THE HARD TECHNOLOGICAL BODIES OF *ELYSIUM* AND *EDGE OF TOMORROW*

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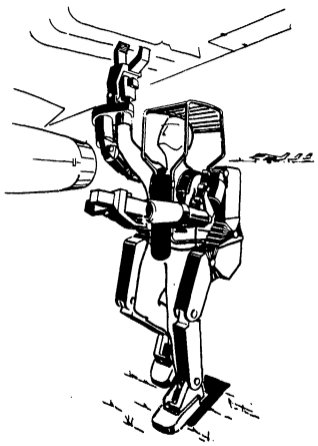
INTRODUCTION - WHAT MAKES THE HARD TECHNOLOGICAL BODY?

The recent films *Elysium* and *Edge of Tomorrow*[1] present an evolved yet equally problematic version of the hard body that Susan Jeffords proposed in *Hard Bodies: Hollywood Masculinity in the Reagan Era*[2] For Jeffords, the quintessential 80s action star, exemplified by the character of Rambo, represents a hero that combines distinctly "American values" of individualism and free will with the brute force of an overpowered and super-muscular physical body. This hero-as-biological-spectacle also came with an inherent mistrust of technology that, as the Internet and home computers became everyday devices in the 1990s, pushed the original iteration of the hard body into obsolescence. Twenty years past a Popular Internet, *Elysium* and *Edge of Tomorrow*, using visuals and rhetoric that can be traced back to *Aliens, The Matrix Revolutions,* and *Avatar,*[3] augment the biological body with exoskeletons and, by doing so, present an updated version of the hard body that superficially reflects a 2015 movie-watching audience's extremely symbiotic relationships with their digital hardware and software. This new hard technological body reaffirms and modernizes many of the 80s hard body's troublesome values and, in doing so, heroically presents the exoskeleton-human assemblage as an unhealthy militarized version of the posthuman.



THE POWERED EXOSKELETON PROJECT

Exiting the Second World War, while in the beginnings of the Korean War and the Cold War, a large amount of the early American applications of cybernetics revolved around building "more effective killing machines," such as Norbert Wiener's work in "self-correcting radar tuning, automated antiaircraft fire, torpedoes and guided missiles."[4] Wiener's attempted to dismiss such weaponization by

emphasizing the need for a humanistic approach that firmly planted a "liberal humanist subject" in the middle of any cybernetic apparatus.[5] This raised the question of how much (and how literally) should "the man-in-the-middle…splicing humans into feedback loops with machines" be involved in the systems of military technology and warfare.[6] One of the first illustrative (public) attempts was General Electric's "Prototype for Augmentation of Human Strength and Endurance."[7] As proposed, the G.E. Hardiman (see image) would have been:

> worn as an outer mechanical garment. The exoskeletal structure will be powered to dramatically amplify the wearer's strength and endurance by a factor of approximately 25 to one…The device will provide him with a set of 'mechanical muscles' that enables him to lift and handle loads in excess of 1000 pounds….[it] mimics the movements of its wearer, presenting a literal union (man and machine). Thus the human's flexibility, intellect, and versatility are combined with the machine's strength and endurance.[8]

The "master-slave" device, funded as a "joint Army-Navy program in November 1965,"[9] would be used to load bombs into aircrafts and, more generally, to move cargo. While a full exosuit was never constructed, the illustrations included in the reports are very useful in creating the cinematic iconography of the powered exoskeletons that appear later in *Aliens*, *The Matrix Revolutions*, as well as *Avatar*. These initial filmic representations of exoskeletons are especially interesting as they allow the biological body (most importantly the face) to be viewed simultaneously alongside the technological body in a more overt version of the man-in-the-middle than the sealed *Iron Man* and *Pacific Rim* suits, while also remaining more "human" than the completely mechanical titular figure of *Terminator 2: Judgment Day*.[10] Yet, these early cinematic exoskeletons do not play nearly the central role that they do in *Elysium* and *Edge of Tomorrow*; the exoskeletons inhabited by Max (Matt Damon), Kruger (Sharlto Copley), Cage (Tom Cruise) and Rita (Emily Blunt) are deliberately predominant, a spectacular and heroic blend of the visible human with augmenting technology. Looking remarkably like Warrior Web, a contemporary DARPA prototype,[11] these film portrayals are a nostalgic harkening back to the "hard bodies" of 1980s. According to Jeffords, the markedly white, masculine and American body exemplified by the *Rambo* films was a distinctly militarized projection of a unified national identity; the

hard body, despite the cartoonish "muscular physiques, violent actions, and individual determination," were representative of the "average citizens'" who was "thrust forward into heroism…in defiance of their governments and institutional bureaucracies" who then wished to re-center power back to the "heroic, aggressive and determined" citizens who populated the country.[12] Such a body was "a strong one, capable of confronting enemies rather than submitting to them, of battling evil empires rather than allowing them to flourish, of using its hardened body – its renewed techo-military network – to impose its will on others."[13]

Yet, writing in 1994, Jeffords flagged the shifts away from these hard body into a "more internalized and emotional kind of heroic icon."[14] As explained in more depth later, the explosion of Internet usage and infrastructure from the mid-1990s onward parallels this internalization, turning Americans from the unified group constructed under Regan into a more virtual and globalized populace in the 2000s. Further discussion of how or why the heroic bodies post-Regan film got "softer" is beyond the scope of this paper,[15] but it is clear that the technologically-augmented hard bodies resurfacing in 2015 cinema combine the 80s spectacular and fetishistic physical bodies with the new "mechanical muscles," equally spectacular, of flexibly wearable and networked technology. In echo then of the problematic soldier-bodies created by the "hardness" of characters like Rambo, the hard technological bodies of *Elysium* and *Edge of Tomorrow*, while adjusting slightly to include the female Rita (the "Full Metal Bitch"), similarly give the machinic audience a glorified and spectacular militarized version of the posthuman that is fascinated with the combination of physical muscles and technological weaponry.[16] Specifically, it is the augmentation of the exoskeleton, exalting and paralleling the 2015 militarization and weaponization of the Internet and wearable technology, which gives the same hard-body fantasy of beyond-human capabilities, operating as a steroid-esque enhancement granting exaggerated speed and strength.

These hard technological bodies do very little to reflect the cooperative modes in which the machinic audience engages with their hardware and software and do little to represent the complex and messily internalized ways a 2015 user of the Internet and computerized hardware actually interacts with his/her technology. This encourages the contemporary machinic movie audience to view themselves not as the healthy symbiotic posthuman N. Katherine Hayles promotes, but to instead treat their computerized

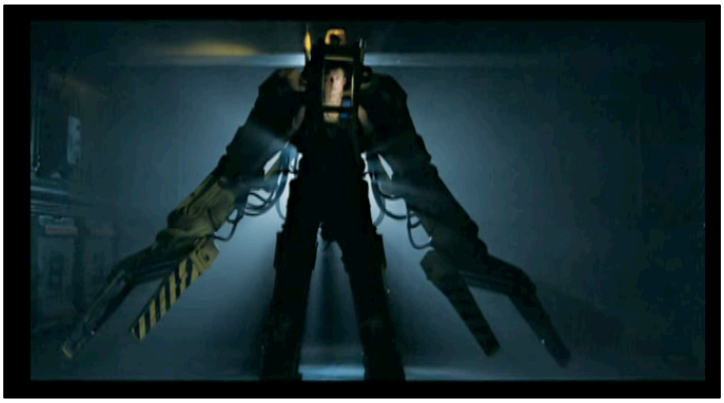
technology (both networked and non-networked) as a weapon to heroically go to combat with.

PART II – JEFFORD'S HARD BODY IN DEPTH AND INITIAL CINEMATIC EXOSKELETONS

The key to understanding the hard body is to recognize that it encourages the movie-watcher to co-identify his/herself as "masterful, as in control of [her/his] environments (immediate or geopolitical), as dominating those around [her/him]."[17] For Jeffords, this manifested in the over-muscled bodies that had "mastered" their own biology and showed themselves in "control" (a term echoing early cybernetics) of the various weapons they wielded, technological (guns, vehicles) and biological (fists) alike. However, the relationship between the hard body and technology, Jeffords points out, is fraught by the tensions between being an "individual" and a (literal and figurative) "fighting machine." She typifies the relationship between the hard body and technology as falling into two categories: in the first, technology is "a military resource"; in the second, technology is meant to "circumvent human 'freedoms'."[18] Therefore, users/soldiers should not over-rely on "technological innovation" to establish mastery of his/her environments, but rather "rely on individuality…as the true basis for American superiority."[19] Jefford's theorizing echoes Wiener's sentiment (as summarized by Hayles) that "the ultimate horror is for the rigid machine to absorb the human being, co-opting the flexibility that is the human birthright."[20] Behind the hard body must be a "free" and (biological) "human" mind: being the "man-in-the-middle" of a radar display or antiaircraft guy is not the "best" use of military technology; the "best weapon" is "not then a tank or nuclear bomb but the 'free' American mind inside a hard body";[21] it is only "'free-thinking' human individualism [that] can put technology to good uses."[22] Extending then to the hard technological body, the exoskeleton potentially takes the best of both machine and human biology and combines them, while still granting the human element control of the whole assemblage.

Importantly, "domestic hard-body films display sophisticated military hardware only in the hands of enemies…and [are] used only to deny human 'freedoms.'"[23] This makes

more sense knowing the relatively small population of "average" movie audiences who had access to "sophisticated" home technology, like personal computers; for the 80s movie-going audience, those technologies would be foreign and especially unnatural next to biologically-based hard bodies. However, home computers became cheaper in early 1990s and the Internet moved from private institutes (military, government, university) into public realms; aided by the 1993 release of the first user-friendly Graphical User Interface (GUI) for the Internet, Mosaic, computerized technologies came into the private home and became normalized components of an average citizen's life.[24] Too, as texts like Manuel De Landa's 1991 text *War in the Age of Intelligent Machines* make clear, artificial intelligence and networked computing had already migrated to national war machines, symbiotically melding with, and restructuring, individual soldiers, larger strategic planning, weaponry, communication systems etc.[25] Though this prism, the hard technological body begins to take shape, with "mastery" shifting from "immediate or geopolitical" concerns to the more globalized and virtual ones surrounding users' incorporation of an exploding machine population into the everyday human body and its actions.



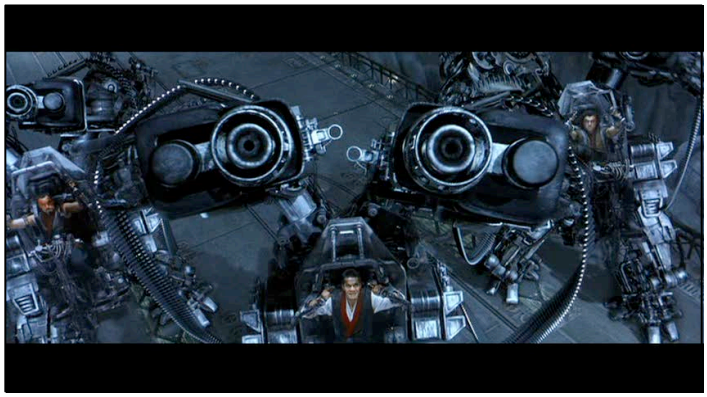
The notion of "borders," both national and corporeal, becomes vital during this transition. Decades earlier, Wiener stressed that borders must not be "inflexible walls": "when the boundaries turn rigid or engulf human so that they lose their agency, the machine ceases to be cybernetic and becomes simple and oppressively mechanical."[26] For the increasingly normalized posthuman of the 1990s, formerly submerged in the values of the 80s hard body, there would have been a need to keep the boundaries between the technological and biological clear; as Jeffords argues, the hard body resists being "messy" or "confusing" and instead responds by "having hard edges, determinate lines of action, and clear boundaries for their own decision-making."[27] The initial film representations of the exoskeleton showcase very distinct and clean boundaries between the technological and biological elements: in Ripley's (Sigourney Weaver) use of

an exoskeleton in her fight against the alien in *Aliens*, the film goes to great lengths to make sure her biological body, though united with the machine, is clearly separated (see image); in particular, the repeated shots of her expressive face, while the machine whirl of the exoskeleton grinds in the background, clearly delineates her machine parts from her human parts and makes apparent her mastery. Likewise, the exoskeletons used by the last human inhabitants of Zion in *The Matrix Revolutions*, as a military-based example, give a similarly clear division between biological-technological as each soldier-assemblage visibly centralizes the human within the exoskeleton. For users in the 1990s and early 2000s still coming to grips with the interpenetration of visible and invisible/virtual technologies into their everyday actions, this reassuringly-present human body, clearly separated, would be necessary; the imagined cybernetic systems/circuits remain under human control and demonstrate that the augmented human has mastered the machine as a tool.

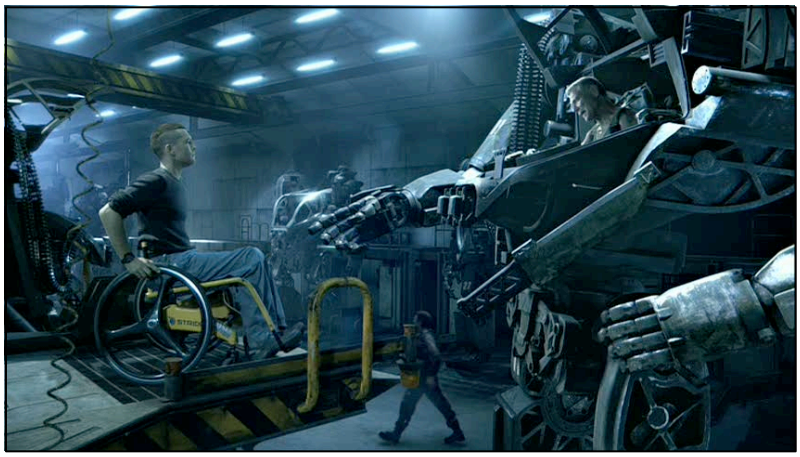
We can also see the beginning small steps towards the hard technological body in *Aliens* and *The Matrix Revolutions* in how spectacular and heroic the exoskeleton/augmented-human is portrayed. When Ripley is chased by the alien queen and forced, in desperation, to don the exoskeleton, she is revealed slowly, dramatically back-lit. The machine itself is imposing: the claws, though obviously artificial and slow, are menacing. While the Frankstein-esque walk forward is awkward and overtly mechanical, far from the "feeling" and mobility of the G.E. Hardiman, Ripley's first blow is powerful, striking the seemingly indestructible queen to the ground. The speed and agility of the queen is offset by the lumbering force of the exoskeleton's amplified muscles, expertly wielded by Ripley, and the repeated shots that exchange between Ripley's concentrating face and the movements of the machine give the audience a sense of their combined power. Less spectacular than later portrayals, Ripley's exoskeleton, repurposed as weapon, is still the heroic assemblage that defeats the queen and saves herself and Newt (Carrie Henn).

Fifteen years later, the military exoskeletons of *The Matrix Revolutions* are amplified and weaponized versions of Ripley's (see image). As the soldiers prepare for the climactic combat scene in Zion, the music swells heroically and the camera stares down the barrels in anticipation of the oncoming enemies. Captain Mifune's (Nathaniel Lees) cry of "For Zion" just as the machines enter recalls the same clichéd patriot-shouts of "traditional" war films. Yet, while Ripley acts alone, the *Matrix* establishes an army of exoskeletons,

showing dozens of them shooting up, together, as a unit. Again, the score underlines the battle and the camera swoops overtop to show three of the assemblages fighting together, guns never pausing; the camera alternates between shots of the mens' faces and the gun barrels firing. As the battle continues and more and more human causalities fall to the machine army, Captain Mifune becomes the film's focal point: his contorted face and primal yelling are underlined by the constant gunfire from his exoskeleton and his heroic fatal sacrifice takes place amidst a literal swarm of enemies. More so than Ripley, the *Matrix*'s exoskeletons are spectacular combat weapons and, even though they are ultimately defeated, their portrayal is closer to Jefford's heroic hard body. With the liberal human at its center, the exoskeleton becomes weaponized, and its hardened "muscles," its added strength and constantly-present guns, give an initial template that is expanded upon later in *Elysium* and *Edge of Tomorrow*.



It is intriguing then that the hard technological body in *Avatar*, in particular Colonel Miles Quaritch (Stephen Lang), bears the same filmic markers of spectacle in the film's focus on guns and super-human strength, but is instead vilified (see image). This runs parallel to *Avatar*'s release year of 2009, a period where the American movie audience had been engaged in a protracted war in Afghanistan and Iraq that their newly-elected president had promised to extradite them from; the negative portrayal of a corporate military aligns itself with that audience's pessimism and fatigue with warfare. Too, the difference can be further parsed by examining the crisis that each hard technological body is responding to. Returning to Jeffords, she states that the hard body is "justified" only when there is "a 'hard' external opponent" and that the hard body then needs to be called upon in order to "meet that threat."[28] In *Aliens* and *The Matrix Revolutions*, the external threat of an invincible alien and a seemingly inexhaustible machine army more than validates the use of the hard technological body; the justifying crises of *Aliens* and *Matrix Revolutions* go beyond the hard body's concern for a national unison, and instead unify the whole human species. However, in *Avatar*, Quaritch's corporate and military is purely



capitalistic and provides none of the unifying that the hard body requires in order to be rhetorically effective. Further, the "threat" of the "soft" Na'vi, a species armed with bows and arrows, is not one that "justifies" the use of the technology, aligning the film's version of the hard technological body with the overpowering alien or machine forces of *Aliens* or *The Matrix Revolutions* and making them, instead, a hard external threat to the protagonist Jake Sully and his adopted Na'vi.

Along these lines, the heroes of the more recent *Avatar* and *Matrix* trilogy are rooted in an internalization of networked technology that parallels the machinic audience's expectations that a relatable hero embodies the same symbiotic relationship they have with their own various networked devices and software. The immense popularity demonstrated by the financial success of the *Matrix* films and *Avatar* should not be ignored. Both movies marginalize early versions of the hard technological body because they are too-simple representations, too "literal," in their union of technology and biology; too, the pure weaponization of these assemblages simplifies the relationships between technology and biology and ignores the myriad interactions that the machinic audience undertakes when interfacing with their surrounding hardware and software. Though "softer," Neo and Jake Sully, the saviors of their films, parallel the machinic audience's complex and internal/mental relationship with their own virtual selves and give positive models for their posthuman audience that is outside the simplistic physical-only blending of the exoskeleton.

Yet, less than 5 years later, there is a pivot away from these virtual ("soft") heroes back to a more visibly blended "hard" human-technology soldier-assemblage.[29] The curious reversion back to a harder body, augmented by an exoskeleton, in *Elysium* and *Edge of Tomorrow* is a reaction to the changing shape of warfare and the general public's awakening to progressively "virtualized" combat; the exoskeleton makes the human visible and in control amongst the increased usage of unmanned drone attacks and

nationalistic cyber-warfare. The old hard body, biologically-based, is a relic, futile and rhetorically ineffective unless it can harness and master the technology (or projected technology) a 2015 machinic audience engages with; the hard technological body is an updated and awesome balance between machine and human. However, this figure's growing cinematic representations echo the same unhealthy spectacle that the hard body provided: instead of co-operating with their technologies, like Neo and Sully, the heroes of *Elysium* and *Edge of Tomorrow* clearly separate their machine bodies from their biological ones and, like the hard body, simply wield the technology as a weapon, using it as a prosthetic, externalized tool rather than as an intimate partner for further posthuman evolution.

THE HARD TECHNOLOGICAL BODIES OF *ELYSIUM* AND *EDGE OF TOMORROW*

We can begin to next unpack the evolutionary step of the hard body in *Elysium* and *Edge of Tomorrow* by returning to the notion that the hard body represents "average citizens …in defiance of their governments and institutional bureaucracies."[30] The "average" member of the 2015 machinic audience has many reasons to be suspicious of the use of technology surrounding their "governments and institutional bureaucracies," including the National Security Agency's tracking of global citizen's Internet usage, as well as the proposed SOPA and PIPA laws surrounding net neutrality. The conflicts within the two films give heroes that are fighting against many of the institutional frustrations that faced Jefford's hard bodies, in turn similarly celebrating the individual's will in the face of a corrupt and ineffective set of infrastructures: in *Elysium*, Max's triumph is over, first, the corporate makers of the robot police force that oppresses the Earth's population and then, second, the ultra-rich citizens of Elysium that are hoarding the wealth and resources; his freeing of Earth's population by his individual sacrifice/death is exactly the returning of power to the citizens that Jeffords argues the 80s hard body represents. Similarly, in *Edge of Tomorrow*, Cage must resist the unwilling and slow moving military infrastructure, headed by a defiant General Brigham (Brendan Gleeson); his breaking away from that infrastructure, as a rogue soldier, and his individual sacrifice/death in defeating the

Mimics at the end of the film demonstrates the same valuing of individuality and trust in the "free" human mind as the hard body.

While the independence of the hard technological body harkens back to Jefford's theorizing, the move to a recognition of a machinic audience's communal (global) identity, beyond strict national identity, marks a change from the 80s counterpart. *Elysium*, not so subtly, is a movie about class relations that sets clear divisions between the quarantined ultra-rich inhabitants of the space station/fortress Elysium and the overcrowded and extremely poor inhabitants of Earth who are further menaced by an army of pre-programmed robots. The film's clear enemies are embodied by the over-zealous figure of Delacourt (Jodie Foster), who is a combination of corporate interests and over-reaching national defense. *Edge of Tomorrow* has a similarly clear enemy in the alien race, the Mimics. As the Mimics run over Earth in conquest, the United Defense Force (UDF) of remaining humans rallies the global population together and begins to fight back, headed by a ground force of soldiers equipped with battle combat "jackets" (or ExoSuits). Yet, these exoskeletons are made and applied with the same desperation against an impossibly superior enemy as Max's donning of a similar device in *Elysium* does; like the 80s hard body, both films treat the exoskeletons as a justified weapon in the face of a dominant enemy. This creates a similar unity to the use of the hard technological body in *The Matrix Revolutions*: instead of uniting around a nation as the hard body did, the hard technological body reflects the increasing recognition of/exposure to other cultures brought on by the lessening of nationalistic borders that comes with an expanded use of the globalized Internet.

This reflection of increased globalization found in the hard technological body of the two films, however, overcompensates by undermining the value of the corporeal body. While the hard body worshipped the physical temples of its warriors, the worlds of *Elysium* and *Edge of Tomorrow* marginalize the biological body and create a bedrock of unhealthy and unbalanced relationships between the technological and biological entities of the film. The human bodies of *Elysium* are potentially immortal: there are "Lazarus beds" on the space station that can cure any illness and mend any physical wound near instantaneously; the villain Kruger is brought back to full health after having his face blown off by using one of the beds. The climax of the film actually celebrates the eradication of death and illness in which the human body becomes disposable and

without stakes, rendered as machine-like and replaceable as the robot army tasked with patrolling Earth. This postbiological future, initially explored by Hans Moravec and Ray Kurzweil and denounced by N. Katherine Hayles,[31] is also generated in *Edge of Tomorrow:* as Cage and Rita are able to manipulate the Mimics' abilities, effectively resetting their bodies and going back in time with each death, their bodies too become disposable. While the film eventually does away with this conceit for the culmination of the film, the first hour upholds this ability to die without penalty, to shed the biological body, as Cage uses each non-death as a means to becoming a better fighting machine. This virtualizing of the body is the unhealthy avatar-only of the overcompensating postbiological, establishing the films too far within a machinic audience's online existence without reflecting the healthy symbiotic blend between avatar-body that a 2015 posthuman experiences.

If the old biological-only hard body, un-augmented, is now too weak, and the postbiological body is too unbalanced, then the exoskeleton-warriors in both films are efforts to situate their heroes between those two poles and, by doing so, retain the troublesome values of the 80s hard body. Interestingly, both films chose to shrink the exoskeletons considerably from previous depictions: unlike Ripley's giant Hardiman-style prosthesis or the bulky, oversized extensions of *The Matrix Revolutions* and *Avatar*, the exoskeletons of the *Elysium* and *Edge of Tomorrow* shape themselves closely to the contours of the human body inside. Far more of the human operator can be seen inside them: not only are the faces of the operators more visible but so too are the muscular arms and legs, especially within Max's and Kruger's. This increased human presence offers counter-figures to the "inhuman" enemies of *Elysium*'s robot police force and *Edge of Tomorrow*'s Mimics. Too, it better reflects a machinic audience's understanding of their hardware and software as less overly mechanical and more flexible (contouring) to their own physical bodies. Most importantly, in contrast to an assemblage like Iron Man's enclosed suits, it establishes itself as compatriot of Jefford's hard body by showcasing the "liberal" human at its center, though augmented by technological muscles, firmly in control of his/her technologies.

Elysium gives two divergent hard technological bodies in the hero Max, a citizen of Earth desperately flying to Elysium to cure his radiation poisoning, and his antagonist Kruger, a secret agent working for Delacourt. On the surface, the "human" messiness of Max aligns him more with Jake Sully and makes him "softer"; yet, it is the clear and

superior enemy of Kruger and Delacourt that, like the 80s hard body, justifies his use of the exoskeleton and "hardens" him. When the audience first sees Kruger, an "asset" mechanically "activated" by Delacourt's earlier orders, he calmly pulls off his ratty overcoat to reveal the pristine and up-to-date exoskeleton underneath. Later, in his first battle with Max and the other "people smugglers" (lead by Spider (Wagner Moura)), when he does engage, he moves quickly and masterfully, walking into bullets and relishing the killing he does in close combat; he is a killing machine much like the military droids the smugglers fight mere minutes prior. The ease with which he uses the technology and his comfort is unsettling and, like Quaritch in *Avatar*, he lacks enough of the individualistic "human" to be considered heroic; he is, instead, an overpowered military machine, or rather one part of a much larger military machinic phylum that echoes the 80s hard body's Communist villains.

While Kruger is one of a unit of exoskeleton-powered soldiers (within a larger military machine), Matt Damon is the only resident of Earth that is shown wearing an exoskeleton. He begins within the corporate-military system, ironically making the very robot soldiers that police the planet; it is at this factory where he is callously exposed to a lethal dose of radiation. This lethal dose serves to remind the audience of his mortality: even in the final battles on Elysium, he has to pause in order to swallow the anti-radiation pills he's been given. While Kruger is able to step in and out of the Lazarus beds, distancing him from his biological body, Max is stabbed in the stomach in an early combat scene and must walk hunched and wounded for the rest of the film, underlined by repeated shots of the blood on his hands and the injury itself. More, Max takes no pleasure in combat: in the first battle, after he has knocked Kruger down with gunfire, he does not finish him, but rather rushes over to his wounded friend Julio (Diego Luna); this is a sympathetic action that is outside Kruger's murderous, asset/soldier instincts. The sick and compassionate human body that Max demonstrates is necessarily "softer" in order to move the character away from the singularly-focused, corporate-militarization of Kruger and to allow Max to enact his own (civilian) will, a key component of the hard body.

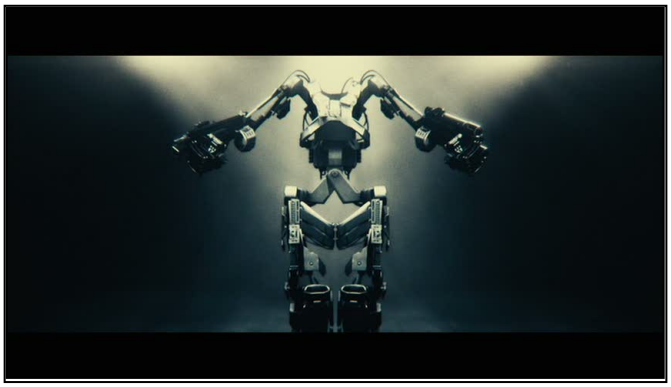
This vulnerable humanity is then amplified by Max's literal and figurative connections to his exoskeleton. When the audience sees Kruger stepping into his exoskeleton, they see his muscular body implanted with sensory inputs/hooks for the machine; he is gleeful as he is welded in and there is no bleeding or irritation around his implants as the machine

slides cleanly onto him. In contrast, the surgery scene that attaches the skeleton to Max is grotesque. His exoskeleton, a stolen "third generation exosuit" that is in opposition to Kruger's up-to-date hardware, is attached to him using butcher's tools in a slapdash and dirty surgery room. When the surgery begins, the first shot is of a bloody hole in the back of Max's skull; from there, bolts are drilled into him before the bonesaw cuts into the body. When he is "brought online" at the end of the surgery, there is blood around each puncture into the body; that blood seeps through Max's shirt throughout the movie, reminding the audience of the exosuit's biological body at its core. The lack of a "clean" connection to the technology makes clear that the two entities, his biological body and his technological exoskeleton, are very much separate, unlike Kruger who is so completely bonded to his exoskeleton that the borders between his body and that technology become negligible. Max then demonstrates the clear borders between biological and technological that the 80s hard body relished in; the movement towards a superficially "softer" body distances the hard technological body from the clean corporatized military force in its opposition, aligning it alongside the non-expert citizen that Jefford's says is the hard body's rhetorical target. Too, the "bloody" human within reaffirms that there is a human element (a "free" mind) inside the hard technological body, a body not transformed into a machine, but, rather, one that can then be trusted with mastery and control.

Yet, for all the "softness" Max displays, it's important to note that the hard technological body, in both films, begins with an over-strong physical body which it then straps an exoskeleton onto, making it the same unreal spectacle as the 80s hard body; while the biological body is vulnerable and messy, the exoskeleton hardens it, allowing its wearers the necessary strength to survive in combat. These technological muscles are given the same fetishistic gaze as the previous hard body films, often with the similar tropes of slow motion, close-ups on guns, and dramatic and violent enemy deaths. For

example, when Max transitions into combat, he is given the same admiration typical of soldiers within the hard body genre. In the first combat scene, after clearing his jammed gun, Max rises up and, in profile, fires his gun at the police robot in extreme slow motion (see image); the audience can clearly see the exoskeleton wrapped around his flexing arms, extended by the firing gun, before the enemy explodes. The camera switches to another angle so that the audience gets its destruction from every perspective, allowing them to relish in the spectacular power of Max's new body. A very similar sequence is given later in the film, the bullets flying and dismembering in slow motion, when Max destroys one of Kruger's fellow soldiers. Even when not extended by a gun, Max's hand-to-hand fight against another police robot ends in a slow motion show of extreme strength when Max tears off the robot's head. As the audience is consistently reminded, Max's biological body is disintegrating, so it is the hardened muscles of the exoskeleton that is allowing him to carry out these spectacular feats.

Problematically, the heroic figures of Rita and Cage in *Edge of Tomorrow* are much closer to Kruger's militarized version of the hard technological body and, more clearly than *Elysium*, the film then represents the next evolutionary step of the hard body of the 1980s into the technologically augmented, but distinctly militarized, 2015 posthuman. To begin the film, Cage is a lot like Max in that he is a civilian user of the battle jackets. As a former public relations representative, his incompetence and inexperience gives his fellow soldiers much to ridicule; he cannot even figure out how to turn his suit and gun on for many of the first combat scenes. However, Cage's transformation into a brutally effective soldier, via the Exosuit, is what makes *Edge of Tomorrow*'s version of the hard technological body such a problematic representation. In the film's opening montage, the Exosuits are explained as one of the key turning points in the battle, leading to the first victory against the aliens in five years: as Cage explains "with the new jacket technology and limited training, we've been able to create super soldiers"; the phrase "limited training" is repeated again, underlining how easy the jackets are to master and wield. Rita is held up as the paragon of the technology, said to have "[killed] hundreds of Mimics on only her first day of combat." The "revolutionary technology" is worshipped (see image): following Cage's words there is a shot of the suit by itself, lit from above in reverence; the words "Power" and "Speed" appear slowly overtop the image followed by, in quick succession, "Domination," "Fame," "Dynamic," "Fearless," "Invincible," "Precise,"



"Unstoppable," and "Superiority." These words signal the glamour attached to the Exosuits and make them a weapon to fear, covet and admire. From the beginning, the technology is presented as an unreal "military weapon," part of the oncoming "mechanized invasion" of the Mimics that is used purely for combat and conquering. While *Elysium* provides a minimal counterbalance by giving external technology the positivity attached to the Lazarus beds and the health care robots at the end of the film, *Edge of Tomorrow* immediately weaponizes its technologies and casts all of humanity in the role of soldier. To underline this, Cage confidently states "We fight. That's what we do." The collective "we" is the human race and the conflation of that "we" with the limited training required to master an Exosuit suggests to the audience that any average user can (must) transform into a fighter, a soldier.

As the film progresses, Cage exemplifies this, transforming from the "soft" non-expert into the best soldier in the whole army with the Exosuit as the primary hardening element. That new hard technological body is gazed upon with the same awe as Max's, beginning with Rita's exoskeletal assemblage. She is the super soldier from the opening montage of the film, whirling expertly through the battlefield, guns and oversized swords cutting through the enemy. The film shifts to Cage and as he "dies" and is reborn each time into the same battle, the treatment of the suit gets more spectacular. Yet, whereas *Elysium* slows down to show the hard technological body, *Edge of Tomorrow*'s over-fast treatment amplifies the exoskeletons' "speed" muscles rather than thier "power" components. The film rarely decelerates when in battle: the firing of the guns is more constant and raking, the enemies faster, more agile and far more plentiful. When Rita watches Cage in the training facility, he weaves between enemies, shoots and reloads seamlessly, demonstrating his combat expertise, all made possible by the augmenting exoskeleton. In combat, Rita and Cage don't walk so much as propel: in one sequence Rita jumps incredibly high, spins and slices a Mimic, which is then followed by Cage sliding along the ground and popping back up with his shoulder-mounted guns firing into the

oncoming enemies before literally circling his helpless squad mates to kill their attacking enemies. This all happens stunningly fast, and while the camera doesn't linger like it does in traditional hard body movies, the increased and incredible speed of the new technological body, its inhuman ability to hyperlink and dodge across the battlefield, grant it the same amazed gaze that the hard body garners.

This spectacle, however, undermines a machinic audience's posthuman understanding of potential machine-human cooperation. Both films encourage their audiences to fixate on the combat abilities and weaponization of the technology of their worlds, reducing it to the hard body's understanding of technology only as "military resource." More troubling, *Edge of Tomorrow*'s repetition that the Exosuit requires "limited training" (which Rita and Cage's citizen-to-expert soldier transformations prove) treats technology as a type of steroid, a fast (unnatural) shortcut to larger (faster/more powerful) "muscles." While the hard body of the 80s was an obvious fantasy, the hard technological body within *Elysium* and *Edge of Tomorrow* seems tantalizingly close to that average user/movie-goer. This steers the movie's audience away from considering symbiotic relationships with their machines, co-habitational relationships much closer to how an average user might interact with their daily technologies, and to instead revel in the awesome ability of technology to turn that average user into a killing machine.

In total, the movement from strictly individual into a balance between the "free" mind within a technological environment, in combination with the machinic audience's globalization, evolves the hard body. Yet, the "human" within the machine reigns supreme and the "free-thinking" mind can only be biological and aided subserviently by machines. The cinematic glamorization of the augmenting technology as militarized weapon treats the exoskeleton in the same way the hard body treats her/his gun (as extension, resource), while also encouraging the audience of such films to view their surrounding machine species as combat tools used to control and conquer with.

CONCLUSION: THE FUTURE OF THE HARD TECHNOLOGICAL BODY

Edge of Tomorrow's director Doug Liman's focus on "real" (physical) movie-making[32] makes apparent the last component of the hard technological body and a more positive

prospective path for representations of exoskeleton-human assemblages. At its roots, the hard body is biological and it is that biological body that is at the core of its spectacle and its value systems. While the filmmaking of *Elysium* and *Edge of Tomorrow* have digital effects, in contrast to a massively popular film like *Avatar*, neither provides groundbreaking, or even interesting, computer-generated filmmaking that might meet the machinic audience's experiences with a networked and non-networked technologies outside the theatre. More, the heroes of both films ultimately reaffirm the biological body as the most important and are lacking the virtual counterparts that a machinic audience might appreciate. Neither Max nor Cage's exoskeletons are networked beyond the simplest visual and audio components, resisting the dense networks that the machinic audience thrives in. This lack of networked virtual bodies reminds the audience that the human, a master in control, is the most valuable component of any biological-technological assemblage. Both film's heroic sacrifices of their protagonists' physical bodies reaffirm, like the preceding hard body, that the hard technological body is only heroic when the physical body is the most valuable and vulnerable; it's only after Cage loses the ability to be "reborn" and he is united into one physical body, does the film progress to its heroic climax. By continuing to maintain the clear divisions between machine and human, even when showing the machine-exoskeleton simultaneously with the physical body, the hard technological body is always grounded in "reality"; its physical (weaponized) presence in combat is not blurred with any virtual body and continues to resist the interpenetrated role that computer technology plays in a machinic audience's daily life.

We might then imagine the next iteration of the hard technological body that begins to acknowledge and incorporate a virtual body within a mode of filmmaking that also includes more digital attention. This is essentially the main difference between *Elysium*'s Max and *Avatar*'s Jake: while both are "messy" and "softer" than their enemies, Jake's relationship with the technology of that film acknowledges and celebrates the extension undertaken when enacting as a virtual self whereas Max is still firmly rooted in the physical; his "messiness" is the same human messiness of the hard body and serves to set him in contrast to the inhuman corporate-military enemies of the film that echo the 80s hard body's Communist enemies. A representation that moved beyond the physical-only body would need to balance delicately between an avatar's augmented global presence

and the sensory narrative that a physical body undergoes, an equilibrium very familiar to the machinic audience. Perhaps this is already being done most effectively in video games, wherein the player is able to interactively project into and control a body that oscillates between virtual networks and physical inputs; this type of body, while running the risk of also treating its technology as virtual steroids, is a similar but more complex version of the exoskeleton-human assemblage, the step in-between the G.E. Hardiman and the "tantalizingly close" versions put forth in *Elysium* and *Edge of Tomorrow*. Within film, however, such a figure might be able to acknowledge the continued and still pervasive use of "boots on the ground" physical soldiers in a contemporary warfare that also then blends that soldier with the virtual combat and cyberwarfare that hacking and drone strikes exemplify. That would be a more "real" (honest?) representation of how war is actually waged in 2015 and potentially provide valuable spaces to critique such combat.

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[1] Elysium, directed by Neill Blomkamp (2013. Burbank, CA: Sony Pictures Home Entertainment, 2013) DVD; *Edge of Tomorrow*, directed by Doug Liman (2014, Burbank, CA: Warner Bros. Home Video, 2014), DVD.

[2] Susan Jeffords. *Hard Bodies: Hollywood Masculinity in the Reagan Era.* New Brunswick, N.J. : Rutgers University Press, 1994.

[3] *Aliens,* directed by James Cameron (1986. Burbank CA: 20th Century Fox, 2014), DVD; *The Matrix Revolutions* directed by Lana and Andy Wachowski, (2003. Burbank, CA, Warner Bros. Home Video, 2004), DVD; *Avatar*, directed by James Cameron, (2009. Burbank, CA, 20th Century Fox Home Entertainment, 2010), DVD.

[4] Hayles, N. Katherine. *How We Become Posthuman* (Chicago: University of Chicago Press, 1999) 86.

[5] I thinking predominantly of Nobert Weiner's *The Human Use of Human Beings* (New York : Avon, 1967)

[6] The image of the "man-in-middle" arrives via John Stroud at the Macy Conference (Heims, *The Cybernetics Group*, 209); exact quote taken from Hayles, *How We*, 68. My understanding of Macy Conferences is taken from Steve Heims's text *The Cybernetic Group* (Cambridge: MIT Press, 1991) and N Katherine Hayles's account in *How We Become Posthuman*.

[7] General Electric Company "Final Report on Hardiman I For Machine Augmentation of Human Strength and Endurance" August 31st 1971. Accessed February 23 2015. www.dtic.mil/cgi-bin/GetTRDoc?AD=AD0739735

[8] Ibid, i.

[9] Ibid, 2

[10] My earlier and expanded thoughts on this can be found in my book Interfacing with the Internet in Popular Cinema (New York : Palgrave Macmillan, 2014); *Iron Man 3,* directed by Shane Black (2013. Burbank, CA: Paramount Home Entertainment, 2013) DVD; *Pacific Rim*, directed by Guillermo Del Toro (2013. Burbank, CA: Warner Bros. Home Video), DVD; *Terminator 2: Judgment Day,* directed by James Cameron (1991, Burbank, CA: TriStar Pictures) DVD.

[11] "Warrior Web Prototype Takes Its First Steps." DARPA, May 22, 2013. Accessed February 23rd 2015. http://www.darpa.mil/NewsEvents/Releases/2013/05/22.aspx.

[12] Ibid, 21; 19; 25

[13] Ibid, 25.

[14] Ibid, 22.

[15] Further theorizing surrounding the softening of the hard body can be found in *Postfeminism and Paternity in Contemporary U.S. Film* by Hannah Hamad (New York: Routledge. 2014) and *Millennial Masculinity: Men in Contemporary American Cinema* edited by Timothy Shary (Detroit, MI: Wayne State University Press. 2013) among many other postfeminist scholarship. As well, Mark Gallagher's *Action Figures* (New York: Palgrave Macmillan. 2006), specifically discussion of Chuck Norris' increasingly reliance on technology as he progresses into 90s cinema, was very useful.

[16] I explore and define the "machinic audience" in more depth in the previously cited *Interfacing with the Internet in Popular Cinema.*

[17] Jeffords, *Hard Bodies,* 27

[18] Ibid, 54.

[19] Ibid, 40.

[20] Hayles, *How We*, 105.

[21] Jeffords, *Hard Bodies,* 41

[22] Ibid 54.

[23] Ibid 54.

[24] Basic histories of the Internet can be found in: Johnny Ryan. *A History of the Internet and the digital future.* London : Reaktion Books, 2010; Christos J.P. Moschovitis et al. *History of the Internet : a chronology, 1843 to the present.* Santa Barbara, CA : ABC-CLIO, 1999.

[25] Manuel De Landa. *War in the Age of Intelligent Machines.* New York: Zone, 1991.

[26] Hayles, paraphrasing Weiner, *How We Became*, 105.

[27] Jeffords, *Hard Bodies*, 27

[28] Jeffords, *Hard Bodies*, 38.

[29] See note 8 and note 15

[30] Jeffords, *Hard Bodies*, 19.

[31] Ray Kurzweil. *The age of spiritual machines : when computers exceed human intelligence.* New York: Viking, 1999; Hans Moravec. *Mind children : the future of robot and human intelligence.* Cambridge: Harvard University Press, 1988.

[32] David Fear. "No 'Tomorrow': Doug Linman on the Blockbuster than Almost Broke Him" *Rolling Stone*. June 6, 2014. Accessed February 23, 2015. http://www.rollingstone.com/movies/news/no-tomorrow-doug-liman-on-the-blockbuster-that-almost-broke-him-20140606?page=2.