poetry, the literary qualities of the poems winning the Rhysling establish the basic criteria for the genre (Yolen, 2005). Suzette Haden Elgin, the founder of the Science Fiction Poetry Association, describes science fiction poem as a poem including both scientific and narrative elements (Green, 2009). Science fiction poems basically use the concepts developed by technicians and scientists (Jennings, 2003), and deal both with the real and the fantastic, thus the topics of the poems range from computers, and spacecrafts to such imaginary stories as Camelot and Daedalus (Yolen, 2005). The poems are also characterised by “[the] little emphasis on characters in conflict or dramatic action,” (Jennings, 2003) and they experiment with such traditional forms as sonnet and blank verse (Yolen, 2005).

Science fiction poems are speculative, but each poem having a speculative discourse might not be an example of the genre because it is necessary that the poems should concern with the science fictional, fantastical or horrifying (Yolen, 2005). The poems also show a variety of tones as they may be challenging, exhilarating, horrific, or amusing (Yolen, 2005). Moreover, science fiction poetry is distinguished from the traditional poetry, which uses metaphors formed through established literal resemblances, in that it has “much deeper metaphorical material” (Gossin, 2002: 406). In science fiction poems, technological instruments serve as “concrete metaphors, expressing in form and function the idea and the desire- and even the unconscious motivation- of their makers” (Gossin, 2002: 406). The poets use metaphors derived from the mechanical worlds of science and technology, but they might express their personal feelings and thoughts, which gives a quasi-lyrical quality to their poems (Chu, 2010). Peter Payack’s “The Migration of Darkness,” Andrew Joron’s “The Sonic Flowerfall of Primes,” and Gene Wolfe’s “The Computer Iterates the Greater Trumps” have the essential features of science fiction poetry. The poems are studied in the following sections to argue that they experiment with the formal and narrative structure of conventional poetry to discuss the relationship between science, technology and human beings.

“THE MIGRATION OF DARKNESS”

On the surface, Peter Payack’s “The Migration of Darkness” explains the nature of darkness by using scientific and technological terms. However, the poem’s subtext debates over the impact of science and technology on the natural world through adopting an argumentative style. Since Payack chooses a speculative style, he uses a proselike structure composed of lines, which form complete sentences. In so doing, he argues his claims about the components of darkness and the invasion of nature by technological means without feeling restrained by the conventional poetic structure having a specific line pattern:

Darkness, it has been found, is composed
of an almost infinite number of particles,
which roost and reproduce up north
where they have fewer natural enemies:
Forest fires, lampposts, lasers, blazing sunlight,
torches, candles, lighthouses, limelight, and electricity
are relatively rare in the polar regions. (Payack, 2005: 40)

The proselike structure makes the poem resemble a scientific writing that has an argumentative discourse. Payack argues about the adverse impacts of science and technology, and claims that such scientific and technological means as “lampposts,” “lasers,” and “limelight” destroy the peace in nature since they disperse darkness, a natural phenomenon, by their artificial light (2005: 40). Moreover, he claims that darkness associated with unspoiled nature can be found in the Polar Regions, which are not corrupted by man-made technologies. Nonetheless, the speculative tone of the poem is mitigated by the use of literary figures and images appealing to emotions. Although the poet, like a scientist, treats darkness as a thing to be analysed, he compares its components with birds, which migrate to find a safe place for reproduction. Moreover, sources of light are given human quality for they are considered the “natural enemies” of darkness (Payack, 2005: 40). In these respects, the poem has also a lyrical aspect fostered through imaginative and personal metaphors.

Although metaphoric language gives an artistic quality to the poem, its narrative voice is devoid of lyricity. Instead of a lyrical “I,” Payack prefers to use a distanced narrative voice. As the poet does not reveal his own experiences and emotions through an “I” speaker, he creates a figurative distance between himself and the subject he deals with, namely darkness. Hence, Payack is more like a scientist that shares his observations about the nature of darkness. He argues that there is a difference between “[the] specks of darkness [which] migrate” after sunset and the ones that are “less adventurous / or downright lazy” (2005: 40). The poet calls the latter “shadows” which “have a somewhat shorter life span” (2005: 40). According to him, the fact that “[e]ach evening, shortly after sunset, / darkness covers the land” has bewildered philosophers for ages (2005: 40). However, he states that “the mechanism for this occurrence / has now been identified” as “migration” thanks to the developments in science and technology (2005: 40). Consequently, Payack is more interested in explaining the nature of darkness than achieving an artistic effect. Therefore, the literary devices he employs have a scientific and technical nature. For instance, he refers to a biological fact when he likens “[the] lightweight bits of darkness / flock[ing] together and fly[ing] south each evening” to the birds immigrating to the south in winter (2005: 40). Moreover, Payack (2005) personifies the shadows as a person who is “less

adventurous / or downright lazy” (40) in order to make his readers visualise the fact that unlike the clusters of darkness disappearing in sunlight, shadows linger on earth even after the rise of the sun. Accordingly, Payack deviates from the norms of traditional poetry to endow a scientific quality to his poem and to argue about the impacts of scientific and technological enterprises on the natural environment.

“THE SONIC FLOWERFALL OF PRIMES”

Andrew Joron’s “The Sonic Flowerfall of Primes” is another science fiction poem that has a prosaic and scientific style. Joron’s poem, which is about the love affair between two satellites, is fairly long since it is composed of 241 lines. However, Joron, like Payack, constitutes each line to form a sentence with the following lines. Therefore, although the poem has lines beginning with a capital letter, they are not separated from their respective subsequent counterparts:

We welcome these cool auspicious hours
A red dusk on the radar promenades
A muted gong: and like ghosts accusing us
This agape’s guests appear
Surely to ascend again
Their angry forum—O golden solons
From a metal-poor Utopia
We shall dismantle them anon (Joron, 2005: 35)

The poet does not use any full stop or comma after the lines, which gives the impression that the lines continue into one another. The flowing lines, on the other hand, enlarge the capacity of the poem to be a forum for the discussion of several topics like adverse effects of scientific and technological developments on nature and human beings, and the conflict between reason and emotions. The poem is also written in a language full of technical terms unfamiliar to an average reader, like “the radar promenades,” “[p]iquant telemetries” and “verdigris’d scanners” (Joron, 2005: 35). The use of technical words complicates the language of the poem and makes it hard for the readers foreign to scientific and technological terms to understand easily the content of the poem. Moreover, it makes the poem resemble a technical and professional composition rather than a poetic work. The use of a complicated language, in turn, enables the poet to discuss the socio-cultural crisis experienced in the scientific age that introduces human beings to new notions and technologies.

Joron saves his work from being a mere scientific writing through setting a love story against the mechanical environment dominated by artificial machines. The tragic love affair between the satellites modulates the description of the

mechanic age and lends a quasi-lyrical tone to the narrative. The poet also borrows conventions from pastoral poetry that is distinguished with a rural, peaceful setting inhabited by shepherds and shepherdesses, and a combination of narration and dialogues which reveal the ardent feelings of a shepherd for his lover (Drury, 2006). Although Joron's poem does not have a pastoral landscape, it resembles a pastoral poem in that it has a male figure that expresses his love through playing his oud. However, Joron's treatment of love is against the pastoral conventions because the lovers in his poem are not human beings but two heterosexual satellites, which are separated from one another. Being man-made machines, the satellites do not have corporeal human bodies endowed with warmth and unrestrained emotions, but they have metal forms that have "[an] identical [d]esign" (Joron, 2005: 36). Since the satellites have been programmed and manufactured by human labour, their feelings and manners are controlled and constrained. The female satellite, "developed as the back-up unit," (Joron, 2005: 36) shares the male satellite's emotions as her design is identical to her partner's:

... she shared
His programming, smiled or sorrowed / and grew ill
On-line, the thread of her own breath broken
While he played one night upon his oud
A gold untuned Eternal thread (Joron, 2005: 36)

Lovers who suffer from separation and a mourner playing the oud for his beloved are pastoral and romantic elements. Nonetheless, the love of the satellites is quite mechanical and devoid of the passion found in pastoral poems dealing with the stories of ardent shepherds/shepherdesses. The satellites "felt the other's suffering," but they "remained distrustful of their symmetried desires" (Joron, 2005: 36). There is also no direct verbal communication between the satellites about their feelings, desires or frustrations, which indicates the deterioration of language due to the mechanisation and materialisation brought about by technological progress. Moreover, they are not fervent lovers having a physical love: the male satellite "[has] never touched" the female satellite's metal body through "[h]is studied fingers" (Joron, 2005: 36). The replacement of warm, soft human bodies with cold, metallic bodies of inanimate beings and the designed nature of the satellites herald the decay of romantic love associated with feelings and emotions in the age of science and technology characterised by faith in reason.

The setting of Joron's poem also contrasts with the rustic environment of a conventional pastoral poem. The world delineated in the poem is far from the pastoral world untouched by human intrusion for it has been reshaped by "six-armed towers," and "technologic glaciers" (Joron, 2005: 38). The poet demonstrates that nature has been destroyed by machines, "the mile-high buildings," "metal habitations" and "[p]iquant telemetries" (2005: 37, 35). As a

result, the façade of environment has been transformed: “the heart of continents [is] stilled,” “blossoms of this Sun-heightened music” have been plucked, and “stony stillness” pervades the whole world (Joron, 2005: 35, 36). Pastoral landscape has been replaced by “fine-tooled deserts,” and there is nothing except for “the inanimate horizon,” and “hungering sheep on that once-green hill” (Joron, 2005: 38, 37). Moreover, “[a radio sign’s] static sadly / [e]choes” are heard instead of the echoes of the voices of happy people dancing and singing in the meadows (Joron, 2005: 35). Therefore, the melodies produced by the male satellite’s oud do not touch human heart but “nerve[s] the optic stem” (Joron, 2005: 35). Accordingly, the juxtaposition of the mechanic with the pastoral suggests nostalgia for the pre-technological era when nature was not desolated or ruined by the scientific and technological enterprises of mankind.

The Sonic Flowerfall of Primes deals with a lyrical subject, namely the sad tale of thwarted love between two satellites, but it cannot be considered a traditional lyric, which usually reveals an individual’s feelings and thoughts in a subjective manner (Cuddon, 1999). A distinctive quality of lyric poetry is that it has a lyrical “I”, a term which “refers both to the biographical I of the poet and to a potential I with which the reader may identify” (Grabher, 1998: 53). The lyrical “I” is replaced in Joron’s poem by an anonymous narrator who observes the inner feelings of the satellites from a literal and metaphorical distance. Literally, the narrator looks at the satellites above him/her. The literal distance between them makes it hard for the narrator to observe closely, properly and adequately the mood and emotions of the lovers. The metaphorical distance, on the other hand, is related with the fact that the narrator does not give voice to his/her own personal and experienced feelings but to the feelings of two artificial celestial bodies with which (s)he cannot sympathise truly:

... he [the male satellite] sang for one who sat alone

Her [the female satellite’s] head bent to the stone

Never to know him except as herself

And herself as the embodiment of a star-blind purpose

Separate as two monads, each felt the other’s suffering (Joron, 2005: 36)

The fact that the narrator represents the feelings (s)he does not experience decreases the emotional intensity transmitted by a traditional lyrical speaker who portrays his/her own deep, intense and conflicting emotions for what they are. Consequently, emotional fervour perpetuated by a lyrical poet is diminished by the presence of the third-person narrator. Furthermore, the narrator’s descriptions do not appeal mainly to senses and feelings due to the physical and emotional distance between him/her and the mechanic lovers. Demonstrating the destruction of pastoral and lyric traditions in his poem, Joron enacts the mechanisation of nature

and impersonalisation of human feelings through the advancement of science and technology.

“THE COMPUTER ITERATES THE GREATER TRUMPS”

Gene Wolfe’s “The Computer Iterates the Greater Trumps” has the similar scientific, quasi-lyrical tone sensed in the former two poems. The poem is about a computer which is broken down while commenting on trump cards. It opens with a formula like a scientific or technical document full of rational, concrete and algebraic expressions:

DEMENSION Trumps (21)

Do 1969 1= 1,22

N= 22-1

Trump (N) (Wolfe, 2005: 24)

Wolfe uses FORTRAN programming language, which is mainly employed by scientific and engineering applications instead of the natural language of emotions, used in a traditional lyrical poem (Brown, 1990). Using a programming language in his poem, Wolfe imitates the operation of artificial intelligence. The computer, which has a limited mental capacity, thinks predictably: using the formula, it selects 21 trumps randomly and explains what they mean by counting down from trump 21 to trump 0. Accordingly, the poet shows the difference between human beings and mechanical beings that lack the ability of the former to think in a free, subtle and flexible way.

Not only the language but also the content of Wolfe’s poem bears the influence of scientific writing. The poem, like a scientific work, does not deal with the improbable or the fantastic but with the probable and the plausible. The speaker of the poem is a computer, which makes comments on trump cards and directs some questions to the person whom it calls “Master” (Wolfe, 2005: 24). This image of a humanlike computer making comments and asking questions is fictional, but it is not fantastic as the computers are devices belonging to reality and it might be possible in the future to have a computer like the one described in the poem thanks to rapid scientific and technological developments. Another striking point is that Wolfe does not describe the computer or its master, or the setting because his aim is not to write a descriptive poem but to write a speculative poem through which he can discuss about the advancement of artificial intelligence. In so doing, he encourages the readers to speculate about the future world and the relation between the machines and human beings. Therefore, the questions asked by the computer are actually addressed to the reader:

Trump (11)

Sworded *Justice* weighs us men,

Then, sordid weighs us up again.

Were't not more justice just to slay?

Slaying sans guilt to slay again? (Wolfe, 2005: 25)

As the use of "us men" suggests, the computer does not define itself as a mechanical form. It directs a critical question about the reason why people harm the innocent as if it was a person defending justice rather than a mechanical product obeying the commands of human beings. Hence, the identification of the computer with people implies the closeness which is supposed to grow between robotic creatures and human beings in the future.

Although Wolfe speculates about the role of technology in the development of artificial intelligence, he implies that mental capacities of machines cannot match up with human intelligence. The computer confuses "Ashes to Ashes, Dust to Dust" with "Dust from dust from dust from dust" (Wolfe, 2005: 25). It thrice repeats some words, like "We have been shown" and "so far" (Wolfe, 2005: 25, 26), which is a sign of its confused mind. Its mind gets so exhausted by the end that its statements get fragmented:

Trump (5)

The Emperor for worldly power,

To shake and scream a fleeting hour;

To this a bribe, to that a bullet---

Remember, Mater, the *Falling Tower*?

Trump (4)

The Hierophant, The Pope, The Priest;

Today we fast, tomorrow feast.

The bridegroom was with us yesterday;

The Hierophant remains, at least. (Wolfe, 2005: 26)

The computer comments on the Emperor card and the corruption of power. However, its statements are so fragmented that it is not clearly understood what he means by "Remember, Mater, the Falling Tower?" (Wolfe, 2005: 26). His comment on the fourth card is more obscure. The connection between fasting and feasting is not clearly stated. Moreover, the functions of the bridegroom or the Hierophant are not explained. Wolfe deliberately shows the fragmentation in the computer's speech to make it explicit that language is an organic thing which cannot be used effectively by mechanical minds as a means of communication.

Discussing the mechanisation of language and its reduction to numbers, formulas and symbols, Wolfe questions the capabilities of artificial intelligence in

his poem. The computer comments critically on each trump card, but it crashes when it reads the last card, “The Fool”:

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Trump (0)
***** FOOL *****
errorerrorerrorerror
2323232323232323 (Wolfe, 2005: 26)
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“The Fool” is a symbol of “inevitable ruin,” and the number zero represents “the great mystery [and] the attempt to express the inexpressible” (Conford, 1998: 457). Therefore, working out the meaning of the final card is too hard for a mechanical being. While the computer tries to comprehend the complex nature of chaos represented by “The Fool,” its mind collapses due to mental exhaustion. In this way, the poet shows the superiority of human beings in understanding, treating and articulating subtle problems. Moreover, it is interesting that the poem opens with a formula and closes with an error message accompanied by asterisks and numbers, which indicates that the poem has a mechanical language contrasting with lyricism observed in traditional poems.

The metaphors used in Wolfe’s poem are also quite distinctive from the conventional ones in that they are “integrated with the subtle understanding of physical world offered by technology” (Gossin, 2002: 406). The things that are given romantic and mystic qualities in traditional poems are turned into unromantic and concrete things in the poem: the star becomes “sky ruler by default,” the chariot is called “a Gypsie car,” nature is regarded as “[the] [m]istress of microbes,” (Wolfe, 2005: 24, 26) and the sun is not glorified as the source of light but it is depicted as “[s]o small a house, so large a stove” owing its existence to “[f]usion” and “fission” (Wolfe, 2005: 24). Using a language lacking emotionally expressive metaphors and showing its breakdown at the end of the poem, Wolfe argues that what saves language from being a simple, mechanical device is the complexity of human emotions and intelligence.

CONCLUSION

The study of the selected poems shows that science fiction poetry deviates principally from the classical norms of poetry writing. Proselike lines, a narrative practically devoid of rhythm, musicality and natural images, and scientific argumentative themes are the basic qualities of the science fiction poems. Moreover, “I” speaker that reveals his/her emotions in a subjective way in lyrical poems is replaced by a narrator that observes the characters and events from a literal and metaphorical distance. However, the poems cannot be called pure scientific or technical writings as they are written in a stanzaic form and have figurative verbal images that evince familiar humane feelings in a scientific context. Experimenting with the conventional poetic forms and contents, the poets

speculate about such topics as the conflict between the natural and mechanical, the future of artificial intelligence and the dichotomy between mind and emotions. In these respects, Peter Payack's "The Migration of Darkness," Andrew Joron's "The Sonic Flowerfall of Primes," and Gene Wolfe's "The Computer Iterates the Greater Trumps" mingle scientific terms and speculative narrative style with the essential narrative and formal elements of traditional poetry to discuss the role of scientific and technological enterprises in human life.

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