בס"ד

חדשות האגודה – ינואר 2016 **The Israeli Society for Science Fiction and Fantasy**

מועדון הקריאה של חודש ינואר

יעסוק בספר **"יום סמק הגדול"** מאת אדם רקס, **ויתקיים בירושלים ובתל אביב.**

המועדון בירושלים יתקיים ביום חמישי, 28.1 ב-19:30, ב"תמול שלום", יואל משה סלומון 5, ירושלים. מנחה: גלי אחיטוב.

המועדון בתל אביב יתקיים ביום חמישי, 28.1 ב-19:30, ב"קפה גרג", ויצמן 2, ת"א. מנחה: דפנה קירש.

פיקניקון ט"ו בשבט – חום האנטים והגרוטים:

ביום שישי 22/1/16 ניפגש בפארק הירקון לפיקניקון לכבוד ט"ו בשבט. הפיקניק יתקיים בשעות 10:30 – 15:00,

בפארק הירקון בת"א. בתכנית הרצאות, משחקים ושיחת רעים. תוכנית מפורטת יותר תפורסם בהמשך.

כל האירועים של האגודה מופיעים בלוח האירועים (שפע אירועים מעניינים, הרצאות, סדנאות, מפגשים ועוד)

לקבלת עדכונים שוטפים על מפגשי מועדון הקריאה ברחבי הארץ ניתן להצטרף לרשימת התפוצה או לדף האגודה בפייסבוק. **Society information is available (in Hebrew) at the Society's site: http://www.sf-f.org.il**

In this issue:

                    – Leybl Botwinik (CyberCozen editor)

Recent Real Relevant Reader Remarks:

From Gary Roth:

"For what it's worth, someone once told me that George Takei (Mr. Sulu from the original Star Trek series) wanted a jogging partner during a break in a Star Trek convention. My friend was the one to win out & that was quite a few years ago. It's nice to know that some of the star (Star?) actors are down-to-earth (no pun intended) enough to engage the public in such a private act."

From Dave Haren:

"Hi Leybl, So now you have fans waiting for Gadot ???

Would a civ who could build a Dyson Swarm 1000 years ago still be using radio? My bet would be no, we are getting away from it every day except for short-ranged stuff like Wi-Fi and military stuff purposely made hard to decipher.

Gene splicing will probably be like cosmetic surgery, what that fixes is a bad self-image. Whether spending the money on psychiatric help would be better economics is a question rarely asked since appearances mean so much to the herd. Since I'm a Vaughn Bode fan, I look forward to eating rats while hiding in the sewer system while the AIs fight out their wars on the surface. Think: Terminator movies combined with a twisted sense of humour.

As the human character said "It's only a matter of time before God intervenes on our behalf." More likely, is that the AIs will resemble the aliens in the Cthulhu Mythos and pay no attention to the humans while pursuing their own agendas."

Captain James Kirk of the USS *Zumwalt?*

I was looking at some newscasts and press reports when I came upon this interesting item that intrigued me, a new model (2015) US Navy Destroyer, the USS Zumwalt.
– Its revolutionary/futuristic ship design caught my eye.
(http://foxtrotalpha.jalopnik.com/this-is-the-navys-newest-destroyer-out-at-sea-for-the-v-1746694657)

Compare a traditional model, with the Zumwalt's new design (one might think that it's the same ship just flipped upside down…):

USS John Finn | USS Zumwalt

 The tie-in for us, however, came when I read in Wikipedia that:
"…*Zumwalt'*s commanding officer is **Captain James A. Kirk**. Kirk attracted some media attention when he was first named captain, due to the similarity of his name to that of the *Star Trek* television character **Captain James T. Kirk**, originated by William Shatner. Shatner wrote a letter of support to *Zumwalt'*s crew in April 2014."
See at: https://en.wikipedia.org/wiki/USS_Zumwalt

Fiction/Fantasy + Forty (M$) = Future Fact

DOT Has $40M for the Best 'Smart City' Proposal

BY DON REISINGER DECEMBER 8, 2015 05:40PM EST
The winner will receive up to $40 million in DOT funds, and Paul Allen's Vulcan will provide another $10M

From the editor, LB: So, all you budding architects / city planners – particularly those in the field of transportation (public and private) here's your chance to create the future! See the video at the end of the article at: http://www.pcmag.com/article2/0,2817,2496302,00.asp

- And also the "10 Smartest Cities In The World" at: https://www.youtube.com/watch?v=E6l0wLG7c9I
- .. and while we're at it (if you have the time) a ½ hour video "The World's Future MEGAPROJECTS (2015-2030's)" – A documentary on the ten most ambitious mega-projects currently under development around the world, featuring: Dubai World Central Airport (United Arab Emirates); Songdo International Business District (South Korea); Tokyo-Osaka Maglev Train (Japan); Masdar City (United Arab Emirates); The Grand Canal (Nicaragua); National Trunk Highway System (China); International Thermonuclear Experimental Reactor [ITER] - Fusion (France); World's Tallest Building (Azerbaijan); Delhi-Mumbai Industrial Corridor (India); King Abdullah Economic City (Saudi Arabia). See at: https://www.youtube.com/watch?v=yOCpo10zQlM

More on AI – Part VIII

By Leybl Botwinik

In the previous discussions, we presented Artificial Intelligence (AI) in mechanical devices (mostly) resembling humans in form, speech, and action. In addition to the 'traditional' Robot, thinking machines and AI software across networks are becoming more a part of our life – and in literature and movies – more a part of the Science Fiction culture.
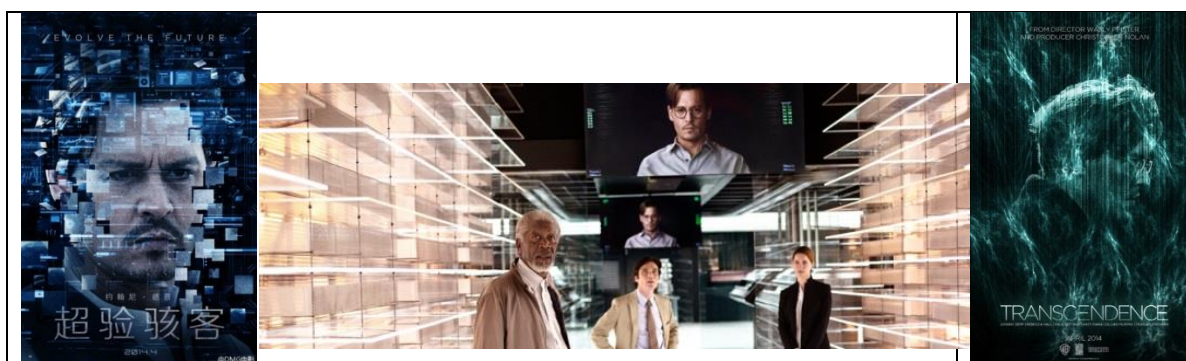
The movie "*Transcendence*" attempts to show us a possible future scenario, where mankind faces a quite possible challenge to its independence – not so much on the global level, as on the personal level. Is that good or is that bad? (see also the "Sheer Science" section – towards the end).

MOVIE REVIEW: Transcendence – The Fine Line between AI and HI*
(*HI=Human Intelligence, as opposed to AI/MI=Artificial/Machine Intelligence)

By Leybl Botwinik

In the previous discussions, we presented Artificial Intelligence (AI) in mechanical devices (mostly) resembling humans in form, speech, and action. We also skimmed over 'pure' AI evolving awareness. What happens, though, when human and artificial minds blend? Here is one take on that. The movie "Transcendence" attempts to show us a future scenario, where mankind faces a realistically possible challenge to its independence. Is that good or is that bad?

First of all, I want to say I personally really enjoyed the movie despite some bothersome time cuts that kill the flow (flashbacks – jumping back a few years, jumping ahead). There are just enough emotional parts, just enough decent acting, just enough action and 'violence', high-tech, controversy, etc. to keep the audience satisfied. I'm pretty sure – from a purely movie-going experience that there will be those that will enjoy viewing the movie and many that won't (IMDB only gives it a 6.3/10). The acting was OK (decent), but not spectacular (not something that will immediately sweep you off your feet), and there is a **good** lineup of actors. What I enjoyed most, however, were the ideas the story brought out. I would classify this as a great movie to discuss [which in truth, we're doing now…].

The movie initially deals with what would happen if a human mind interfaces with an artificial/mechanical one – and if the 'government' (the so-called "powers that be") thought this might pose a threat to humanity (or to them: how dare you control them – that's my job…), and then how they would react. This in and of itself is an interesting topic within the film – and of course a necessary part of it. Other issues that are exposed include: Should one mix a human

and artificial mind? At what point is it 'wrong' to advance humans (physically and mentally)? How can one know if an AI is really 'alive' or just a very sophisticated program? Etc.

The movie begins with a few opening shots of 'dead tech'. We see a small town (Berkley, California) – probably early morning – where the traffic lights are not working, a broken smartphone on the grass, and one I especially liked: a shop owner opens his place for business and jams a laptop under the door as a doorstop ☺. There is an armed soldier, then you see people lined up in the street in front of a store, and others on bikes. One of the main protagonists comes to a house and you are soon taken back in a script cut to five years earlier. This 'flashback' is the gist of the first part of the film, as we slowly progress to 'today', and how all this came about, when Dr. Will Caster's mind/consciousness ('soul' or 'essence') is digitalized and uploaded to a machine.

BTW the name selected by the writer – Jack Paglen – for the main protagonist "WILL" Caster, is beautiful, because the Will of mankind is being tested. Also "Caster" is one who casts/throws, and in this case, he casts his will – on others.

At this point, dear reader, you can see my **SUMMARY** – in the following split column section – of what happens in the movie (various minor spoilers) or just jump to my thoughts at the end.

[LB: START OF SUMMARY]
We first meet some of the main protagonists in the film at a symposium discussing AI, and advanced scientific/medical techniques for hopefully curing cancer, etc. We meet DR. WILL CASTER (played by Johnny Depp – although most anyone could have done this role just as well), perhaps the top person in AI.

He is joined by his wife EVELYN (played by Rebecca Hall) who is in the field of bio-engineering, and a slightly younger version of the fellow in the opening act of the film, MAX WATERS (played by Paul Bettany). They are participating in a forum in front of an audience in a large hall, expounding on the virtues and great breakthroughs of their technology and vision for the future.

Just after the presentation, Will is shot. We find out that other groups and top AI researchers are simultaneously targeted in a series of murders and attacks across the country. This is carried out by infiltrators from an anti-tech group called the RIFT.

Will survives the shot, but the bullet had been irradiated and this is poisoning his blood. He doesn't have much time to live. Evelyn and Max decide to save what's left

of his mind (and spiritual essence) and upload his thoughts into an advanced AI machine they were working on, called PINN (Physically Independent Neuro Network)…

When the computer loads up, it takes a while for it to sort through its 'thoughts' and upgrade itself, but eventually does – however, it needs more power and Evelyn hooks him up. Max has second thoughts and wants to unhook the system – Evelyn kicks him out.

Max gets kidnapped by RIFT who tries to sabotage Evelyn's 'experiment'. She manages to upload Will to the World Wide Web before they can turn him off.

Meanwhile Dr. Tagget (Morgan Freeman) who we saw briefly at the beginning of the movie – a former AI colleague of Will's is working with the FBI's Agent Buchanan (Cillian Murphy). Will hacks into the FBI network and downloads information from across the country on RIFT activists, as well as fills Evelyn's back account with an impressive amount of money…

Will and Evelyn invest a tremendous amount of money in rebuilding a small virtual ghost town called Brightwood. She

sets up an enormous grid of solar panels to power the new super-sophisticated facility that Will's digitalized mind is running.

RIFT has Max and the key RIFT woman BREE (Kate Mara) interrogates him about Will's potential plans and how to stop him. Max says it's too early to do anything, and they won't be able to do it alone either.

Soon after, the movie jumps ahead a few years. Will begins upgrading people with physical disabilities. He enhances them with Nano-bots to the point where they are physically superior to normal humans – but he is also networked into their brains. He needs to do this to run the Nano-bots. But does he control the people or just communicate with them?

Dr. Tagget (Morgan Freeman) and Max and the FBI agent come to the facility to visit Will. Now, when Morgan Freeman shows up in a movie – you figure all is going to turn out right. He has a very positive, stable, and calming effect. A unique charisma. – I

guess that's what makes him such a great attraction in movies. He asks Will: "Can you prove you are self-aware?" Will's image answers: "Can you?"

Will shows them the new tech he is promoting: "Enhanced, modified and networked people in a collective mind…" [LB: Remember this for the exam later …]

The FBI, in the background, works with RIFT to destroy Will and his facility. They capture one of Will's enhanced people so Max can 'hack' the Nano-bots and figure out a virus to shut Will down. They plan to also coordinate worldwide to shut down the Internet and the US's electric grid (possibly in other countries too).

There is a fight brought on by the RIFT terrorists joined by government agents and Will's entire grid and facility dissolves into billions of Nano-bots that fly up and enter the atmosphere, and eventually the entire eco-system. … Of course, there's more, but why spoil a good plot?

[LB: END OF SUMMARY]

One of the key questions that remains at the end of the film is: Was the **digital** Will Caster really the mind and soul of Dr. Caster or just a highly evolved AI with an agenda of its own? A more pertinent question, however, is: At what point do we let 'machines' control our lives? For that matter – does it matter if it's a machine (human built) or a real person running our lives (e.g. the government, big business, your work, your spouse, your kids…)? There are many philosophical questions brought out in the movie, when one thinks about the events and repercussions.

For example: The "government" runs the country, makes the laws, etc. Is that so much different than Will Caster running the people? Another issue: how far can anti-tech people take a crusade before being judged dangerous and terrorists? Is it ethical for the government's homeland security to work with the RIFT terrorists to counter Will's plans for humanity?

[LB: Remember the line I told you to remember in the **SUMMARY** section? Now's the time, and in case you didn't read the summary, let me repeat it here: Will shows them the new tech he is promoting: "Enhanced, modified and networked people in a collective mind…"]

If we were to assume that the digitalized Will Caster – whether "human" or not – had in fact created the possibility of linking all of Mankind's minds so that people could work together for a common cause (with a side benefit of enhancing them physically and mentally) – would that be so bad?

NOTE: BOOK SPOILER AHEAD => The thought reminded me of a book I read many years ago "*The Cosmic Rape*" by Theodore Sturgeon. Although, not his greatest work ("*More than Human*" is much more powerful), there is a lot worth reading [see more here: https://sciencefictionruminations.wordpress.com/2011/05/27/book-review-the-cosmic-rape-theodore-sturgeon-1958/]. AKA "*To Marry Medusa*" – the same story, shortened and published in *Galaxy* magazine (see here: http://www.goodreads.com/book/show/872293.To_Marry_Medusa).

The main connection that we have with *Transcendence*, is that in response to a mind-virus that an Alien hive-structured society ("Medusa") from some far-away galaxy uses to try to forcibly usurp and integrate humanity – Mankind instead rejects the invasion, and we join all our minds into one cohesive network of intellects. The combined power of mankind – The so called "Singularity" – then revolts against the assault and we throw off the incursion.

… and this Alien invasion angle also ties in well with…
NEXT MONTH: Aliens – The good, the bad and the ugly.
==

Sheer Science: Want-em Quantum ?*

(* In memory of Aharon Sheer (ז״ל) – Founding Editor)
Entanglement – A Quantum Leap towards a "Quantum Computer"
- Prepared by: Doron Calo*, PhD   **(*our CC Sheer Science editor ☺)**

It turns out that quantum physics isn't just about long equations full of "Psi"s and "Delta"s. Yes, you'll say, it also gives us weird, unsettling phenomena like that Schrodinger's cat in a box, both dead and alive until you actually open the box and look. But it can also be understood in terms of the gaps it fills in classical physics. The latter (also known as Newtonian physics) is pretty good at explaining most observations in the "macro" world of actual things we can feel with our senses.

However, when we come down to the "micro" level of the elementary building blocks of the universe, Newton's physics suddenly doesn't make sense. The best example is LIGHT, which behaves like a wave on the "macro" level (with different wavelengths creating the visible spectrum)... but is also affected by gravity. Quantum physics offers to solve this by looking at the world as divided into discrete particles (quanta). In addition, it looks like this isn't just a nice theory to put the minds of physicists at ease – it also has practical uses.

Quantum physics offers many bizarre phenomenon. For example, SUPERPOSITION, where two elements exist in two separate states at the same time. Another more interesting one is ENTANGLEMENT – which means that two seemingly unrelated elements share the same state, and are effectively dependent upon one another. This is true even if the two objects are very far away, for example on different sides of the planet. At first, this sounds, pretty unnatural and counterintuitive.

Even Einstein, once he figured out these odd quantum consequences, declared that experiments of this kind will forever be nothing more than "thought experiments". It appears, however, that this phenomenon can be realized in the lab. Two research groups demonstrated that pairs of non-identical ions can become entangled. When microwave or laser is directed at one atomic species, it was shown to instantaneously affect the state of its entangled "buddy".

This was performed with unprecedented accuracy, which is a prerequisite when considering possible future applications of this technique, such as in a universal Quantum Computer. Here, each atomic species would represent one quantum bit (qubit) of information. Thus, a single trapped ion would serve as a "memory qubit", the other as an "interface qubit", and they would be connected via entanglement to create a quantum logic gate.

While all this sounds highly technical and complex, the final result would be a Quantum Computer that will be able to perform calculations on a quantum scale, that is, performance on a gigantic scale and at a fantastic speed – much greater than anything we have today.

Such computing power is essential to solving outstanding problems in diverse fields, from the chemistry of complex molecules to simulation of quantum systems. Superposition and Entanglement could have other uses as well: Super-accurate spectroscopy devices, or atomic clocks, for example.

The freakishly instantaneous, spatially unbounded effect of Entanglement could connect remote devices – how about building a working ansible? or a teleporter?

Maybe it's just daydreaming. But it keeps me convinced that the ultimate revolution, the so-called "Singularity"*, will someday originate from exactly this kind of technological advancement, and will proceed with such speed that it will leave almost everyone behind…

Links:
'Hybrid' logic gate for quantum computers demonstrated
http://www.dispatchtribunal.com/hybrid-logic-gate-for-quantum-computers-demonstrated/8384/

Abstracts from the journal Nature
http://www.nature.com/nature/journal/v528/n7582/full/nature16186.html
http://www.nature.com/nature/journal/v528/n7582/full/nature16184.html

*Singularity – Google it:
"The Singularity is an era in which our intelligence will become increasingly non-biological and trillions of times more powerful than it is today—the dawning of a new civilization that will enable us to transcend our biological limitations and amplify our creativity."

We'd love to hear your thoughts on any of the above subjects and we may publish some of them!