UNIVERSITY OF JYVÄSKYLÄ

PHYSICS AND METAPHYSICS IN THE *HITCHHIKER* SERIES (1979-1992) BY DOUGLAS ADAMS

A Pro Gradu Thesis

By

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Tutkielman tarkoitus on osoittaa että Douglas Adamsin (1952-2001) humoristinen science fiction-kirjasarja *The Hitchhiker's Guide to the Galaxy* (1979-1992) on saanut runsaasti vaikutteita 1900-luvun teoreettisesta fysiikasta, erityisesti Albert Einsteinin suhteellisuusteorioista ja kvanttimekaniikasta. Brian Greenen *The Elegant Universe* (2000), Stephen Hawkingin *The Universe in a Nutshell* (2001) ja Peter Coveneyn ja Roger Highfieldin *The Arrow of Time* (1991) ovat teoreettisen fysiikan saavutuksia popularisoiden kuvaavia kirjoja. Niiden esittelemiä fysiikan teorioita verrataan Adamsin kirjasarjassa esiintyviin tapahtumiin, ja teorioiden vaikutus kirjasarjaan pyritään osoittamaan. Lisäksi, Helge Kraghin *Quantum Generations* (1999) toimii käsiteltyjen fysiikan teorioiden syntyajankohtaa tarkentavana hakuteoksena.

Tutkielma pyrkii myös kumoamaan Adamsin väitteen jonka mukaan yhtäläisyydet hänen kirjasarjansa tapahtumien ja tieteellisten teorioiden välillä ovat täysin sattumanvaraisia. Väitteen kumoamista oikeutetaan mainitsemalla joitakin M.J. Simpsonin Douglas Adams-elämäkerrassaan *Hitchhiker* (2003) listaamia väritettyjä tarinoita, joita Adams kertoi itsestään. Tutkielman rakenne on kolmiosainen. Ensimmäisessä osassa tiivistetään science fiction-kirjallisuuden genre. Toisessa osassa käsitellään muun muassa Douglas Adamsin elämä ja kirjalliset tuotokset, ja osoitetaan että hänellä oli vaikuttavat tiedot popularisoidun fysiikan alalta. Kolmannessa eli analyysiosassa osoitetaan Adamsin kirjasarjan tapahtumien yhtäläisyys fysiikan teorioiden kanssa. Analyysiosa on edelleen jaettu kolmeen alateemaan, jotka ovat universumin epästabiilius, todennäköisyyksiin perustuva luonne ja metafyysiset ominaisuudet.

Tutkimuksessa todettiin että Adams on erittäin todennäköisesti saanut vaikutteita mainituista fysiikan teorioista. Tutkimustulokset myös kehottavat lukemaan *Hitchhiker*-kirjoja teoreettisen fysiikan ilmiöitä luovasti soveltavana science fiction-huumorikirjasarjana.

Asiasanat: Douglas Adams, science fiction, physics, relativity theory, quantum mechanics.

CONTENT

1 INTRODUCTION

Douglas Adams answered one of the most common questions he was asked in the following way: ”To a student who wished to do a thesis on scientific and philosophical themes in *Hitchhiker's*: A: Most of the ideas in *Hitchhiker's* come from the logic of jokes, and any relation they bear to anything in the real world is usually completely coincidental” (Gaiman 2002: 158). This short and dispiriting answer might discourage a student from doing a thesis on scientific themes in Adams's humoristic science fiction series *Hitchhiker's Guide to the Galaxy* (1979-1992, hereafter *HGG*) and make him change his topic, unless he did not know that Adams actually made up stories about his own life. For instance, almost up to his death in 2001 Adams had managed to convince people that he got the idea for *HGG* in Innsbruck in 1971, while lying drunk under the stars on a field. However, a biography by M.J. Simpson (2003: 340) reveals that the idea actually came to Adams in Greece in 1973. Simpson proceeds to correct several other myths Adams constructed about himself over the years. Adams told numerous stories of his life that drifted further and further from the truth each time repeated, because of distorted memories, or simply for the benefit of a good story. Therefore, not everything Adams said should be taken too seriously, especially if one has good grounds to suspect otherwise.

In his answer Adams obviously hinted that the universe in the *HHG* does not have much to do with the real universe we perceive around us. In Adams's universe a person is faced with extremely unexpected, unbelievable and often non-commonsensical revelations of how the universe functions. For example, the characters can make amazing jumps through time and space, against all logic. This should ring a bell. Anyone who has been in a physics class during the last century or so

will discover that this is very close to the modern view Albert Einstein provided us of our universe. In addition to the three dimensions we have got used to, he gave us a fourth one to move more freely in: time. Einstein's theories gave modern science such amazing concepts as time travel and black holes, which even for people of his own day sounded non-commonsensical.

Thus, in this Pro Gradu thesis I will try to show that the universe in *HHG* in its non-commonsensicality actually does in many ways resemble our universe in the way modern physics sees it. I doubt what Adams claimed in his answer to the student. According to his former teacher, Adams was already good at science in school (Simpson 2003: 24) and, even though he was not a practicing scientist, he even spoke at scientific conventions later on in his life (Simpson 2003: 321). However, it is important to stress that just as my understanding of the physical theories comes from a general reading of popularized books by established physicists such as Stephen Hawking, Adams probably reached his knowledge in the area the same way. I by no means claim that Adams copied Einsteinian scientific theories as such. Through drawing on numerous similarities, I will suggest that Adams was familiar with and influenced by Einstein's relativity theories. I will also aim to show that quantum theory and thermodynamics were other areas of physics Adams had studied to some extent, and that in addition to relativity theories, these areas of theoretical physics were sources of ideas for him as well.

I will start this study by giving some basic information on the genre of science fiction (hereafter also SF or sci-fi) and of Douglas Adams and his works. In the analysis part I intend to describe the non-commonsensicality in Adams's universe in three sub-themes: how it shows as instability; the role that probability has in making the universe

function in a seemingly non-commonsensical way; and finally how the meaning of life is perceived as totally meaningless. Furthermore, I will compare Adams's universe with the current worldview as described by Einstein's relativity theories, quantum mechanics and thermodynamics as these are portrayed in popular literature. I will draw examples of these fields mainly from Brian Greene's *The Elegant Universe (2000),* Stephen Hawking's *The Universe in a Nutshell* (2001) and Peter Coveney's and Roger Highfield's *The Arrow of Time* (1991). In addition, Helge Kragh's *Quantum Generations* (1999) is occasionally used as a reference work for the physical theories as compared to Adams's writing.

In addition to physics, the topic of this study includes the metaphysics in *HGG,* meaning the speculations of fate and the meaning of life. Although these are not usually thought of as highly relevant themes in theoretical physics, I will introduce this theme due to its crucial role in the functions of the universe of *HGG*. Moreover, in many occasions I do expect to find relevant counterparts in theoretical physics for the more metaphysical questions in *HGG*; the metaphysics in *HGG* largely relates to the ideas of multiple universes and multiple histories of the universe, and these are ideas which theoretical physics has also speculated on. Thus, I aim to show that even those themes in *HGG* can be related to physics and thus a possible inspiration to Adams.

In summary, throughout this study my main goal is to show that although Adams did not give theoretical physics substantial credit as an inspiration, it most likely was, given both Adams's well-known knowledge and interest in physics and the numerous, striking similarities with phenomena of theoretical physics identifiable in *HGG*. However, I do admit that due to his humoristic nature, Adams bent and applied the theories in amusing ways that are often far from scientific.

Nevertheless, this does not mean that Adams's understanding of the theories was in any way limited: it only means that he was creative and imaginative enough to see the implications of the theories as a source for abundances of absurd humor.

Hitchhiker's Guide to the Galaxy is a series consisting of five books: *The Hitchhiker's Guide to the Galaxy* (1979, hereafter *HGG1*), *The Restaurant at the End of the Universe* (1980, hereafter *HGG2*), *Life, the Universe and Everything* (1982, hereafter *HGG3*), *So Long, and Thanks for All the Fish* (1984, hereafter *HGG4*) and *Mostly Harmless* (1992, hereafter *HGG5*). Since I have used the collected edition of these books (Adams 1996) for this Pro Gradu thesis, I will use the term *HGG* to refer to the collected edition, which is the whole, five-part series. The collected edition also includes the short story *Young Zaphod Plays it Safe* (1986), but since it is neither an actual part of the series nor in any way incorporated in the storyline of *HGG*, I will not use it as a source for this study. As the novels appear in a collected edition, the pagination of each book continues from where the previous novel ended, and it is this pagination that I will repeat in my citations.

The Science Fiction Research Association (SFRA) is, according to their web page, "the oldest professional organization for the study of science fiction and fantasy literature and film" (SFRA 2006). The association was founded in 1970 and it has a conference on SF studies each year. While the topics of contemporary papers on the field are various, the themes of SFRA conferences from the past few years give an idea where the focus of the study has been in the beginning of the new millennium. The conference in 2003 was about the intersections of history, culture and science fiction, while the theme of 2004 was humor in SF. 2005 meeting was held in Las Vegas and the topic was narrowed down accordingly into the American West and gambling/gaming in SF. The

2006 conference is about genre studies, which means that it will be discussing the blurred boundaries between SF and other genres such as fantasy and horror. The conference of 2006 also seeks essays that stress the interplay between science fiction and the natural, physical and social sciences. (SFRA 2006.)

In light of the recent themes in SF studies mentioned above, the subject of this study is topical. The issues of the conferences held both in 2004 and 2006 are close to the ones of my thesis; the primary source of this study is a work of humorous sci-fi, and the 2006 theme of "interplay between science fiction and physical sciences" also fits the idea of my study. During the writing of this thesis the 2006 conference has not yet been held, and thus it is impossible to draw on possible similar studies presented in it.

Nonetheless, my intended contribution to the field of SF studies is clear. With my thesis I hope to add prestige to the *HGG* series as an insightful and intelligent work of science fiction that can actually be related to current physical theories to a great extent. Moreover, through this recognition of scientific inspiration, I also wish to add support to biographer M.J. Simpson's view that Adams's statements about himself should be read critically.

2 SCIENCE FICTION AS A GENRE

HGG is a work of humorous science fiction and thus part of a fairly small sub-genre of SF. Nonetheless, the basics of the entire genre of science fiction should be introduced. In this section I will define the genre and briefly summarize the origins and evolution of sci-fi, in addition to mentioning some influential sci-fi authors and briefly speculating on the future prospects of the genre. Humoristic SF will be discussed in a subchapter of its own.

2.1 Defining science fiction

For people not acquainted with science fiction, the term might imply some sort of violent futuristic junk with monsters, robots and giant insects from space, and heroes in spaceships saving helpless women from these perils. However, this stereotype largely due to Hollywood action films and television series does not do justice to the genre. Of course, the kind of SF action mentioned above is an existing and popular sub-genre of the field, but sci-fi is just as often about intelligent and well-thought views of the future, along with making insightful juxtapositions and notions of our present culture.

Defining science fiction is not an easy task, as Lester del Rey (1980: 3) points out in *The World of Science Fiction, 1926-1976*. There are no limits to its subject, locations or protagonists, and works of SF are often mixtures of genres, such as SF westerns of SF detective stories like Isaac Asimov's *The Naked Sun* (1957). Moreover, although science is often a central element of SF, there are works of the field without science concepts, such as Harry Harrison's *Make Room! Make Room!* (1966). (del Rey 1980: 4.)

In Lester del Rey's view "science fiction accepts *change* as the major basis for stories" (1980: 9, emphasis original). In SF, the basic idea in the story is that the world of the narrative is somehow different from that of ours, be the difference "in science, environment, attitude, morality, or the basic nature of humanity" (del Rey 1980: 9). Although the definition does not make a distinction between SF and fantasy, del Rey feels it is not a great disadvantage, since in his view the two genres seem to be merging together gradually anyway. Thomas M. Disch also faces trouble in separating SF from fantasy in his book *The Dreams Our Stuff Is Made Of. How Science Fiction Conquered the World* (2000). According to Disch, both SF and fantasy describe worlds somehow different to ours, but the change in the world of SF is usually thought to be possible in our world as well, whereas the one in fantasy is not. However, stories with telepathic communication or space ships moving faster than light are often categorized as SF, although such phenomena will not be possible, at least according to our present knowledge. Therefore, for Disch, making the distinction between SF and fantasy is often a matter of labeling rather than content. (Disch 2000: 3-4.)

In other definitions, SF is a genre dealing with extrapolation, which means taking a current trend and developing it further, often to its extremities. For instance, the idea for space travel was extrapolated from Hermann Oberth's theories. (del Rey 1980: 4-5.) In the case of Douglas Adams, it could be said that he extrapolated the portable, cross-referenced electronic guide in *HGG* from the development of computers that was taking place in the late 1970's. John Griffiths, in *Three Stories. American, British and Soviet Science Fiction* (1980), quotes the words of Frederik Pohl about extrapolation:

> It is [the business of a science fiction writer] to take what is already known and, by extrapolating from it, draw as plausibly detailed a portrait as he can manage of what tomorrow's scientists may learn . . . and of what the human race in its day-to-day life may make of it all (Pohl 1957, as quoted by Griffiths 1980: 13).

However, reducing SF to technological prophesizing is, again, very restrictive. Moreover, many sci-fi stories intentionally build scientifically unsound theories if they serve the story better than a realistic one. For example, the motor that powers a spaceship in *HGG* with infinite improbability is not a reasonable extrapolation from current space ship technology, but it is used in the story because it is a quick and entertaining way to transport the characters into exciting locations. Keeping in mind the artistic freedom Adams takes with physical theories to reach a humoristic effect, one might coin the term "jocular extrapolation" from theories such as relativity and quantum mechanics to describe the way Adams's partly builds his stories.

"What if…?" is often described as the basic question most SF stories present. Examples of these questions might be "What if man learned to travel in time and change the past?"; "What if computers became self-conscious and started a rebel?"; or "What if man came to contact with an alien species?" In making suggestions such as these, sci-fi is also committed to present them in a way that is both entertaining and as plausible as possible. (del Rey 1980: 11.)

In summary, defining SF is difficult. However, art often defies the limitations of genre, be it in literature, visual arts, music or any form of art. Therefore, although they should not be applied restrictively, all of the definitions mentioned above offer ways to understand the term "science-fiction". SF is about constructing worlds somehow different to ours, making extrapolations from trends familiar to us and also presenting the question "what if…?".

2.2 The origins of science fiction

Identifying the first SF story is as difficult as defining the genre itself. If the science as people know it today is not required as the basis on which to build SF stories, and if earlier verbal stories and myths are not included, the first sci-fi story might be the epic of *Gilgamesh*, which is the first recorded tale, being almost 3000 years old. In the story, king Ur makes long travels and performs heroic deeds to find wisdom and the secret of immortality. By changing the gods and monsters into alien beings, the legend would be very similar to the SF stories of our times. (del Rey 1980: 12-13.)

The True History by Lucian of Samosata, written in 175 A.D., is the first known story about traveling beyond Earth's boundaries, and in del Rey's opinion counts as sci-fi. The tale was extrapolated from the realization astronomers had made about the Moon being a spherical world orbiting the Earth. The means of traveling, a waterspout lifting and carrying a ship to the Moon, was the best that scientific understanding of the time could come up with. (del Rey 1980: 13.) However, despite these features and the element of the story where the hero meets intelligent extraterrestrials on the Moon, Griffiths (1980: 33) does not consider the tale SF because it "deliberately sets out to be ridiculous and implausible to make its point".

Both Griffiths and del Rey think that the astronomical discoveries of Johannes Kepler definitely marked the birth of sci-fi. Yet again, this is where their consensus ends. Del Rey (1980: 14) considers the first actual SF story to be Kepler's *Somnium* (1634), which depicts a dream in which a spirit transports Kepler himself to the Moon and the planets. Griffiths (1980: 33), on the other hand, rejects this view on the grounds that Kepler "makes no attempt to suspend the disbelief, and demons are the

means of transportation to the moon". Griffiths argues that it was not until the 1940's and 1950's that SF stories based their focus more on science than making moral and philosophical points with occasional scientific speculation in the passing (1980: 33-34).

Both del Rey and Griffiths list Bishop Francis Godwin's *The Man in the Moone* (1638) and Cyrano de Bergerac's *Voyages to the Sun and Moon* (1650) as landmarks of the genre, but whereas del Rey (1980: 14) is more eager to find scientific merit and categorizing the works as SF, Griffiths (1980: 33) stays stern and calls the stories nothing but "the most primeval ancestors of modern SF".

Del Rey argues that it was not until the 19th century, as the industrial revolution began, that stories speculating on science became an important field of literature. Mary Wollstonecraft Shelley's *Frankenstein* (1817) is often called the first true SF novel, since it describes the misuse of science to create a monster that immediately faces an identity crisis and is to be pitied. However, del Rey claims that *Frankenstein* is merely an adaptation of the ancient stories of the Golem, which is a monster created from dirt by spells from the Cabala, and which turns against its creators. (del Rey 1980: 15). Disch does not think of Shelley as the first true sci-fi author either, although for different reasons than del Rey: because *Frankenstein* is more of a philosophical melodrama with only a few memorable high moments than an insightful study of the use of science, and because too few people have actually read Shelley's original novel to be influenced by it. Disch goes on to make the daring statement that Shelley's novel stayed in print long enough to become a classic only because she had intelligent parents and a great poet as a husband. (Disch 2000: 33-34.) Whether Disch is right about the reasons for the success of Shelley's book or not, I find his remark rather unjustified. Shelley's story is definitely well known and has clearly

reached wide audiences, either in the book form or as a feature film. I think it is fair to think of Shelley's story as an important predecessor of the genre even if she could not be called the first SF author. Moreover, while discussing a work of fiction in its own merit I find it fruitless to slander the author or her family.

Both Disch and del Rey ultimately reach the same conclusion on the central forerunner of science fiction: the American Edgar Allan Poe (1809-1849). For Disch (2000: 32-34) it is critical to think of SF as an American phenomenon and thus he rejects all previous writers as the ancestor of sci-fi, mostly on the grounds that they are either myths or legends or not popular enough. Del Rey manages to stay more objective and gives credit to earlier authors as well, but Poe is the first American SF writer for him as well. Poe, indeed, was a great innovator not only in SF but also in the genres of detective story and horror. (del Rey 1980: 15-16.)

With all the work Poe did to develop the genre, his position as the central founder of the genre is probably justified. According to del Rey (1980: 16), the story by Poe that most closely resembles SF is *The Unparalleled Adventure of One Hans Pfaal* (1835), which is about a trip to the moon by balloon. Disch, on the other hand, makes an example of Poe's *Mesmeric Revelation* (1844), in which the protagonist, Mr. Vankirk, hopes that he can confirm the existence of the afterworld by having someone interrogate him while he is in a mesmeric trance. In the story, Poe describes his pseudo-scientific ideas of how the particle matter of the human body is left back in death and is replaced by "unparticled matter" and "the luminiferous ether", through which the soul comprehends the universe. (Disch 2000: 40-43.)

Disch finds numerous examples of SF conventions in *Mesmeric Revelation* alone. To begin with, mesmerism (or hypnotism) has become a popular, although naïvely misunderstood, vehicle in sci-fi for investigating previous lives or the memories of people abducted by aliens. The theme of immortality has also been a favorite in the genre. Moreover, in the beginning of the story, Poe defends his work from doubters much the same way SF believers defend their different convictions. Poe also demonstrates visionary power similar to the imaginative stories of sci-fi by presenting the idea of intelligent life in the universe outside our planet. In addition, SF often uses gory special effects, and Poe was no different in this respect: *The Facts in the Case of M. Valdemar* (1845), the sequel to *Mesmeric Revelation*, describes with gruesome detail the physical decay of the mesmerized protagonist. Poe also uses sophomoric, gross-out humor, as does much of SF. And finally, several stories by Poe have a protagonist that experiences a sort of manic enlightenment, but who to an outside observer appears purely crazy. Disch relates this feature to later SF stories, in which a mutated hero is seen as mad. (Disch 2000: 43-52.) Further similarities linking Poe to subsequent sci-fi could be presented, but these examples should be enough to justify Poe's role as one of the central founders of the genre.

To cut a long story short, my view is that different stories all the way from *Gilgamesh*, *The True History* by Lucian and Kepler's *Somnium* to Shelley's *Frankenstein* were some of the more primitive ancestors of science fiction, but the genre, which finally broke into massive popularity in the USA, as we will see later on, had its true pioneer in Edgar Allan Poe.

2.3 The development of science fiction

Before the evolution of science fiction shifted to magazines, post-Poe classics of the genre included Jules Verne's (1828-1905) *Journey to the Center of the Earth* (1864), *A Trip from the Earth to the Moon* (1865), and *Twenty Thousand Leagues Under the Sea* (1870), Mark Twain's *A Connecticut Yankee in King Arthur's Court* (1889) and H.G. Wells's *The Time Machine* (1895), *The Invisible Man* (1897) and *The War of the Worlds* (1898).

Much SF was also published in Russia and Germany before 1926, not to mention other countries. Nonetheless, this sci-fi outside the USA did not influence the development of modern SF, which took place in American pulp magazines starting from 1926. (del Rey 1980: 36-37.) USA is often considered the central country of science fiction anyway. As Disch (2000: 2) points out, even writers and filmmakers from other countries tend to locate their stories in American cities or use American slang.

2.3.1 Pulp magazines

Amazing Stories of April 1926, with Hugo Gernsback as the publisher, was the first magazine entirely devoted to science fiction. At first the magazine used previously published stories from writers such as Verne, Wells and Poe, and it was not until the third year that new tales became the primary material. The magazine was a success, and already in 1927 it was said to have at least 100 000 readers. Gernsback was forced to sell his magazine to another publisher in 1929, but he continued publishing other SF magazines. (del Rey 1980: 43-49.)

Astounding Stories of Super-Science (first issue 1930), which was later shortened to *Astounding Stories,* was another pioneering SF magazine. It was originally owned by William Clayton and edited by Harry bates. In 1938, however, John W. Campbell, formerly a popular material writer for the magazine, took the editor's post and changed the name of the magazine to *Astounding Science Fiction*. By increasing the physical size and contents of the magazine, he also aimed to raise the magazine's image from a sneered-at action pulp to the level of a more prestigious publication. Campbell's contribution to the genre was so immense that del Rey (1980: 89-157) gives him the credit for what he calls "the Golden Age" of sci-fi (1938-1949).

Campbell's discoveries include such classics of SF as Isaac Asimov, A.E. Van Vogt, Theodore Sturgeon, Robert A. Henlein and Arthur C. Clarke. Of these, the first three made their magazine debut in Campbell's publication in the course of three consecutive months in 1939. Van Vogt became an instant success with *Black Destroyer*, a suspenseful tale about the crew of a spaceship trying to control a powerful catlike alien that has attacked the ship. Sturgeon had an immediate hit as well with *Ether Breather*, which is a humorous story about aliens that are able to manipulate television signals and thus generate shocking images on the TV-screen. Asimov, on the other hand, had a slower start with *Trends*, a narrative speculating on the public's possible resistance towards rocket flight, and he wrote his best work for the magazine later. Henlein's *Life-Line*, an account about a man who discovers a way to define how long each person will live, was appreciated, but he as well gained most recognition for his later work. Clarke debuted in April 1946 with *Loophole*, but it was *Rescue Party,* published in May, which became his first true classic. The story is about a group of aliens who come to Earth with the intention to save some humans from a cosmic disaster. (del Rey 1980: 91-114.)

Another great contribution Campbell made to the genre as an editor was his demand for realism and deeper depiction of the societies in the future worlds of the stories, whereas SF before him largely consisted of worshipping futuristic gadgetry with the use of the imaginary worlds as a flat background (del Rey 1980: 149). Besides the success of pulp SF, the years from 1938 to 1949 also marked the beginning of publishers' genuine interest in sci-fi books. The breakthrough came mainly via sci-fi anthologies of older material.

2.3.2 Mystical SF of the 1950's

The 1950's saw the rise of interest in mystical SF with stories about telepathy, levitating and clairvoyance and how technology could increase these supposedly hidden powers in humans. Flying saucers were also a popular subject of the decade. (del Rey 1980: 161-169.) Growing interest in sci-fi attracted many publishers to print magazines without much editing, and this cheap, unimaginative SF quickly became uninteresting for fans, thus partially ending the reign of SF magazines (del Rey 1980: 190-191). However, the genre had secured its position in the book format by this time, and the sales remained high on that area (del Rey 1980: 198-206).

Several classic SF films were also made in the 1950's. The Internet Movie Database (IMDb), the most comprehensive database of feature films on the Internet, ranks *The Day the Earth Stood Still* (1951) as one of the most appreciated sci-fi films of the 1950's. The movie is a masterpiece about an alien who lands in Washington D.C. during the cold war after the Second World War and tells the people of Earth to live peacefully or they will be destroyed as a threat to other civilizations. *Invasion of the Body Snatchers* (1956) is a story about alien beings that kill people and start to populate the Earth as duplicates of

their victims. *Forbidden Planet* (1956) is a narrative about a crew that is sent to a colony on a distant planet to find out why the colonists have stopped communicating with them. (IMDb 2006.)

2.3.3 The New Wave

In the 1960's and the early 1970's the stories the magazines published were running even shorter on new ideas, while books, especially paperbacks, were in demand. Collections of stories were still popular, but entire one-story novels were starting to break through. Before the 1960's, sci-fi was not regarded as respectable literature, but the New Wave changed this for the better. This era was no longer characterized by unshakable trust in the future and development of technology. Instead, a general distrust in science and mankind was a common view. Much of this was due to the fact that many of the writers had grown up shortly after the Second World War, and the fear of atomic bombs was strongly present. The new writers were also more concerned with the style and the attitude in the writing. Symbolism was a common method in creating gloom and despair. The desire to break free from the earlier, pre-adolescent image of SF was strong and thus scenes involving sex and drugs were used to spice up many of the stories. Key authors of this period include J.G. Ballard, Thomas M. Disch and Charles Platt. (del Rey 1980: 249-260.)

During this period, many women writers were first published and started to gain fame. Some of the most famous women writers were Anne McCaffrey, Marion Zimmer Bradley and Ursula K. Le Guin. They were successful in attracting female SF readers by introducing feminist views in the writing but still maintaining the adventurous and escapist themes of the genre, although perhaps somewhat tailored to women. (Disch 2000: 122.) Bradley broke through in 1962 with the short novels

The Planet Savers and *The Sword of Aldones*. The stories were about a cold world on which people from a lost colony ship have found ways to use telepathy with the help of special crystals. Bradley wrote several sequels for these *Darkover* books, all of which can be read independently. (del Rey 1980: 244.) McCaffrey's most popular work was *Dragonflight* (1968), a story about the world of Pern, in which people ride dragons and burn dangerous threads falling from another world. The novel had a popular sequel, *Dragonquest*, in 1971. (del Rey 1980: 235.) Le Guin, however, has probably been the most influential female sci-fi writer. Of her work, *The Left Hand of Darkness* (1969) is perhaps the most famous. The novel depicts a frozen planet, the habitants of which each shift between male and female attributes. (del Rey 1980: 244.) Le Guin has also won five Hugos and four Nebulas [1](Disch 2000: 124-125).

The New Wave also produced many classic SF films. In addition to SF literature, the distrust in science and mankind shows in several sci-fi films of this era as well. Scientists turn people into assassins in *The Manchurian Candidate* (1962), and in *2001: A Space Odyssey* (1968) the intelligent computer of a spaceship turns against the crew. *Planet of the Apes* (1968) is situated in the distant future in which mankind has destroyed itself. The negative theme continued in the 1970's. In *A Clockwork Orange* (1971) scientists punish a violent anarchist in a cruel and inhuman way by connecting his natural, violent thoughts with a strong sense of nausea and pain. In *Alien* (1979), on the other hand, scientists are willing to sacrifice the crew of a spaceship in order to

[1] The World Science Fiction Society gives The Hugo awards (named after Hugo Gernsback) each year to excellent works of SF on the basis of a vote (WSFS 2006). The Nebula awards are voted and given annually by the Science Fiction Writers of America to acknowledge excellent SF writing (SFWA 2006).

capture a dangerous alien for military purposes. One of the SF classics of all time, *Star Wars* (1977), makes an exception to the theme. The story is a battle between good and evil, and in the end the good prevails even in the heart of the main antagonist. This feature can, however, be explained through the strong fantasy elements of the tale.

2.3.4 Cyberpunk

In *The Encyclopedia of Science Fiction* (1993) (Hereafter *Encyclopedia*), John Clute and Peter Nicholls describe how the development of computers and information networks inspired the birth of a new literary movement in SF from about 1981-2 onwards: cyberpunk. The "cyber" comes from cybernetics, which is a branch of science aiming to develop machines and electronics that imitate human intelligence. Information technology networks are a central feature in the sub-genre, as is the enhancement of the human body and brain with electronics and drugs. Existing in virtual reality, which means equipping human central nervous system with computer jacks and thus enabling people to log their brains directly into computer networks is another central theme of cyberpunk. The "punk", on the other hand, comes from the rock'n'roll movement of the 1970's and stands for "young, streetwise, aggressive, alienated and offensive to the Establishment" (Clute and Nicholls 1993: 288). As in punk culture of the 1970's, cynicism and a multi-layered disillusion toward the Establishment is a major view in Cyberpunk.

Bruce Bethke probably coined the word "cyberpunk" in his story *Cyberpunk* (1983), but it was William Gibson's *Neuromancer* (1984) that became the definitive landmark of the genre. Other influential authors of the field included Bruce Sterling, Rudy Rucker and Lewis Shiner. By the early 1990's, however, there were already so many clichés and

restrictions within the genre that the type turned into decline. (Clute and Nicholls 1993: 288-290.)

Sci-fi films depicting human/machine combinations were popular in the 1980's. *Blade Runner* (1982) ponders whether troublesome replicas of human beings should be given human rights or could they be destroyed at will. The antagonist of *Terminator* (1984) is a cybernetic organism, a metallic robot covered with human tissue. It comes from the future to kill a woman whose son will one day lead humans in the war against machines. In *Robocop* (1987), on the other hand, scientists combine the physical remains of a fatally injured police officer with robotics and computer programs and erase his memory. Soon, however, this "Robocop" starts to malfunction and gets flashbacks from its human past.

2.3.5 The future of science fiction

Since the publishers expect readers to want something that is popular at the moment, Disch (2000: 212) predicts that the future of sci-fi is "more of the same and more of the sameness". Along with this, Disch sees the future of SF in the book form as bleak. The sales are decreasing, and even the most popular paperbacks inspired by TV-series, such as Star Trek, are threatened. According to Disch, science fiction might be one of the first genres to make the transition from printed pages to interactive fiction on the Internet, although this is not likely to happen soon. This development would increase the authors of a single story, and works by a single writer might become rarities.

Television series and movies, however, are the most obvious replacements for books. *The X-Files* (1993-2002), a series about two FBI agents investigating supernatural phenomenon while trying to solve a

government conspiracy concerning extraterrestrials, was an international hit in the 1990's. *Stargate SG-1,* a show depicting the adventures of a military group exploring interstellar gates, had its first season in 1997 and still continues to attract viewers. (IMDb 2006.)

SF continues to interest television and film audiences in the 21st century as well. For instance, both *Battlestar Galactica* and *4400* began in 2004 and new seasons have been filmed. In films, sci-fi has shown its vitality in the new millennium with, for example, the enormous success of *The Matrix*-trilogy (1999-2003) and the *X-men*-trilogy (2000-2006). (IMDb 2006.)

2.4 Humorous science fiction

Since *HGG* is, by definition, humorous science fiction, a section on the sub-genre is in place. Clute and Nicholls (1993: 600) state that, contrary to a common misconception, sci-fi and humor actually work well together, and have indeed done so for quite some time. The *Encyclopedia* reserves the term "humorous sci-fi" mainly for science fiction that aims to be simply funny rather than satirical. Mark Twain's *A Connecticut Yankee in King Arthur's Court* (1889), Samuel Butler's *Erewhon* (1872), H.G. Wells' *The Truth about Pyecraft* (1903) and Ambrose Bierce with his short stories are identified as pioneers of the genre in the late 19th century. Authors of humorous sci-fi had a platform with the magazine *Unknown*, the first issue of which came out in 1939.

Influential writers over the years also include Fredrick Brown and Eric Frank Russell in the 1940's and 1950's and L. Sprague de Camp and Fletcher Pratt with their 1975 collection *The Complete Enchanter*. Despite humorous sci-fi novelists, the short story form is more common in the genre, most notably with Henry Kuttner, William Tenn and Robert

Sheckley in the 1940's. Sheckley is often named as an important influence for Adams, and indeed, the *Encyclopedia's* description of the usual themes in Sheckley's books could easily be used to summarize the *Hitchhiker*-series: "the naïve but sometimes successful struggles of little men against an unimaginably absurd and rather menacing cosmos". (Clute and Nicholls 1993: 601.)

More serious writers who have succeeded in humorous sci-fi as well include Philip K. Dick, Frederik Pohl, Alfred Bester, Harry Harrison and Bob Shaw. Dick, for example, used humor in much the same way Sheckley and Adams did: space and time tend to cause absurd problems for the protagonists, and as was Adams with Marvin the paranoid android, Dick was known for depicting robots that talk back. More strongly satirical sci-fi writers such as John T. Sladek, Thomas M. Disch, Ron Goulart and Stanislaw Lem characterized the 1960's and the 1970's. Humorous sci-fi has also been a favorite in American films and television sitcoms. On British television, Dr. Who held the first place until the *HGG*-series became a hit in 1981.

A shared element in most humorous sci-fi is, rather surprisingly, its underlying pessimism. The protagonist not only in *HGG*, but also in numerous works of the genre by authors such as Sheckley, Dick and Sladek, is "the ordinary guy battered by circumstance, trying to find meaning or justice in a Universe where these commodities may be nonexistent". (Clute and Nicholls 1993: 602.)

To sum up, humor, and often the specific kind of humor Adams used, is in fact surprisingly common in SF. Science fiction seems to be a good genre for delivering all kinds of jokes about human life. When observing the universe from outside Earth, with a wider perspective, it

is perhaps easier to make notions of the general absurdity of life than it is from the limited view of "an Earthling".

3 DOUGLAS NOEL ADAMS

After going through the basics of the genre of science fiction, a section on Douglas Adams specifically is in place. In addition to summarizing the life of Adams and the facts about the *HGG* series, this part will also briefly present his other works. For the particular needs of this study, both the fabricated nature of his stories about his life and the knowledge he had in theoretical physics will also be introduced.

3.1 The life of Douglas Adams

According to Neil Gaiman's biography *Don't Panic. Douglas Adams & the Hitchhiker's Guide to the Galaxy* (2002), Douglas Noel Adams was born in Cambridge, England, on March 11th 1952. His father was a postgraduate theology student and his mother was a nurse. As a child Douglas was thought of as a little strange, maybe even retarded, and he had few close friends. He had a sister called Susan, who was three years younger than he was. From September 1959 to 1970 he stayed at Brentwood School in Essex. He did not like school very much, partly because he was tall and a bit clumsy, and he was not particularly good in sports. Significantly, at the time Douglas wanted to be a nuclear physicist, but he was not fluent enough in arithmetic for that. His hobbies included making model airplanes, playing the guitar and reading. A reader of *HGG* will probably not be surprised to hear of Adams's hobby of making model airplanes, since in his books he often describes the appearance of space ships very passionately. (Gaiman 2002.)

Adams had his first writing, a brief report on the Trinity Term activities of the Prep School Photographic Society, published in the school magazine *The Brentwoodian* when he was ten (Simpson 2003: 11). *Alice in Wonderland* by Lewis Carroll has often been cited as an influence for Adams since both Adams and Carroll frequently used the number forty-two. In *HGG1*, the crucial answer to "Life, the Universe and Everything" turns out to be forty-two (Adams 1996: 120). In *Alice in Wonderland*, on the other hand, the King tells Alice, who has grown larger than the other people in the courtroom, that according to rule forty-two, all people who are more than a mile high must leave the court. Adams denied this influence, and he even said he was frightened when he tried to read the book as a child. He said that he was always attracted by the idea of being a writer, but he never really liked the writing process itself, and thus he would be constantly missing the deadlines throughout his career as a writer. (Gaiman 2002.)

Through appearing in school plays Adams discovered his love of performing, and after seeing John Cleese perform in sketches, he wanted to become a writer-performer and started English literature studies at St John's College, Cambridge, and worked for a while with comedy groups. He also hitchhiked around Europe and took small jobs to get money. In summer 1974 he gained a BA and an MA in English Literature and, having received discouraging feedback as a writer-performer, set out to become a comedy writer only. He wrote sketches for radio and television, for example with Graham Chapman from "Monty Python", and John Lloyd, but did not gain much publicity with them. (Gaiman 2002: 3-18.)

After several failures as a comedy writer Adams finally broke through in BBC radio with *HGG*, and soon he was asked to transform the series into books, and his career as a flourishing author began. In addition to

writing novels, he wrote scripts, for instance for the numerous manifestations of *HGG.* From 1985 onwards, after the expeditions to make *Last Chance to See* (1990), a book and recordings on endangered species, he was also an active environmentalist. Later on in his life he became very passionate with computers, and he was a founding director of h2g2, formerly known as The Digital Village, an Internet company specialized in digital media. (Simpson 2003.)

Adams married Jane Belson in 1991 and they had a daughter named Polly in 1994. In 1999 he moved with his family from Islington to Santa Barbara, California. In May 2001, at a relatively young age of 49, he died unexpectedly of a heart attack in his home gym. Simpson argues that Adams's death was the combined result of work-related stress and pedaling on an exercise bicycle to counterbalance the stress. The anxiety was mainly due to his futile efforts to get his screenplay for a feature film version of *HGG* accepted. The film had been in development for twenty years but was still no closer to becoming a reality at the time of Adams's death. (Simpson 2003.)

Douglas Adams was well known to have immense difficulties writing. Starting from *HGG2*, each novel, with the exception of *The Meaning of Liff* (1983), was written after the deadline in a state of panic, and the only way to get him to write the book was to lock him in a room and see that he did his work. (Simpson 2003: 171.) However, according to Simpson, this was not due to writer's block, contrary to beliefs. Adams, in fact, had too many ideas, and he simply did not have the self-control to finish his ideas before moving on to the next one. Simpson also blames Adams's editors for giving him too much freedom and not pushing him, even though they knew he had a tendency to avoid writing if he only had a change. (Simpson 2003: 266-267.)

Besides someone easily distracted from work, Adams's friends described him as a forgiving and trusting person, who managed to stay friends even with the people he had had the most difficulties with. This was partly because Adams wanted people to like him and surround him, but partly because it was his nature to forgive. (Simpson 2003: 296.) He also clearly had a good sense of irony about himself. For instance, he stated that he identified with a character from *HGG2*, the Captain of the 'B'-ark, who is a person who is sent away from a planet with the other useless third of its population. The other two thirds of the population, who launched the useless ones away, were great achievers or people who make things. Perhaps it was due to the fact that Adams was a comedy writer, and more specifically, a comedy writer who did not enjoy the process of writing comedy, that he saw himself neither a great achiever nor a maker. (Simpson 2003: 111.)

3.2 The *HGG* series

HGG started out as a radio series on BBC with the first episode broadcasted on March 8th 1978. Adams wrote the radio series episode by episode, not knowing what would follow (Simpson 2003: 108). Although he modified the story when he turned it into books, this method of writing may partly explain why the novels tend to lack a traditional arc of drama. Many of the characters in the story were inspired by people Adams knew, or written specifically for performers he had worked with. Although often forgotten, John Lloyd helped writing the end of the radio series, because Adams was running out of ideas (Simpson 2003: 109-110). From 1979 to 1992 Adams transformed the series into five best-selling books. The novel series has also been jokingly called "the trilogy in five parts" or "the Hitchhiker trilogy".

The series has also given birth to stage plays, sound records, a television series, a towel, a computer game, comic books, web pages and a movie. Adams himself was part of making the scripts for many of the adaptations of the story, including the film. The feature film version of *HGG* came out in 2005 after being in the scriptwriting stage for twenty years. Adams died in 2001, and many have said that it was bad luck that he never got to see the final movie, seeing that he died only four years before the film finally got made. Simpson states that this was not a coincidence. On the contrary – the film got made precisely because Adams had died. He had always requested he be the one to write the script for the movie. Unfortunately, he did not understand the kind of scripts Hollywood films demanded, and several times rejected scripts by professional movie scriptwriters because they had changed his story too much. After Adams was gone, a script suitable for a Hollywood film finally got accepted, and the production started. (Simpson 2003: 346.)

The main character in *HGG* is Arthur Dent, a tea-loving Briton with a concentration problem but with no desire for adventures. In the beginning of the series Arthur is rescued by a spacecraft when the Earth is demolished by Vogons, a malicious, ugly and bureaucratic space race, to make way for a new hyperspace bypass. Actually, the term "hyperspace bypass" is never explained in the story, but it probably refers to a sort of highway bypass in space. Arthur is rescued through the help of his friend Ford Prefect, a slightly mad alcoholic, who turns out to be an alien from Betelgeuse. Ford is also a field researcher for *The Hitch Hiker's Guide to the Galaxy* (hereafter Guide, refers to the guide in the story, not to *HGG* series), which is, as the name partly implies, an electronic guide for anyone traveling around the galaxy. Zaphod Beeblebrox is the crazy former President of the Imperial Galactic Government, a two-headed and three-armed alien who is always in

search for adventures and a good time. Tricia McMillan, or Trillian, is Zaphod's energetic and willful girlfriend, and in addition to Arthur the only human being who was rescued when the Earth was destroyed. Yet another important character in the series is Marvin the paranoid android. He is a deeply depressed robot who has a brain the size of a planet but is constantly asked to do chores such as opening the door.

HGG is a travel account told in the third person. The story follows Arthur's and his friends' amazing adventures all over space and time as they, for example, search the meaning of life, try to find the true leader of the universe and save the universe from killer robots. Although *HGG* has many characters and subplots, to Adams *HGG* was "the personal odyssey of Arthur Dent" (Simpson 2003: 259). The storyline in *HGG* is fairly simple, but the plot is not the important thing in the series, anyhow. Major themes in *HGG* are probability, and the fact that things always seem to happen against it; fate as opposed to coincidence; parallel universes and how they affect our lives; the meaning of our existence; and the truths about the universe in general. As the series proceeds, the plot thickens around Arthur and his mysterious, seemingly essential role in the universe.

As I will discuss in more detail, *HGG* is a parody more of human nature and society than of science fiction. Despite handling the more philosophical questions mentioned above, I think what Adams enjoys most is making sarcastic notions of the crazy things people do in their everyday routines and the absurd beliefs upon which they build their lives.

Adams won three Golden Pan awards (an award given by the Pan publishing company for selling a million copies in paperback) for the three first books of the series, and they were generally highly

appreciated. However, the last two *HGG* books were not as highly regarded by the media, the fans, or even by Adams himself. Unlike the first three parts, *HGG4* is more of a dragging, soft love story and less of a sharp, perceptive satire of the society. The poor quality of the novel was largely due to Adams's constant difficulties in writing and also a growing lack of interest in the subject of *HGG*. The publisher, nonetheless, wanted more books since the first three continued to sell so well. *HGG4* was, again, long overdue, and the only way to get Adams to actually write the book was to lock him up in a hotel room so he could write it in two weeks. The secret of his success, in his own view, had always been to put a lot of work into his writing and rewriting. This, of course, was not possible in two weeks of frantic, unmotivated work under supervision. After writing *HGG4* Adams confessed that he felt he should not have written the book and that he felt that way already as he was writing it (Simpson 2003: 207). These were largely the same reasons that made *HGG5* an artistic disappointment as well, although it sold many copies, as all Adams's books did. Adams's own favorite novel of the *HGG*-series was *HGG2* (Simpson 2003: 172).

3.3 Other works by Douglas Adams

In spite of Adams's focus on *HGG*, he also wrote novels outside the series. *Dirk Gently's Holistic Detective Agency* (1987) is described as "a ghost/horror/detective/time travel/romantic comedy epic" on the official Douglas Adams website (Douglasadams.com 2006). The sequel to it was *The Long Dark Tea-Time of the Soul* (1988). *Last Chance to See* (1990) was written in collaboration with zoologist and photographer Mark Carwardine. Adams and Carwardine went to see some of the most endangered animals in the world, photographed them and wrote their experiences into a book. The book and the photographs were also transformed into a CD-rom.

The Meaning of Liff (1983) is a humorous work written in cooperation with John Lloyd. In the book Adams and Lloyd use place names in defining some of the things all people know, but do not have a name for. For instance, "Ewelme" is defined as "The smile bestowed on you by an air hostess." *The Deeper Meaning of Liff* (1990) is an extended version of *The Meaning of Liff* by the same authors. Adams also participated in creating the documentary film *Hyperland* (1990) and two computer games: *The Hitch Hiker's Guide to the Galaxy* (1984) and *Bureaucracy* (1987).

Adams's novels have sold over 15 million in the United Kingdom, the USA and Australia and he was also a bestseller in languages such as German and Swedish. (Douglasadams.com 2006.)

3.4 Truthfulness of Adams's stories about his life

As mentioned in the introduction, M.J. Simpson's biography states that Adams often told stories about his life that were not entirely true. Providing evidence and examples of this feature of Adams is essential for justifying my claim that Adams might not have been completely fair to himself in his statement that the similarities between the scientific ideas in *HGG* and the real world are coincidental.

However, before demonstrating some of these fabrications, it is important to stress that neither I, nor M.J. Simpson, consider Adams a liar. Adams always was at heart a writer-performer who wanted to tell humorous stories and entertain people, and if a story about his life did not have an amusing punch line, he tended to alter it just enough to make it funny or otherwise impressive. I consider this an understandable feature in a comedian, and a habit that, at least in Adams's case, did not hurt anyone, only gave people more

entertainment. On the other hand, Adams had an exciting life, and many stories that he repeated over and over again started to fade from his memory, and in the end, what he remembered of them was the "story version". Adams himself said that he had a poor memory: "I can't remember anything that happened between last weekend and when the Beatles split up" (Simpson 2003: 4). This statement is actually a good example of Adams's stories: an exaggerated truth, which makes a funnier quote than an actual fact would.

One of the first myths Simpson corrects is the story Adams told over and over again about the signing session of his first novel in the bookstore The Forbidden Planet in 1979. According to Adams, when he got to the signing session by taxi, he had to struggle through masses of people, whom he thought to be demonstrators, but who in the end turned out to be people lining up to get in the book store for his signing session. The story goes on to claim that the following day the novel, *The Hitch Hiker's Guide to the Galaxy*, was number one in the *Sunday Times* bestsellers list. M.J. Simpson, however, reveals through interviews with people who had been present that day that the actual event was somewhat different. For example, the shop manager Stan Nicholls and Robert Newman, then a student, confirm that the signing session started slowly, with no more than twenty people showing up, and only twenty minutes into the session did the crowds start to appear. Moreover, the book went to number one in the bestsellers list, but only after a week of sales, not the following day. (Simpson 2003: 1-3.)

As already briefly mentioned in the introduction, also the most famous story Adams ever told, that of him first coming up with the idea of a Hitchhiker's Guide to the Galaxy, seems to be wrong. He always repeated that the idea came to him in 1971 when he was lying drunk in a field in Innsbruck with a copy of *The Hitchhiker's Guide to Europe* with

him. However, two long-term friends of Douglas remember Douglas having told them of the idea in 1973. Adams had returned from Greece, and he said he had had the idea there while lying on a rock after having sex with a Dutch girl. (Simpson 2003: 339-340.)

Simpson's book corrects several other myths of Adams's life, but the two mentioned above, being the most famous of all, should suffice as evidence of Adams's tendency to make statements not entirely true. When it comes to his statement about the scientific themes in *HGG*, I believe that comparison of the similarities between the real world and that of his books would have been not only boring but also would have taken too much effort, having many questions to answer. Or maybe Adams did not recognize that much of the physical phenomenon in his writing actually very much resembled some central views of theoretical physics, depending on the point of view and level of comparison, of course. Nevertheless, being a well-read person, Adams surely understood the apparently non-commonsensical nature of our universe, and as a visionary and a humorist he saw the underlying humor and irony in it, as can be read in his work.

3.5 Adams's scientific background

Claiming that certain areas of theoretical physics had inspired Adams's writing naturally demands some interest and basic skills in physics from him. It is easy to find evidence of both of these. David Wakeling, a former Form IV schoolmate of Adams, remembers that Adams was "good at science" (Simpson 2003: 24). Adams himself wrote in a story published in *The Salmon of Doubt* (2003) that he had been taught well at Brentwood, "particularly in Physics" (Adams 2003: 7), and in 1979 he said of himself: "I was very hot on physics as a child" (Simpson 2003: 25).

Moreover, when talking about his studies of English Literature at Cambridge, Adams admitted that he had felt guilty for not studying science. At the time of this statement he was already into environmentalism and thus he thought that if he had had his current knowledge back then, he would have studied biology or zoology. (Simpson 2003: 30.) In relation to that subject, the book he quoted of having changed him was Richard Dawkins's *The Blind Watchmaker* (1986) on evolution (Adams 2003: 14-15).

Simpson (2003: 321) writes of Adams as a "man, educated in science no higher than O-level, giving keynote speeches at international scientific conferences". Having said that, it should be recognized that Adams was invited to speak in scientific conferences not because of scientific achievements but for his reputation as an innovative thinker and an entertaining and intelligent speaker.

Since the theme of multiple universes is one in which I will compare Adams's writing to current scientific theories, it is crucial information that he (in a scientific conference) stated that he had read and was impressed by the book *The Fabric of Reality* (1997) by David Deutsch, which discusses a theory of multiple universes (Adams 2003: 133). Although Deutsch's book was published in 1997, five years after *HGG5*, which uses parallel universes, it is reasonable to think that since Adams himself used multiple universes in his writing, it was a scientific theme which he had studied even before Deutsch's novel came out. Moreover, recognizing Adams's tendency to use probability and improbability as devices in his books, it is relevant to notice him in the very same conference speech showing his understanding of the role of probability in the positions of particles on a subatomic level, although for the purposes of clarity, humor and effectiveness, he puts it in lay terms:

> Then we began to understand that when we get down to the subatomic level, the solid world we live in also consists, again rather worryingly, of almost nothing and that wherever we do find something it turns out not to be actually something, but only the probability that there may be something there (Adams 2003: 134).

As regards religion in relation to science, from sometime after he left Brentwood up until at least 1984, Adams was "very firmly agnostic" (Simpson 2003: 242). However, somewhere around 1987 he became an atheist, largely due to evolutionist and atheist Richard Dawkins mentioned earlier, with whom Adams shared mutual appreciation (Simpson 2003: 242).

One of the scientific innovations Adams came up with was to the field of information technology, even "before the phrase was coined" (Simpson 2003: 185). It was the idea of a portable, fully cross-referenced electronic database, which was the Hitch Hiker's Guide to the Galaxy itself. Although Adams was not the first to think of it, he nonetheless had thought of it completely independently, while still not computer literate at that point. Moreover, Adams was the one to bring this sort of extremely usable view of computers to the public before the days of small computers and the Internet. (Simpson 2003: 186.)

Thus, in the light of these facts, I find it justified claiming that Adams's knowledge on physics and other sciences was fairly extensive. Moreover, the innovations he made and the fact that he was invited to speak of such things in scientific conferences, further suggest that Adams was an intelligent person who surely understood what he studied and was able to use it in his work. I also find it hard to believe that he would not have used some of this scientific knowledge in his writing, especially since the physical phenomenon in his writing strongly corresponds with that of current theoretical physics, as I will show later on.

3.6 The position of *HGG* in science fiction

HGG is often classified as a parody of science fiction. For instance, Hinkkanen, Ekholm and Lius (1990:71) call it, among other things, a parody of the clichés in "space operas". This is one of the views M.J. Simpson wishes to change in his biography:

> Hitchhiker's Guide is in no way a spoof or parody of sci-fi, it is humorous science fiction which does what all good science fiction is supposed to do – explores the human condition and man's place in the universe – but does it with humour (Simpson 2003: 95).

Adams himself confirmed that this indeed was his intention: "…as far as I'm concerned, I wasn't sending up science fiction. I was using science fiction as a vehicle for sending up everything else" (Simpson 2003: 95). At another point he defined his goal more accurately: "When I was doing *Hitchhiker* I was always trying to find different perspectives on everyday things so that we would see them afresh" (Simpson 2003: 250-251). Simpson (2003: 96) is at difficulties in trying to find predecessors in Adams's genre, but lists Woody Allen's 1973 film *Sleeper* as "the only significant attempt to combine thought-provoking SF ideas with sophisticated humour" and thus a possible inspiration for Adams. One further influence, mentioned at least in the radio scripts of *HGG* radio series, is Jonathan Swift's *Gulliver's travels* (1726) (Simpson 2003: 92). Star Wars, the super hit film that brought sci-fi back into the mainstream in the late 1970's, opened in the UK in 1978 less than six weeks before the *HGG* radio series started. Star Wars undoubtedly helped *HGG* become a hit in 1978, but the timing was coincidental: *HGG* was not in any way inspired by Star Wars, nor was it a parody of it. (Simpson 2003: 95-96.) Further predecessors of Adams, in addition to those identified by Simpson, are listed in chapter 2.4 as presented by Clute and Nicholls in the *Encyclopedia*.

The views on Adams's knowledge and inspiration in the genre of science fiction are somewhat contradictory. Simpson (2003: 17) states that as a boy, Adams was "a voracious reader of juvenile science fiction". Moreover, some of Adams's friends such as Nick Webb and Andrew Marshall remember having enthusiastic discussions with him about science fiction and sci-fi writers such as Robert Sheckley, Bob Shaw and Philip K. Dick (Simpson 2003: 138). On the other hand, Christopher Priest, for example, recalls that Adams's experience on sci-fi was fairly limited and that science fiction "wasn't the source of inspiration many people would like to think it was" (Simpson 2003: 139). Dr. Jack Cohen, an evolutionary biologist who also helps sci-fi authors in creating believable fictional ecosystems for their novels, is one of the people who share Priest's view: Adams was not "well read in science fiction - in fact he was quite dismissive of it" (Simpson 2003 introduction: xviii). Nonetheless, Adams himself sometimes commented on several sci-fi authors such as J.G. Ballard, Iain Banks, H.G. Wells, Isaac Asimov, Arthur C. Clarke, Walter M. Miller Jr. and A.E. Van Vogt, although Kurt Vonnegut and Robert Sheckley were the only sci-fi writers whom he often cited as his inspiration. However, when Adams was compared to Sheckley, he claimed to have read Sheckley's work only after writing *HGG* and the similarities to be coincidental. (Simpson 2003: 139.)

Simpson suggests the truth of Adams's familiarity with the genre to be in the combination of all these contradictions. This view is supported by the fact that when Adams was asked whether he really was interested in science fiction, he replied: "Yes and no. I always thought I was until I discovered this enormous subculture and met people and found I knew nothing about it whatsoever." (Simpson 2003: 139-140.)

4 INSTABILITY IN THE UNIVERSE

Having introduced the basic information on the genre of science fiction, Douglas Adams and *HGG*, this study will now move on to the analysis part. In the following sections of 4, 5 and 6 I will introduce the physical properties of the universe of *HGG* and draw attention to the similarities one can find with our universe, as depicted in Brian Greene's *The Elegant Universe. Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory* (2000), Stephen Hawking's *The Universe in a Nutshell* (2001), and Peter Coveney's and Roger Highfield's *The Arrow of Time. The Quest to Solve Science's Greatest Mystery* (1991). Through presenting these similarities I aim to show that theoretical physics has indeed been a major inspirer in a general way when Adams was constructing the universe in *HGG*.

In the introduction I mentioned that both our universe and that of *HGG* are, above all, non-commonsensical. This feature in the universe of *HGG* can be seen, first of all, in its instability. In this section I will compare our universe to that of *HGG* and attempt to show that both our universe and our view of it are instable.

4.1 Change of worldview

First of all, our world and that of *HGG* share the theme of instability in a specific way: in both cases the people's view of the universe changes drastically. The first essential thing that turns out to be unstable in the very beginning of *HGG* and continues to be shaken is, indeed, Arthur Dent's worldview. One morning he is devastated to learn that his house is to be knocked down to make way for a new bypass (*HGG1*). For a moment the loss of his house is a terrible tragedy that fills his whole world, and he cannot possibly think of anything worse. However, soon

this self-centered view of the size of his problems and his view of himself as a terribly mistreated innocent victim in the world is given perspective, as the Earth is demolished to make way for a new hyperspace bypass. In a flash Arthur is forced to reluctantly readjust his view of the universe: his home planet has just been destroyed, there is intelligent life outside Earth, and the life of human beings is obviously seen as insignificant by these alien life forms. Arthur is now on a journey to find out that there are gods, prophets and immortals (Adams 1996*:* 317) in the universe, none of which seem to think much of human beings, if they have heard of them at all. For example, an alien called Wowbagger the Infinitely Prolonged has become immortal accidentally. During his infinite life he ultimately becomes so bored with the universe that he decides to insult every creature in it, and he aims to do this in alphabetical order. As Arthur is stranded on prehistoric Earth in the beginning of *HGG3*, Wowbagger lands in front of him, calls him a jerk and leaves. Thus, for Wowbagger this human being is just another abominable creature in the vast universe, not worthy enough even to give a ride off the planet. Besides the disinterest of intelligent space races towards human beings, the more metaphysical truths of the universe are fairly depressing as well, and they give the characters in *HGG* a great headache, as I will describe later on.

In the early 20th century our own worldview was challenged dramatically as Einstein published his special and general theories of relativity, which "started two conceptual revolutions…that changed our understanding of time, space, and reality itself" (Hawking 2001: 4). Hawking summarizes this change in our worldview in the beginning of *The Universe in a Nutshell* (2001). Contrary to the physical understanding of the nineteenth-century, Einstein stated in his special relativity theory of 1905 that there was no absolute rest or absolute time, because both of them depend on the relative motion of the observer (Hawking 2001: 6-

9). Special relativity theory did not yet include gravity, but Einstein's general relativity theory of 1915 presented the bold suggestion that gravity is due to mass and energy warping space-time, and that space and time are thus curved (Hawking 2001: 17-19). These theories generated resistance as they were introduced, but both of them appear to agree accurately with our perceptions of the universe. Special relativity, for instance, has been confirmed when synchronized clocks have fallen out of sync while being flown around the earth in opposite directions (Hawking 2001: 9). General relativity theory, on the other hand, predicted that light from a star would bend when passing the Sun, as observed for the first time in 1919 during a solar eclipse (Hawking 2001: 19-21). Some of the fascinating phenomena relating to these basic rules of our universe will be discussed and compared to the events in *HGG* in greater detail later on in this study.

The point I aim to make with these examples is that, in my view, Einstein's relativity theories are our equivalent of Arthur having his stagnant home planet exploded: like the demolition of Earth both forced and enabled Arthur to go out into the universe to find out its secrets, so did the demolition of our misguided conceptions of the 19th century force and enable us to look into the universe with a fresh view and find things we previously did not even dare to imagine.

In terms of this study, one must note a joke in *HGG2* about the earnings of a rock band called Disaster Area, in which Adams reveals his familiarity with general and special relativity theories:

> This has not, however, stopped their earnings from pushing back the boundaries of pure hypermathematics, and their chief research accountant has recently been appointed Professor of Neomathematics at the University of Maximegalon, in recognition of both his General and his Special Theories of Disaster Area Tax Returns, in which he proves that the whole fabric of the space-time continuum is not merely curved, it is in fact totally bent (Adams 1996: 221).

Jokes about the incomprehensible vastness of the cosmos are numerous in *HGG*, and they are in line with the theme of the characters' deepening view of the universe. For example, a device called the "Total Perspective Vortex", which makes a person understand his or her place in the universe, is used for torturing in *HGG2*, since this sudden sensation of proportion separates the soul from the body. The prelude to this joke is a story in which the most intelligent species of a planet is living in a single tree, and some of the beings are accused of being nonsensical when they speculate whether other trees could sustain intelligent life as well. This joke is an obvious reference to man and his egocentric worldview.

Both in our world and that of *HGG*, figuratively speaking, the destruction of a world enabled the birth of another, greater one. Like Arthur's understanding of the true nature of the universe expanded, so did ours in the 20th century. On the other hand, both Arthur's concentration and nerves are fairly weak, and he mostly manages to stay in the dark after this initial leap of understanding. Our understanding of the universe is by no means complete, either. For instance, the search for the Theory of Everything, which I will mention briefly in the following subchapter, is still in progress, and questions such as how exactly the universe was born are still beyond our comprehension.

4.2 Unstable space-time

As this study moves on to describe phenomena taking place on a microscopic level, the discipline of quantum mechanics needs to be introduced. Predictions derived from Einstein's relativity theories work well on a macroscopic level, meaning the realm of large objects such as rocks, humans, planets and galaxies. Gravity is the major force that

makes objects of this size interact. However, on the scale of molecules, atoms and particles even smaller than that, gravity is no longer what makes the particles interact. Other forces keep, for example, an electron orbiting the nucleus of an atom. Moreover, some extraordinary occurrences, which relativity theories cannot explain, take place on the microscopic level. Quantum mechanics is the branch of physics investigating and explaining these subatomic forces and phenomena.

The previous section described the unstable views of both our universe and that of *HGG*. In the following section I will suggest that also the space-time the universe consists of is unstable in both our universe and that of *HGG*.

4.2.1 Matter from nowhere

First of all, in both universes matter materializing "out of nowhere" is, on some level, theoretically possible. For instance, in the beginning of *HGG3,* as Arthur and Ford try find a way out of prehistoric Earth where they had accidentally landed, Ford suddenly detects "pools of instability in the fabric of space-time" (Adams 1996: 324), and a velvet paisley-covered Chesterfield sofa materializes in front of them. They jump on to the sofa and are suddenly transported two million years into the future.

According to Brian Greene, the idea of objects materializing out of nowhere is actually not that far from the currently accepted scientific truth. Greene is Professor of Physics and Mathematics at Columbia University and Cornell University. He is one of the world's leading string theorists. String theory is a physical theory, which attempts to unify all the forces of nature and thus become the long sought "theory of everything" (hereafter also TOE). Greene (2000: 206) summarizes the

basic idea of string theory in his book *The Elegant Universe (2000):* "According to string theory the universe is made up of tiny strings whose resonant patterns of vibration are the microscopic origin of particle masses and force charges". [2]

As Adams does, Greene also talks of instability in the fabric of space-time, at least on microscopic level. The universe has a property of "quantum-mechanical uncertainty". Greene (2000: 120) describes our universe as "a teeming, chaotic, frenzied arena on microscopic scales". The less space a microscopic particle has to move in, the more frantic its behavior gets. Einstein's famous formula E=mc^2 says that matter can be turned into energy form and vice versa. This means that on a small enough scale, on an elementary particle level, an empty region on space can momentarily "borrow" energy from the universe, and, for example, an electron with its antimatter companion the positron can momentarily erupt into existence, before they annihilate each other and pay the energy "loan" back to the universe. (Greene 2000: 118-120.) Thus, according to modern physics, matter can actually materialize out of nothing, although for a short time only and on a much smaller scale than the materializing Chesterfield sofa of *HGG3*.

HGG3 was published in 1982, the same year in which Alexander Vilenkin, based on an earlier idea by Edward Tryon, suggested that the universe itself "might be understood as a quantum mechanical tunneling process from a 'nothingness' of quantum vacuum fluctuations" (Kragh 1999: 422-423). This means that quantum vacuum

[2] Actually, string theory has by now been updated to M-theory as one of the strongest candidates for TOE. At one point there were five distinct string theories and the eleven-dimensional supergravity theory, until the discovery of certain connections between all of these theories led researchers to realize they were all merely different expressions of one underlying theory, a theory now named M-theory (Hawking 2001: 56-57). However, since this development in the search for TOE does not affect this study in any way, and the basic principles of string theory are the same as those of M-theory, I will keep on referring to Greene and string theory hereafter.

fluctuations, or in other words, the eruption of particles from a vacuum, might be the way our entire universe was born. Although the idea was considered highly speculative, it nonetheless means that the concept of matter – even an entire universe - materializing out of a vacuum was present in scientific discussion and thus accessible for Adams for possible inspiration.

4.2.2 Time travel and holes in space

In HGG3, Arthur and Ford traveled on the Chesterfield sofa two million years into the future. This is not the only example of time travel in *HGG.* The Infinite Improbability Drive, which I will discuss later, enables the characters to travel freely backwards and forwards in time. There are no limits to time travel, as can be seen in *HGG2,* in which the characters travel to the future to have lunch at a restaurant that is located in the moment of the end of the universe. However, whereas discussions of time travel usually include the paradoxes logically forbidding time travel - for example, the time traveler going back in time to kill his father so that he will never be born to go back in time to kill his father - the only paradox in *HGG* worth worrying about is the grammar, since the tenses get extremely complicated when talking about time traveling. "Dr Dan Streetmentioner's *Time Traveler's Handbook of 1001 Tense Formations*" indeed comes handy when one needs to "describe something that was about to happen to you in the past before you avoided it by time-jumping forward two days in order to avoid it", although the "Future Semiconditionally Modified Subinverted Plagal Past Subjunctive Intentional" is a tense difficult to grasp even with the handbook (Adams 1996: 213). Especially when the Guide speaks of people intending to eat or having eaten in the Restaurant at the End of the Universe, the tense corrections are in need: "In it, guests take (willan on-take) their places at a table and eat (willan

on-eat) sumptuous meals while watching (willing watchen) at the whole of creation explode around them" (Adams 1996: 214).

Time travel is a possibility in our universe as well, at least in some ways. In the early 1900's Albert Einstein overturned our views on space and time with his special and general relativity and gave us a universe that behaves against all common sense: "not only are space and time influenced by one's state of motion, but they can warp and curve in response to the presence of matter or energy" (Greene 2000: 5-6). This curving of space-time brought modern science the idea of time travel, which was thought to be possible only in science fiction. One could actually make a relative trip through time by accelerating a few years in space close to the speed of light. When the traveler would return to Earth, the people he knew would have been dead for hundreds or thousands of years while the traveler himself would have aged only a few years. This has actually been verified, for instance, by accelerating particles called muons in particle accelerators almost to the speed of light. As a result the accelerated muons' "life" lasts about ten times longer than the life of muons sitting in rest in the laboratory. This is due to time moving ten times slower for the accelerated particles. (Greene 2000: 42.)

According to current scientific understanding, time travel might also be possible, for instance, through wormholes. In the wormhole theory, two separate black holes [3] could tear the fabric of space, developing "punctures", which could grow "tentacles" that merge together, forming a spatial bridge and thus connecting the previously remote regions. This bridge is called a wormhole. By traveling through this

[3] Black hole is a massive star that has collapsed on itself and created such a strong gravitational field that nothing, including light, can escape its surface. Physicist John Wheeler coined the term "black hole" in 1967. (Coveney & Highfield 1990: 100.)

wormhole one could instantaneously move from one point in space and time to another one. (Greene 2000: 264-265.)

Scientists disagree whether or not time travel other than the relative kind is theoretically possible in our universe. Hawking (2001: 153) claims in *The Universe in a Nutshell*, after several pages of reasoning, that "the laws of physics conspire to prevent time travel by macroscopic objects". Others, however, are more optimistic about the possibilities. Igor Novikov, for instance, calculated in the beginning of the 1990's that the greatest problem preventing time travel, the paradoxes of a person being able to go back in time to kill himself, would not be a problem after all. The paradoxes are removed by a rule of nature that prevents events such as this from happening because they demand too much energy. With highly sophisticated technology, constructing a time machine out of a wormhole might thus be possible. (Tähtinen 2000: 22-27.)

In *HGG1*, Adams makes at least two direct references to wormholes, which can be used for objects to enter into different times and places, as described above in current scientific theories. The first of these uses is in a joke in which all the lost ballpoint pens in the universe slip "through wormholes in space to a world where they knew they could enjoy a uniquely ballpointoid life-style" (*HGG* 1996: 99). In the other joke, a wormhole carries Arthur's words into another place and time:

> At the very moment Arthur said, "I seem to be having tremendous difficulty with my life-style," a freak wormhole opened up in the fabric of space-time continuum and carried his words far far back in time across almost infinite reaches of space to a distant Galaxy where strange and warlike beings were poised on the brink of frightful interstellar battle (Adams 1996: 129).

By a strange coincidence, Arthur's words happen to be a terrible insult in the language of the other commander, and a horrible and long-

lasting war begins between the two races. After the war is over, the opposite sides finally understand that the apparent insult actually came from an Earthman's mouth, and thus they join forces to attack his planet. However, due to a miscalculation concerning scale, the entire fleet gets eaten on Earth by a small dog.

Without actually mentioning the term "wormhole", Adams also presents a very similar portal in *HGG5*. On a desolate planet Arthur and Ford witness a herd of migrating animals "appearing suddenly from thin air at one end of the plain, and disappearing equally abruptly at the other end" (Adams 1996: 776). Moreover, in *HGG2* Adams makes an obvious reference to the event horizon, which is the area surrounding a black hole beyond which nothing, including light, can escape the pull of the hole, and thus collapses in it. In a joke he writes about the "Shoe Event Horizon", beyond which it is "no longer economically possible to build anything other than shoe shops. Result – collapse, ruin and famine" (Adams 1996: 196). Bearing Adams's knowledge of physics and the previous examples in mind, it is reasonable to think Adams new the basics of black holes and wormholes, and that they were the physical vehicles for delivering these jokes.

The black hole has, by this day, become a familiar term for many lay people. However, a less well-known actual physical concept is something called a white hole:

> There are solutions of the equations of general relativity in which an astronaut could fall into a black hole, avoid hitting the singularity and go instead through a small passage, coming out of a white hole, the time reverse of a black hole (Coveney and Highfield 1990: 101).

"Singularity" mentioned in the previous quote is the condition inside an enormously dense gravitational field, such as a black hole, where the concepts of space, time and matter break down (Coveney & Highfield

1990: 31). Although a more rare concept, Adams shows his familiarity with white holes as well. *HGG1* has a passage about the people of planet Magrathea and their business of building custom-made planets. In the process of planet building, "hyperspatial engineers sucked matter through white holes in space to form it into dream planets" (Adams 1996: 78). This exact idea of matter coming out of white holes, along with our knowledge of Adams's skills in physics, makes it highly unlikely that Adams would have coincidentally invented an identical physical term, not to speak of using it in the precisely same principle as theoretical physicists.

4.2.3 Additional dimensions

Adams writes imaginatively of aliens who live in higher dimensions (*HGG3*) or in all dimensions. An example of an alien species living in all dimensions is a space race that exists as creatures closely resembling human beings in their dimension, but in the three space dimensions where the Earth exists, they look like mice (*HGG1*). In *HGG5*, the Guide tells Random, Arthur's daughter, about the dimensions of the Universe:

> In your universe you move freely in three dimensions that you call space. You move in a straight line in a fourth, which you call time, and stay rooted to one place in a fifth, which is the first fundamental of probability. After that it gets a bit complicated, and there's all sorts of stuff going on in dimensions 13 to 22 that you really wouldn't want to know about. (Adams 1996: 758.)

Even though the idea of additional dimensions might sound like complete science fiction, Adams's universe is in fact not that different from string theory's view of the universe, according to Greene. Theodor Kaluza, a Polish mathematician, suggested in 1919 that "the spatial fabric of the universe might possess more than the three dimensions of common experience" (Greene 2000: 187). However, these additional dimensions are not exactly the same as Adams describes in *HGG*.

Kaluza and Oskar Klein, a Swedish mathematician, proposed in 1926 that "the spatial fabric of our universe may have both extended and curled-up dimensions" (Greene 2000: 188). According to the theory, in addition to the three extended spatial dimensions (depth, breadth and width) and one extended time dimension familiar to us, the universe also has several curled up dimensions, and when all the dimensions are added up, we find that our universe consists of eleven dimensions. However, unlike in *HGG*, life could not probably exist in the curled-up dimensions, since their size is only about the Planck length, which is a millionth of a billionth of a billionth of a billionth of a centimeter, or 10^-33 centimeter (Greene 2000: 130, 191-192). The additional dimensions are so small that only strings, which are also about the size of the Planck length, are small enough to move in them, and the way they vibrate in the additional curled-up dimensions in addition to our familiar four extended dimensions, defines the properties of particle masses and force charges. The additional, curled-up dimensions exist as Calabi-Yau spaces, particular types of six-dimensional geometrical forms.

If intelligent beings could not survive in the curled up dimensions, they could neither survive in a universe with other than three flat spatial dimensions. Hawking explains that only a universe with three flat dimensions can contain intelligent life. In a two-dimensional universe, for example, a camel could not digest food because an apple, going through the animal, would cut the animal in two. On the other hand, in a universe with four or more flat dimensions, the gravitational force between two objects approaching each other would increase too dramatically, thus preventing stable orbits of planets around their suns. (Hawking 2001: 88.) To come to the point, Adams is not being that silly in talking about additional dimensions in his books after all. Modern

science actually considers the existence of more than four dimensions seriously, although from a somewhat different perspective than Adams.

In summary, instability of the space-time in the universe of *HGG* actually largely resembles that of our universe. Matter materializes out of a vacuum and curves in space-time might ultimately make time travel possible, while relative time travel takes place on a small scale every day. Also the existence of additional dimensions is food for thought in both universes, although in our world the question is more of a theoretical one. Furthermore, all of these themes were in discussion before Adams wrote his books, and some of Adams's jokes even make direct references to these phenomena. Thus, it is highly probable that Adams was influenced by these theories.

4.3 Chaos and thermodynamics

In *HGG* the instability of the universe also shows in its chaos. It is important for the reader to know that besides God, also other gods exist in Adams's universe, such as Tor, the Thunder God, whom Arthur and friends meet at a party (*HGG3*). In Adams's universe no one knows what is going on. All gods, not to mention humans, are weak and powerless when the workings of the universe are concerned. In fact, in the universe of *HGG* "all known gods came into existence a good three millionths of a second after the Universe began rather than, as they usually claimed, the previous week" (Adams 1996: 655). Even God himself feels powerless to keep everything in control, as can be seen in his last message to his creation, written "in thirty-foot-high letters of fire on top of the Quentulus Quazgar Mountains in the land of Sevorbeupstry on the planet Preliumtarn, third out from the sun Zarss in Galactic Sector QQ7 Active J Gamma" (Adams 1996: 468). God's final

message to his creation is: "We apologize for the inconvenience" (Adams 1996: 610).

Chaos in *HGG* also shows in the instability of the basic laws of physics. One can cheat gravity and learn to fly without any flying devices. In *HGG3*, as Zaphod in his depression gets drunk and locks himself in a bathroom, Trillian starts to flip through the Guide to find some physical challenges to cheer him up. Under the heading "Recreational Impossibilities" she finds information about learning to fly:

> The knack lies in learning how to throw yourself at the ground and miss . . . One problem is that you have to miss the ground accidentally . . . You have to have your attention suddenly distracted by something else when you're halfway there, so that you are no longer thinking about falling, or about the ground, or about how much it's going to hurt if you fail to miss it. (Adams 1996: 363-364.)

Having the ability to be constantly distracted by thoughts irrelevant from whatever that is important at the moment, it is Arthur who eventually finds himself mastering this skill, although accidentally, and carelessly flies around on many occasions in *HGG*. For instance, he makes love to a woman on the wing of a flying Boeing 747 (*HGG4*). Thus the instability in *HGG* goes so far that one cannot even rely on the basic laws of physics, which are thought to be constant, stable and reliable holds in life, even if everything else goes beyond one's imagination. In this way Adams makes yet another statement of not being able to have a fixed and steady idea of even the simplest phenomena in the universe.

In *HGG3*, Slartibartfast, an old alien who designed the fjords of Norway, clarifies the materializing of the Chesterfield sofa mentioned earlier: "The time streams are now very polluted. There's a lot of muck floating about in them . . . and more of it is now being regurgitated into the physical world" (Adams 1996: 385). This disarray is due to time traveling. Time traveling in *HGG* makes a mess of the past and the

future, and even when people travel in time with good intentions to fix the confusion caused by other time travelers, as the people from "The Campaign for Real Timers" do, it only adds another loop in the flow of events and thus history drifts farther and farther from the original one. The harder the "Real Timers" work to create order, the more disorder they cause at a larger scale.

While Einstein introduced a highly chaotic view of our universe with the bent space and time conceptions of relativity theories, thus forcing the earlier idea of an orderly, well-behaved universe to be forgotten at some levels, it is the area of thermodynamics that really makes chaos a keyword of our own universe. Chaos in our universe, however, does not show itself in unstable laws of physics or complex time loops. Instead, chaos shows itself in the behavior of all matter and energy in our universe, at least according to thermodynamics.

Thermodynamics is, simply put, the discipline describing "the relationship between heat and work, spelling out how heat can be converted into or exchanged with other forms of energy" (Coveney & Highfield 1990: 32). Peter Coveney and Roger Highfield, in their *Arrow of Time. The Quest to Solve Science's Greatest Mystery* (1990), aim to show that both relativity theories and quantum mechanics are flawed in their inability to explain why we observe time moving only forwards and never backwards. Relativity and quantum mechanics are time symmetric, which means that a bull running backwards into a china shop and making broken vases on the floor become fixed and rise back to the tables as the bull backs up through the store, is actually an event nothing prevents us from witnessing if we are to believe blindly the predictions of these theories. In Coveney and Highfield's view, thermodynamics, and especially the second law of thermodynamics, has the capacity to explain why we never witness a scenario such as

this, because according to the second law, when a china vase falls to the ground and breaks, some of the kinetic energy translates into heat and sound energy, and can never be recovered. The heat and sound can never go back together with the broken pieces, because the second law states that "heat can only flow from a hotter body to a cooler one". (Coveney & Highfield 1990: 32.)

Implications following from the second law of thermodynamics reveal that, similarly to Adams's universe with its ever-increasing chaos, our universe is as well constantly headed to a more disordered state:

> The entropy of a system always increases: Everything tends toward greater disorder . . . Even if you clean your cluttered desk, decreasing its entropy, the total entropy, including that of your body and the air in the room, actually increases (Greene 2000: 334).

Entropy means disorder, or a measure of the capacity to change (Coveney & Highfield 1990: 33). This constant increase of entropy is taking place in the entire universe. Simply put, in the beginning the universe was small and very organized, meaning that it had a very low entropy. As the universe expands, its entropy/disorder increases and "the energy of the universe is dissipated into a disperse soup of waste heat, a process known as the Heat Death of the universe" (Coveney & Highfield 1990: 33-34). In the end, when everything has dissipated into a homogenous heat soup, the universe is in a cold state of equilibrium. Coveney and Highfield stress that in reality the process is not that simple. Thermodynamics has a discipline called non-equilibrium thermodynamics. It explains how, on a universally small time-scale, organization can develop in a universe, which is in the process of the Heat Death but still far from the cold, static equilibrium state. Intelligent life is an obvious example of complex organization. Human beings have developed during the course of the past hundreds of millions of years, and sooner or later we will also disappear. In the

universal time-scale, however, the existence of our physical bodies of highly organized molecules is a short moment, and it does not make a great difference in the slow Heat Death of the universe.

Thus, as I have suggested, both our universe and that of *HGG* share the same feature of tendency towards chaos and greater disorder. Whereas in Adams's writing the chaos shows in unstable laws of physics and chaotic space-time, thermodynamics is the context in which tendency towards disorder shows itself on a universal scale. Of course, this is not ground enough to claim that thermodynamics has been the inspiration for Adams's writing. However, Adams's familiarity with thermodynamics in addition to Einstein's relativity theory and quantum mechanics will become more evident in chapter 5.2.

In a nutshell, the space-time and our views of it are unstable in both Adams's universe and that of ours, at least according to physical theories of the 20th century. Space and time tear and bend, dimensions beyond our perception may exist, and chaos appears to control the course of both worlds. The similarities do not end here, however: rather than being predictable, both universes seem to be governed largely by probability.

5 PROBABILITY IN THE UNIVERSE

In this section I will describe the central role both probability and improbability play in Adams's universe. I will also attempt to show that our own universe is basically not predictable either, but that it actually functions in a fundamentally probabilistic manner as well. Moreover, as is the ultimate aim of this study, I will once again provide evidence to back up my suggestion that physical theories have been a major inspiration for Adams. The first sub-chapter of this section will describe the main cause for improbable situations in *HGG*, and starting from 5.2 I will draw on similarities between the universe of *HGG* and that of ours.

5.1 The infinite improbability drive

Improbability is a powerful, inherent feature of the universe in *HGG*, and wildly improbable events take place at an increasing rate as the story proceeds. However, the unbelievable events in *HGG* often have an explanation other than coincidence or divine guidance: The Infinite Improbability Drive (hereafter also Drive). Since it is highly improbable for a space ship to disappear in one section of space and time and reappear in another place and time (without using a wormhole), alien scientists built a machine, which could generate an infinite improbability field. When a traveler wants, for example, to travel from our time to the end of the universe in a "nothingth of a second", he must first calculate how improbable that kind of an event would be. This figure is then fed into the infinite improbability generator of the spaceship, and the machine does the improbable thing: takes the traveler to the end of the universe. However, if the passenger uses the Drive and is not in the improbability-proof control cabin of the ship, the passenger himself will see and experience highly improbable things

during the trip, such as "hot doughnuts [popping] out of the road" (Adams 1996: 57). Zaphod steals the *Heart of Gold*, the spaceship containing the prototype Drive, and together with Arthur, Ford and friends they begin their adventures in highly improbable places and situations (*HGG1*).

In *HGG3*, Adams yet again expresses his familiarity with Einstein's relativity theories, as Arthur, Zaphod, Ford and Trillian use the Drive to get to planet Argabuthon:

> The computer injected the number into the ship's reconstituted Improbability Drive. In Relativity, Matter tells Space how to curve, and Space tells Matter how to move. The *Heart of Gold* told space to get knotted, and parked itself neatly within the inner steel perimeter of the Argabuthon Chamber of Law. (Adams 1996: 461.)

Another example of an improbable situation caused by the Infinite Improbability Drive is when Zaphod and Trillian rescue Arthur and Ford from hovering without spacesuit in space. The *Heart of Gold* picks Arthur and Ford up at the same sector of space where Zaphod had earlier picked Trillian up from a party, even though it has the whole of the universe to choose from. Arthur had also been at the same party, talking to Trillian. The probability for Arthur and Ford being rescued from space from their point of view was "two to the power of two hundred and seventy-six thousand seven hundred and nine to one against", while the phone number of the apartment, from which Zaphod picked Trillian up, happened to be the same. Moreover, Zaphod is Ford's semi-cousin. The spaceship's computer calculates the probability for this situation to be two to the power of infinity minus one to one against (*HGG1*).

In brief, although wildly improbable events take place throughout the story in *HGG*, Adams often justifies them with the plot-driving vehicle

of the Drive. However, probability is also an inherent feature of our universe, and a fictional Drive is not needed to draw impressive implications from it; the equivalent of the Infinite Improbability Drive in our universe might be what is called the Heisenberg's uncertainty principle.

5.2 Heisenberg's uncertainty principle

Although it does not sound very reasonable, the incident of hot doughnuts popping through the road in *HGG1* has its counterpart in Greene's *The Elegant Universe*. Greene writes about events of a similar nature, which could happen at tiny probabilities. According to Greene it is in fact possible in the real universe for you to walk into a thick, solid concrete wall and pass through it, both you and the wall remaining intact, although it is highly improbable. This astounding possibility is based on what is called the Heisenberg's uncertainty principle, discovered by Werner Heisenberg in 1927 (Greene 2000: 112):

> Simply put, Heisenberg's principle says that in the sub-atomic realm it is impossible to know simultaneously the position and the momentum of [an] electron with any precision. If one wishes to measure the exact position at some instant, then its momentum (or equivalently its velocity) cannot be known with any certainty whatsoever and *vice versa* . . . In general terms, the uncertainty principle means that the more precisely we know the measured value of one quantity, the greater the uncertainty in another 'conjugate' quantity. (Coveney and Highfield 1991: 125-126.)

Although the principle seems to state that the problem mentioned above is only due to insufficient measurement devices, studies of the past decade suggest that, for example, an electron actually cannot be thought of being at a certain location and having a certain velocity. This is due to "the motion of microscopic particles [becoming] increasingly wild when they are examined and confined to ever smaller regions of space" (Greene 2000: 115). In addition to showing this "trade-off" relationship between measuring the position and velocity of a particle,

Heisenberg showed that the same applies with measuring the energy of the particle and the time it takes to do the measuring. Simply put, as long as the time scale is short enough, microscopic particles can and sometimes do borrow energy from the universe "to do what is impossible from the standpoint of classical physics – momentarily penetrate and tunnel through a region that they do not initially have enough energy to enter" (Greene 2000: 116). If all of the individual particles in a human body would simultaneously borrow enough energy, one could actually penetrate a concrete wall without breaking it. However, the probability for this is so small that "if you walked into a solid wall every second, you would have to wait longer than the current age of the universe to have a good chance of passing through it on one of your attempts" (Greene 2000: 116). Basing on the Heisenberg uncertainty principle, this tunneling phenomenon was discovered in 1928 independently by George Gamow in Göttingen and Ronald Gurney and Edward Condon in Princeton. Kragh (1999: 178) describes this occurrence "a case that today enters all introductory textbooks in quantum mechanics".

For a man who discouraged a student from drawing attention to his use of physical theories in his writing because he used them only in the logic of jokes, Adams actually makes a fairly lavish show of his understanding of both quantum mechanics and thermodynamics in a joke with an idea of an object tunneling through an obstacle:

> The principle of generating small amounts of *finite* improbability by simply hooking the logic circuits of a Bambleweeny 57 Sub-Meson Brain to an atomic vector plotter suspended in a strong Brownian Motion producer (say a nice hot cup of tea) were of course well understood – and such generators were often used to break the ice at parties by making all the molecules in the hostess's undergarments leap simultaneously one foot to the left, in accordance with the Theory of Indeterminacy (Adams 1996: 60; emphasis original).

Brownian motion is "the random dance of small particles of pollen (or, indeed, dust or soot) suspended in water" (Coveney & Highfield 1990: 110). Einstein first explained Brownian motion to be caused by the random collisions of water molecules and the pollen particles, and thus to be an indication of the atomistic nature of matter (Coveney & Highfield 1990: 110). The term is usually associated with thermodynamics, which I already suggested Adams to be familiar with. The "Theory of Indeterminacy" is another term for the Heisenberg uncertainty principle, and Adams's use of the term while describing an object tunneling through another object is convincing evidence of his use of these physical theories as a basis for his writing.

5.3 Feynman's "sum-over-histories" theory

In *HGG*, "As soon as the ship's drive reaches Infinite Improbability it passes through every point in the Universe" (Adams 1996: 64). This of course sounds ridiculous, and it would be reasonable to expect that no physicist in his sound mind would suggest things like that to appear in our universe. However, such a phenomenon might actually be a part of our universe, at least according to some scientists. This idea has sprung from an experiment, carried out by Thomas Young in the early 19th century, where light is shone on a thin solid barrier in which two slits are cut and a photographic plate records the light that gets through the slits. Some photons, which can also be thought of as "bundles of light", go through one slot, and some photons go through the other slot. Interfering photons cancel each other out, and thus a sequence of light and dark bands, known as an interference pattern, becomes visible on the photographic plate. It is easy to understand that in a massive flow of photons, the photons cancel each other out and thus produce the interference pattern. The problem is that even individual photons being fired one by one at the barrier produce the same pattern. "Somehow,

temporally separated, individual particulate photons are able to cancel each other out" (Greene 2000: 102). A photon passing through one slit is in some strange way affected by whether or not other slit is open. This phenomenon shows that light, while consisting of photons, has wave-like features as well. Further experiments have shown that in fact all matter has wave-like properties, since a similar slot test with electrons also produce an interference pattern. (Greene 2000: 98-105.)

Richard Feynman, according to Greene (2000: 108) "one of the greatest theoretical physicists since Einstein", proposed a solution to the paradox in the slot test, in which individual electrons produce an interference pattern, when it should not be possible if each electron goes through one of the two slits only. In Feynman's bold suggestion modern physics agrees fully with the quote from the *HGG,* where the spaceship goes through every point in the universe. Feynman proclaimed that "each electron that makes it through to the phosphorescent screen actually goes through *both* slits" (Greene 2000: 110; emphasis original). And, as if this does not sound crazy enough, Feynman argued that "in traveling from the source to a given point on the phosphorescent screen each individual electron actually traverses *every possible trajectory simultaneously*" (Greene 2000: 110; emphasis original). The electron goes through both slits and, for example, "goes on a long journey to the Andromeda galaxy before turning back and passing through the left slit on its way to the screen", and all of this happens simultaneously (Greene 2000: 110). Although this sounds completely unbelievable, "the results of calculations using Feynman's approach agree with those of the wave function (probability wave) method, which agree with experiments". Feynman has put it well: "[Quantum mechanics] describes nature as absurd from the point of view of common sense. And it fully agrees with experiment. So I hope you can accept nature as She is - absurd" (Greene 2000: 111). Feynman

developed this "sum over histories" idea in the 1940's (Coveney and Highfield 1991: 123), so also this theory was available for Adams. In this case the actual scientific theory being the inspiration for the phenomenon in *HGG* is particularly likely, since the idea of the ship passing through every point of the universe is so close to Feynman's concept.

5.4 The ultimate probabilistic nature of both universes

Probability is such a strong factor in the universe of *HGG* that it is basically treated as the fifth dimension in addition to the three spatial dimensions and the dimension of time: "Space, time and probability all have axes along which it is possible to move". Earth lies on "a fault line in the landscape of probability", and this means that at many probability co-ordinates, instead of changing, Earth simply ceases to exist. Earth has an "inherent instability, which is typical of anything that lies within what are usually designated the Plural sectors." (Adams 1996: 761-762.) This instability means, for instance, that human beings can simply disappear if they travel in hyperspace, as happened to Arthur's girlfriend Fenchurch (*HGG5*).

Probability is, in fact, such a central feature of the universe in *HGG* that amazingly improbable things start to happen to the characters even without The Infinite Improbability Drive, which originally made the incredible events possible. For instance, at one point, after Arthur has come back home from his adventures in space, he eats three very old items of food from his refrigerator. It just so happens that these three pieces of old food together kill a dangerous space disease he had got in the Flargathon Gas Swamps some time earlier, "which otherwise would have killed off half the population of the Western Hemisphere, blinded the other half and driven everyone else psychotic and sterile, so the

Earth was lucky there" (Adams 1996: 509). Since "coincidences" such as this start to happen more and more as the series progresses, one could definitely say that probability is a significant and inherent feature of the universe in *HGG*.

According to Greene, probability plays an essential role in how our universe functions as well. In 1926 Max Born, a German physicist, suggested that since an electron has wave-like properties, "an electron wave must be interpreted from the standpoint of probability" (Greene 2000: 105). In other words, an electron is more likely to be found in some places than others. Greene (2000: 106) writes that "according to Born and more than half a century of subsequent experiments, the wave nature of matter implies that matter itself must be described fundamentally in a probabilistic manner". If an experiment involving an electron is repeated numerous times in an identical manner, the result, for instance the measured position of an electron, will not be identical each time. The probability wave of an electron predicts how likely an electron is to be found in a certain location.

Taking into account the examples I have mentioned in the previous chapters, it should be obvious that probability, while being an important theme in *HGG*, also plays an essential role in the way our real universe behaves. The behavior of microscopic particles, which we all consist of, cannot be predicted accurately after all. We can only make calculations of the probabilities of possible events in the physical reality. Greene summarizes this change in our worldview almost poetically:

> By 1927, therefore, classical innocence had been lost. Gone were the days of a clockwork universe whose individual constituents were set in a motion at some moment in the past and obediently fulfilled their inescapable, uniquely determined destiny. According to quantum mechanics, the universe evolves according to a rigorous and precise mathematical formalism, but this framework

> determines only the probability that any particular future will happen - not which future actually ensues. (Greene 2000: 107.)

Remembering Adams's pithy depiction of the probabilistic nature of matter in the example I gave in chapter 3.5, and also and his reference to the Heisenberg uncertainty principle and the tunneling phenomenon in *HGG*, it is fairly safe to say that Adams understood the current views of the probabilistic nature of our universe. Therefore, I claim that the fundamentally probabilistic nature of the universe in *HGG* is not a coincidence, but actually inspired by popularized understanding of theories by physicists such as Heisenberg and Feynman.

6 METAPHYSICS IN THE UNIVERSE OF *HGG*

This section mostly discusses the metaphysical themes in *HGG*. These topics are such central factors in the overall functioning of the universe of *HGG* that they need to be studied in this thesis. Moreover, although it might not be expected, even these ideas reveal influences from different fields of theoretical physics. For example, the previously mentioned Heisenberg's uncertainty principle and Feynman's sum-over-histories theory have clearly inspired the joke about the great question of the meaning of life in *HGG*. Although the physical phenomena in actual physical theories are often far from the events in *HGG*, the terminology is habitually very similar. Therefore, in the following section I aim to show that theoretical physics has been a major inspiration in the themes of fate and meaning of life in *HGG* as well. Instead of in the context of the more "tangible" physical themes, the topic of parallel universes is discussed in this section, since Adams mainly uses parallel universes to introduce the fate of individuals.

6.1 Fate

In another answer to a question made by a reader, Douglas Adams said he did not believe in fate (Gaiman 2002). However, the lives of some of the characters in *HGG* seem to be proceeding according to some grand plan, and often the plan seems to be made by some higher entity with a twisted sense of humor and nothing better to do than make some people's lives intolerable. An excellent example of a poor victim of fate is a person called Agrajag. In each and every one of his lives, Agrajag is somehow killed by Arthur Dent (*HGG3*). The fact that Arthur has been totally unaware of this brings more bitter irony to the story. In his numerous lives Agrajag has been whacked to death as a housefly, made into a bag as a rabbit, trod on as a newt, swallowed as an oyster, slaughtered as a cow, caught as a fish and so forth, and always by Arthur. The overwhelmingly annoyed Agrajag finally catches Arthur and asks him for a reason before intending to brutally kill his murderer. Arthur believes "it's just fate playing silly buggers with…us. It's a complete coincidence" (Adams 1996: 399). Whether this is fate or another example of the wild improbabilities of the universe, the reader never finds out. Nevertheless, Arthur manages to escape the furious Agrajag by accidentally killing him again. Another example of a person displeased with his fate in *HGG* is Rob McKenna, a lorry driver who also happens to be a Rain God. Since he is a Rain God, rain follows him wherever he goes. The downside is that he hates nothing as much as rain. (Adams 1996: 479-481.)

Seers and other wise men seem to know something about fate in people's lives. At one point Arthur needs guidance in his unhappy life and he asks an ascetic sitting on a pole for advice. The ascetic gives him a special prayer, individually tailored to him and his special needs:

> Protect me from knowing what I don't need to know. Protect me from even knowing that there are things to know that I don't know. Protect me from knowing that I decided not to know about the things that I decided not to know about. Amen. (Adams 1996: 704.)

Another prayer goes with the first one: "Lord, Lord, Lord. Protect me from the consequences of the above prayer"(Adams 1996: 704). These prayers might have something to do with Arthur's constant state of ignorance in his adventures; no matter what the situation is, Arthur's comment is usually either "What?", "I don't understand" or "Where's the tea?" (Adams 1996: 133). The prayer hints that Arthur may have decided to stay ignorant, and will therefore suffer later on. This might be Adams criticizing narrow-minded people who are incapable of expanding their views and meeting the requirements of a changing world. Arthur fails to meet these requirements, or to understand the events around him and the hints they provide, and possibly for this reason he ultimately faces doom (*HGG5*). In other words, maybe people would have the power to change their lives, if they only paid enough attention to it. In summary, although Adams does not reveal whether or not fate is something that cannot be changed in *HGG*, it nevertheless seems to be something that guides people's lives.

Fate, or by another definition a future that is bound to happen and thus predictable, has also been in the discussion of theoretical physics. The question is, is it hypothetically possible to predict the future of all particles in our universe on the basis of their current positions and velocities. Marquis de Laplace introduced this idea called scientific determinism in the early 19th century, thus suggesting that the state of the universe can be predicted at any time in the past or the future, given that the present state of it is known (Hawking 2001: 104). Also quantum mechanics can be seen as a deterministic theory. Although the uncertainty principle prevents us from knowing simultaneously both the position and the velocity of a particle, it does not remove the

determinism from quantum mechanics. A particle's state can be represented by wave function, which is "a number at each point of space that gives the probability that the particle is to be found at that position" (Hawking 2001: 106). The Schrödinger equation is an equation, which gives the rate at which the wave function changes with time. If the wave function is known at one time, the Schrödinger equation can be used to calculate the wave function at any other time in the future. Thus, although the wave function reveals only either the position or the velocity of a particle at a given time in the future, quantum mechanics can still be considered deterministic. (Hawking 2001: 108.)

It is impossible to say whether or not Marquis de Laplace's idea of scientific determinism or the concept of wave function has influenced Adams and the property of fate in the universe of *HGG*, since Adams does not mention these theories by name. Nonetheless, scientific determinism is very probably a concept that Adams has come across when reading theoretical physics, and thus it can be proposed to be a possible influence for the concept of fate in his writing.

6.2 Parallel universes

The existence of parallel universes is a subject that logically could have been discussed in a context more scientific than the metaphysical section of this study. Nevertheless, the concept of parallel universes in *HGG* is mainly used to observe the choices people make in their lives and the results of these choices, and thus it relates more to the question of the meaning of life.

In Adams's world there is an endless number of parallel universes, and a new universe is born out of every possible choice in every universe at

every moment in time. According to the idea in *HGG* there is, for instance, a universe somewhere exactly similar to this one, except for a tiny difference in one atom on the top of your nose. Since Earth was demolished in the beginning of *HGG*, Adams uses parallel universes as a means for the characters to get back to Earth by traveling to another universe, although the other Earths will not be exactly similar to the one the characters originally came from.

Trillian is an excellent example of the way Adams uses parallel universes to discuss the choices and their effects on people's lives. In the "main" universe she originally leaves the Earth when Zaphod takes her out into space before the planet is demolished (*HGG1*). Later on in the series Trillian "wished she'd stayed on Earth", wishes that she "hadn't gone off with that stupid brain-dead fruit gum, Zaphod", and she thinks she "would have had a different life" (Adams 1996: 744). Meanwhile, Adams follows Trillian in another universe, where she did not go off with Zaphod. Ironically, in this universe she regrets not going off with him, and thinks she lost "a whole other life" (Adams 1996: 651). In this way Adams might also be suggesting that fate controls people's lives, that if a woman is destined to live a regretful life, she cannot change it; she will be unhappy no matter what choice she makes to try to prevent it.

Due to the uncertainty principle, different futures of a particle have certain probabilities, and thus "the universe keeps on rolling the dice to see what happens next" (Hawking 2001: 80). What follows from this is a view of multiple histories of our universe that sounds very familiar to Adams's idea of multiple universes with very small differences in each:

> The universe . . . doesn't have just a single history, as one might have thought. Instead, the universe must have every possible history, each with its own probability. There must be a history of the universe in which Belize won every

> gold metal at the Olympic Games, though maybe the probability is low. (Hawking 2001: 80.)

This idea is an extension on the sum-over-histories theory by Richard Feynman, also known as the multiple history idea (chapter 5.3 above). The idea was that a particle actually travels through all possible trajectories, although all except one cancel each other out. All the other trajectories are here considered the multiple histories of the particle. Hawking (2001: 80) places value to the theory by stating that it "is now accepted as science fact". For a layperson with an understanding and imagination somewhat more limited than that of Feynman's or Hawking's, the essence of the idea of multiple histories of the universe is difficult to grasp, let alone explain. Nonetheless, for the objectives of this study, suffice it to say that the idea of multiple histories of the Earth with slightly differing properties was in scientific discussions well before Adams wrote of similar conditions: Feynman received the Nobel Prize for the idea in 1965 (Hawking 2001: 83).

Setting the idea of multiple histories of the universe aside, Brian Greene presents a few theories about the possibility of actual additional universes. These theories, however, do not come as close to Adams's idea as that of Feynman's does. Andrei Linde, a physicist at Stanford University, has suggested that our universe might actually be a *multiverse*, a greatly larger spread of cosmos. According to Linde, this multiverse might have born in much the same way that our universe was, in an inflationary expansion in the Big Bang:

> The conditions for inflationary expansion may happen repeatedly in isolated regions peppered throughout the cosmos, which then undergo their own inflationary ballooning in size, evolving into new, separate universes (Greene 2000: 366).

However, unlike Adams's world, in Linde's suggestion the universes do not contain different representations of people from our universe.

Instead, the other universes might be so different from ours that they even have different physics, and the amount of extended spatial dimensions in these additional universes may vary from zero all the way to ten. Greene also describes other theories concerning additional universes. Lee Smolin of Penn State University has suggested that a new universe might be created from every black hole through an explosion resembling the Big Bang. According to this theory, however, the black hole's event horizon would permanently hide the universe from us. (Greene 2000: 366-377.)

As I have shown, although approaching the subject somewhat differently, theoretical physics has seriously proposed that there may be more universes than the one we experience. As I already mentioned, Feynman was rewarded for his idea in 1965, and Linde proposed his idea of multiple universes in 1982 (Linde 2006). Since *HGG5*, which has the references to multiple universes, was published in 1992, these theories have been there for possible inspiration for Adams, and given the similarity of Adams's universes with Hawking's description of the idea, inspiration is, in this case as well, highly probable.

6.3 The meaning of life

The meaning of life is another essential theme in *HGG*. Actually, what we would call the meaning of life, Adams (1996: 113) calls "the Answer to Life, the Universe, and Everything". In *HGG1*, a race of highly intelligent beings that can exist in numerous dimensions set out to find the Answer, and built Deep Thought, a powerful computer whose name is an obvious joke, to calculate it. Deep Thought took seven and a half million years to calculate the Answer and finally announced it to be forty-two. The beings were naturally displeased with the Answer, and Deep Thought said that the problem was that the actual Question was

in fact unknown. Thus, to calculate the Question, Deep Thought designed planet Earth, the most powerful computer ever built, "a computer of such infinite and subtle complexity that organic life itself shall form part of its operational matrix" (Adams 1996: 122). The hyper-intelligent beings themselves were put on Earth in the form of mice to pilot its ten-million-year program. However, Earth was demolished by Vogons only five minutes before the calculation was completed.

Later on, in *HGG2*, Ford and Arthur have an idea of how to find out the Question. Since Arthur as an Earthling had been a part of the computer program calculating the question, maybe he could fish it out of his unconsciousness by randomly putting Scrabble letters on a Scrabble board. However, as it at one point has turned out, human beings are not an integral part of the computer program, since humans are not descended from apes after all. They have descended from the Golgafrinchans, a space race whose individuals crashed on Earth about two million years B.C., long after the program started to run. However, Marvin had seen a version of the Question in Arthur's brainwave patterns earlier, so Arthur and Ford decide to give it a try, although the Question will probably be the wrong one, or a distortion of the right one. Arthur fishes the Question out of his brain, and it turns out to be: "What do you get if you multiply six by nine?" Thus, everything about the Answer and the Question is a mess. The Answer, forty-two, is in this context meaningless. The Question, whether it is "six by nine" or in fact "six by seven", is also as unimportant. This is the ultimate point Adams wishes to make about his universe. There are no answers, or at least the answers are nonsensical.

The incomprehensibility of the universe is further highlighted when later on (*HGG3*) a court witness called Prak is given too much truth drug and is then asked "to tell the Truth, the Whole Truth and Nothing

but the Truth" (Adams 1996: 460). After getting the truth drug, Prak starts to tell the truth about the secrets of the universe and cannot stop laughing. From Prak's amused behavior we can see that the universe is most of all ridiculous. Prak informs, with uncontrolled laughter, that frogs have some funny feature in them that people cannot see. Prak also implies that Arthur has some kind of odd, funny and unexpected role in the universe, and that Arthur is somehow the most ridiculous person in the universe. Unfortunately Prak is not able to clarify this because he cannot stop laughing at Arthur.

However, when Arthur then asks Prak if he knows the Question, Prak says: "the Question and the Answer are mutually exclusive. Knowledge of one logically precludes knowledge of the other. It is impossible that both can ever be known about the same Universe" (Adams 1996: 465). This statement bears a remarkable resemblance with Heisenberg's uncertainty principle of 1927. As with references to Feynman's sum-over-histories theory, the similarity between the uncertainty principle and Adams's text is, again, far too great to be considered a coincidence.

When telling about the universe, Prak also adds:

> If [someone figured out the Question], it seems that the Question and the Answer would just cancel each other out and take the Universe with them, which would then be replaced by something even more bizarrely inexplicable. It is possible that this has already happened, but there is a certain amount of Uncertainty about it. (Adams 1995: 455.)

As I have already shown, this idea of two things canceling each other out is also a central feature in quantum physics. A matter particle and its antimatter particle cancel each other out and create a burst of energy. Also the multiple trajectories of a particle in Feynman's sum-over-histories theory cancel each other out. Thus, the expression of "canceling each other out" in Adams's writing most probably has its model in theoretical physics.

To sum up, the metaphysical themes governing the universe of *HGG* have most likely had much of their inspiration from popularized theoretical physics. Scientific determinism is the only scientific theme presented, which Adams does not make unambiguous references to, and thus its influence is merely probable. However, allusions to Feynman's sum-over-histories theory, ideas of multiple universes and Heisenberg's uncertainty principle are so striking that their influence, in my view, should be acknowledged.

7 CONCLUSION

Traveling through time, objects materializing out of nowhere, the birth of additional dimensions and universes, and an object traveling through all points of the universe simultaneously are the kind of events that take place in the universe of Douglas Adams's *HGG*. Adams also said that any resemblance of these fantastical features of his imaginary universe to the real universe is purely coincidental. About a century ago any scientist would have eagerly agreed, since all of the events mentioned above were considered possible only in the realm of science fiction. However, the science of the 20th century has intruded most of these amazing features of Adams's universe into our concept of the real universe and, though it sounds crazy, for a person of today's society, a large portion of the events in *HGG* are possible, although only in theory and with extremely small probabilities.

Of course this resemblance can be a coincidence, but I find it unlikely. As I have shown, Adams speaks of wormholes as means of traveling and white holes as reversed black holes. He also makes obvious references to Einstein's relativity theories and terms of thermodynamics. The Heisenberg uncertainty principle is given attention with the idea of not being able to know both the question and the answer simultaneously, and also by describing a tunneling phenomenon that takes place according to the principle. Adams also makes a strong statement about the fundamental probabilistic nature of the universe and talks of multiple universes in strikingly similar ways to which Stephen Hawking does, on the basis of Richard Feynman's theory. Furthermore, in describing the movements of the spaceship Heart of Gold, Adams makes a clear allusion to Feynman's sum-over-histories theory.

Therefore, on the grounds of the notions mentioned above and others that came up in this study, I claim that these features in Adams's universe were heavily inspired by our modern concept of the real universe, introduced to us by the relativity theories and quantum mechanics, whether or not Adams was conscious of this. I do not mean to say that Adams copied any of the ideas from the scientists, but that as an intelligent person well read in physics, he most likely had heard of these theories, and that as a writer he was influenced by them, although he adapted the theories very freely to reach a humorous effect. If this is true, it adds to the notion made by biographer M.J. Simpson that Adams said some things about his life that were not completely true.

Recent studies on science fiction have focused, among other things, on humorous science fiction and the interplay of SF and different branches of science. This study makes a contribution to both of these areas: it suggests that, because of Adams's creative references to numerous actual physical theories, *HGG* should gain more appreciation as an insightful and intelligent science fiction-series, and not merely as a light-headed science fiction comedy.

The idea for this study came from the insight that the universe in *HGG* and that introduced to us by several physicists of the 20th century both seem to be crazy, incomprehensible and non-commonsensical in shared ways. After dissecting both of these universes into smaller bits for the purposes of analytical comparison, it is perhaps the word "incomprehensible" that can be used to summarize the overall feel the universes leave us with. In the summary of his book, Brian Greene sums up the effect Einsteinian revolution had to our worldview:

> Who would have guessed that the intuitive, mechanical, clockwork Newtonian perspective would turn out to be so thoroughly parochial – that there was a whole new mind-boggling world lying just beneath the surface of things as they are ordinarily experienced? (Greene 2000: 386).

In the popularized science books used in this study, the physicists make ambitious attempts to explain the functions of our universe on a large scale, and indeed manage to widen our understanding. However, even the most brilliant physicists reach a limit to their understanding, for instance when they are asked about how it all began. That is where science ends and belief starts: "Maybe we will have to accept that certain features of the universe are the way they are because of happenstance, accident, or divine choice" (Greene 2000: 385). Similarly, while Adams drew inspiration from physics even for his metaphysical speculations, he as well chose to leave something unsolved; even when, as a fictional writer, he had the possibility to build his fantastical universe into whatever he wanted, he surrendered before the concept of non-commonsensicality, gave forty-two as the answer to life and along with people left the gods themselves amazed. It is my view, and perhaps was also Adams's, that whether we are hitchhiking through the galaxy in a fantasy world or patiently observing, measuring and calculating in a real-life laboratory, we can never find the absolute truth, because the universe is simply too absurd for anyone to fully comprehend.

Further studies in the area might include a research mapping the use of scientific theories in other works by Douglas Adams. Finding out more about how he reached his understanding of the physical theories might help and give more substantial evidence of the level of inspiration. What actual physics books or authors did he study, and what courses on physics did he take? One might also take some other statements by Adams and study whether or not they can be shown to be untruthful.

This would increase and diversify our comprehension of Douglas Adams even further than M.J. Simpson and other writers have done.

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