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“Making the Fantastic Real: From Design Fiction to Engineering Fandom”

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Abstract

Canadian engineer and entrepreneur James Hobson, who goes by his YouTube brand The Hacksmith (later The Hacksmith Industries), creates fantastic objects from popular culture. This study focuses on the careful yet playful process of engineering an object that in form, style and function can be considered a real lightsaber. The article aims to understand how The Hacksmith’s work can be considered both fanfiction and design fiction, while also raising questions about what can be considered fandom. The theoretical framework for the study draws from research on participatory culture, design fiction, transformative and mimetic fandom and cultural theory.

Keywords: Lightsaber, Star Wars, The Hacksmith Industries, science fiction, fan fiction, design fiction, mimetic fandom, fangineer.

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Making the Fantastic Real

From Design Fiction to Engineering Fandom

THIS ARTICLE examines design fiction, science-fiction fandom, and sharable digital media content on the one hand and the design of real-life engineering artifacts on the other, with a specific focus on *The Hacksmith* in order to understand the space of meaning (science and fiction) created by the production of “the fantastic” by this Canadian YouTuber.

Hacksmith Industries is the trademark name of the YouTube channel *The Hacksmith* created by Canadian engineer James Hobson in 2006. One of Hobson’s signature interests is the lightsaber from the *Star Wars* franchise, but Hobson explores many other dimensions of popular culture, ranging from Nerf wars shooters to superhero artifacts from the Marvel Cinematic Universe. His focus is on seeing if it is possible to construct real, functional representations of fictitious artifacts from popular culture.

Hacksmith Industries thus leads us into the liminal space between the real and fantastic, combining engineering with science fiction, design fiction and fan fiction to create the concept of a *fangineer*, someone who expresses fandom through engineering and a high or intense level of cosplay.

Playing with science, fiction, design and fandom

The creation of artifacts is or can be an extremely playful practice. A child can imagine a wooden stick to be anything from a magic wand or royal scepter to a broadsword or even a rifle. This human capacity for using imagination to transform ordinary objects also works in the

realm of the fantastic. Cardboard cutouts can become Wolverine's deadly retractable adamantium claws. In the 1990s, children used plastic hockey sticks to mimic the extraordinary swords and other weapons that the Mighty Morphin Power Rangers used against the evil forces of the intergalactic witch Rita Repulsa (Andersen 1996). It is no new insight that individuals and groups turn ordinary objects into something extraordinary in order to play with them. As Heljakka points out, adult toy fans see the toy as "an artifact that affords play patterns in relation to creative practices: aesthetic appreciation, accumulation, studying, manipulating, organizing, displaying, and sharing" (2017, 102). In the following, we will go further than this, exploring the development of a functional lightsaber (or proto saber) that is not intended to be mass-produced but is instead intended to inspire and amaze fans, while also strengthening and extending the *Star Wars* franchise.

This research was initiated as an attempt to establish a research project on the use of industrially manufactured lightsabers in the practice of both organized sport and cultural heritage (the continuation of traditional sword fighting and fencing) and cosplay fandom (representing and mimicking the fictional world of *Star Wars*). The idea was to explore the significance of artifacts taken from popular culture and introduced into the practice of organized sport (Andersen 2019). The lightsaber, both as an artifact and symbol, is important to the fans and fandom of *Star Wars*. Judkins has investigated the possibility of introducing and using industrially produced "high-tech" lightsaber replicas in weapon-based martial arts (2016). At the end of the 2000s, organizations like Ludo Sport (International Lightsaber Combat Academy) emerged with the purpose of inspiring fans to join a community in which they can share their passion for *Star Wars*, partake in lightsaber fighting as a real martial art, and learn about a philosophy or "code" promising inner peace and a positive spirit. In this sense, Ludo Sport encompasses similar values and practices to traditional martial arts (Bowman 2019).

This paper, however, has other points of departure. One is the study of fan-produced origin stories of comic book superheroes (Andersen 2017; Andersen and Vistisen 2020; Andersen and Jensen 2020), which seeks to understand the creativity, passion, and seriousness of fan media production. Another point of departure is the study of superheroes as a sign of the fantastic (Andersen & Christensen

2020), which investigates a particular mode of reflexivity infused in the representation of the fantastic realm of superheroes in both comic book and cinematic versions.

This study of *The Hacksmith* and the lightsaber tries to understand the significance of constructing in reality an object of fantasy. Any child can pick up a stick and pretend it is a lightsaber, but what if the object could be more real than even the object presented in the fictional universe? Would this blur the distinction between fantasy and reality? From autoethnographic experience, the encounter between a wooden stick coated in tin foil and an industrially manufactured stuntsaber created this response from a young Danish teenager: “It isn’t quite the same! Yours is better!” (private conversation).

As the human experience of mimicking fantastic artifacts is not new, this study is also interested in understanding how this process works when engineering principles are applied. What are the principles or phases involved in the production of fantastic artifacts? It is one thing to reimagine a storyline in the Sherlock Holmes universe; it is another thing to reimagine something as fictional as the lightsaber into an object that really can cut through steel with a superhot blade or be wielded against other real objects. Does this expand, decrease, or blur the distinction between the fantastic and the real? And is this a utopian or dystopian endeavor?

The Hacksmith: James Hobson and Hacksmith Industries

James Hobson is a Canadian engineer and entrepreneur from Kitchener, Ontario (Brown 2020). He is also a big fan of popular culture, not least the domain of superheroes. He started sharing YouTube videos of his exploits and engineering constructions in 2006. One of the first videos was entitled “Special FX lightsaber test by Master James” (The Hacksmith 2006, September). In this video, the teenage James sits on a bench in a small garden, the hilt of a lightsaber lying beside him. He looks at the hilt, takes it into his hands and then turns it down towards the ground before there is a flash of light and the sound of a lightsaber being drawn. The young “master” walks around the yard, swinging the lightsaber but making no real fencing moves. At the end, James forces the light beam into the ground, leaving the hilt standing,

marking the conclusion of the FX lightsaber test (and the use of CGI on fictional objects).

What is presented in this video is Hobson's first attempt to replicate a lightsaber on film, using Adobe After Effects on every single frame in the clip. The hilt itself is a "\$7 toy from Walmart" (Hacksmithcomment2006). The importance of this video is that it represents Hobson's first steps on the road to his transformation from "a boy and his toy" to an engineer, business entrepreneur, and recipient of a Guinness Book of World Records certificate.

During the following years, Hobson developed an avid fan following on YouTube under the name *The Hacksmith*. Because of the growing number of followers, the name of the channel was changed to *Hacksmith Industries*, marking the founding of a YouTube-based business. *Hacksmith Industries* is an enterprise that tries to recreate movie props, producing actual working prototypes. Three notable prototypes are worth mentioning because they earned Hobson media attention and probably increased the number of followers of his YouTube channel. The production of the *Wolverine Claws* brought national news media attention (2013), which increased with the production of *Captain America's Shield* (2016). In the period between the production of these two fictional objects, Hobson and his team created many other "toy prototypes", all inspired by popular culture, such as Iron Man's laser-shooting gauntlet and interactive helmet (John Favreau 2008), the exoskeleton from *Aliens* (James Cameron 1986), and the exoskeleton from *Elysium* (Neill Blomkamp 2013). The complete list of The Hacksmith's prototypes is much longer and explains the variety of Hobson's interests in popular culture.

Hacksmith Industries has 12.3 million subscribers (December 2021). While it is free to subscribe to *The Hacksmith* on various social media platforms, becoming a member costs about \$10 a month. Membership gives early access to new material, discounts on merchandise, and access to blueprints for the prototypes presented in the YouTube videos. *Hacksmith Industries* has released more than 700 videos from 2006 up to the present. New videos are released weekly. Part of *Hacksmith Industries* is a website where users can buy the usual "cups and t-shirt" merchandise. As a business, however, most of its value comes from cross-media marketing of the franchises behind the artifacts and the companies supplying components for the prototypes to be built and tested.

As mentioned, one of the signature features of *The Hacksmith* is the ongoing development of a lightsaber. The Kylo Ren lightsaber can be seen on the channel's banner. In June 2017, the creation of a first lightsaber prototype was attempted. Hobson used the canonical lightsaber from the earliest *Star Wars* film (*A New Hope*) as his diegetic prototype. This proto-saber is connected to an external power source, which means Hobson's lightsaber can be fitted to a backpack battery instead of its power source needing to be concealed within the hilt. During the following years, Hobson further redesigned the idea of the lightsaber in order to create an actual working prototype. His diegetic prototype had more features than the usual toy-like sabers: This prototype produces intense heat, allowing the lightsaber to cut through steel, but that does not make the lightsaber functional for practical use as a fencing weapon. It is this development process from the first prototype to the last award-winning proto saber that this study analyses.

Fans of *Star Wars* have been able to buy lightsaber toys since 1978, while the newer and more lifelike versions have been commercially available since 2010. These versions cost several hundred dollars, all replicating a kind of artefact that has the sound and color of the canonical lightsaber. A growing number of these models can be used to practice moves, allowing users to wield the lightsabers (or stunt sabers) in a sword-like combat mode.

For this, the light beam is simulated by a reinforced plastic tube that is illuminated from within. Like the lightsabers in the films, they have different canonical hilts as well as different colors. It is with these stunt sabers that sports organizations like Ludo Sport practice the art of lightsaber fencing. This organization started with a few clubs in Europe and the US but by the late 2010s had more than a hundred clubs worldwide. The interest in practicing lightsaber fencing is growing, both as a cosplay element but even more so as an active form of lifestyle leisure.

A world of fiction: Fanfiction and design fiction

This study draws on theories of design fiction (Kirby 2010; Vistisen, 2020), fan fiction (Jenkins 2006; Jensen and Vistisen 2013), audience studies (Abercrombie and Longhurst 1998) and studies in mimetic fandom (Hills 2002, 2014; Heljakka 2017). This theoretical framework

is used in order to understand The Hacksmith as a particular kind of fan and his engineering practice using diegetic prototypes in order to make the fantastic real.

As outlined above, James Hobson and the Hacksmith Industries team are fans of science-fiction universes, ranging from *Star Wars* to the Marvel Cinematic Universe. Hobson himself began as a fan, using his Photoshop skills to create the illusion of a lightsaber, painstakingly editing every single frame of the original YouTube video mentioned earlier. His YouTube followers continued to grow as he developed his skills, enabling him to create Hacksmith Industries. As such, The Hacksmith is an exemplary case of what Abercrombie and Longhurst conceptualise as a fan turned petty producer, or as Vistisen and Jensen have demonstrated, a fan whose work becomes a new tentpole in itself (Abercrombie and Longhurst 1998; Jensen and Vistisen 2013). In this case, the YouTube channel becomes the tentpole, which is the original work fans watch and comment on. The Hacksmith shows repeatedly how comments and suggestions inspire him to continue his work or try something new. It can, however, be a matter of debate whether The Hacksmith should be considered an acafan in the manner conceptualised by Henry Jenkins (2006). On the one hand, it seems clear in the video material that Hobson does not consider himself an academic, but he is a trained engineer who uses his skills and knowledge to produce fan-made objects. However, these objects are not “texts” or assemblages as described by Jenkins but take the form of functional and aesthetic look-alike prototypes. The prototypes are not circulated or shared, only the videos, which supports the argument that James Hobson may also be an acafan.

The Hacksmith explores fictional universes and picks out objects or artifacts to be manufactured because they are cool, iconic and an engineering challenge. These designs can be understood as diegetic prototypes (Kirby 2010) – prototypes adhering to a storyworld’s ontology. This concept will be explained later, but in relation to fanfiction and design fiction, a list of diegetic prototypes includes Thor’s immovable hammer, Captain America’s vibranium shield, Nerf weapons, exoskeletons, jet packs and many more items from popular culture. In this study, the diegetic prototype is the lightsaber, that is, the engineered construct that undergoes both physical and narrative testing. Parts of the diegetic prototype testing are carried out as an engineer would do them, but The Hacksmith’s followers are not

only treated to an explanation of the development of the functional prototype. The Hacksmith also enacts parts of the films, uses the correct terminology, and alludes to memes and fanon like the fight scene between Obi-Wan Kenobi and Anakin Skywalker from *Revenge of the Sith* (George Lucas, 2005) and the blast door melting scene from *The Phantom Menace* (George Lucas, 1999). This intimate knowledge of the fictional domain enables The Hacksmith to identify which elements of the diegetic lightsaber are important for the concrete prototype. As a fan, he is canon compliant in his design, i.e. the use of an external power source is possible because of the proto-saber from the comics.

While James Hobson started out as an individual designer, playing with Adobe's software suite and using his skills to recreate a lightsaber in a film, he became a professional design practitioner with a large enough following on the different social media platforms to sign promotion contracts. Fans can sign up as members of Hacksmith Industries, paying a membership fee to get project design files and other perks. On the Hacksmith.store, fans can buy Hacksmith merchandise like underwear or mini sabers. With these revenue streams, Hobson was able to start Hacksmith Industries, the name itself an allusion to Stark Industries from the Marvel films.

While the YouTube videos always show the design process as fun, with proper caution, it is clear to the viewer that much dedication is given to the production, the design process, and the design itself. It is this process our study identifies in what we call *The Hacksmith Lightsaber Run*, and our claim is that this run can be considered a particular fanfiction. But can fanfiction also be design fiction?

Design fiction is a way of merging the fantastic with the reality of existing technology, both in its potentially dystopian or utopian extremes (Vistisen 2020). Designers use diegetic representations of near-future or speculative design to create discursive spaces, using design "as a way to encourage discussion, rather than being a result of a discussion" (Hansson et al. 2018). While the field began as a *narrative* approach to critical design, design fictions have seen a broader scope of speculative practices, including speculation on the space between popular cultural depictions of technology and their real world viability and applicability (Sherdroff and Noessel 2012). This transformation from the fantastic to potential reality is seen in a broad spectrum of interfaces inspired by Hollywood films (Kirby 2010)

to actual industrial designs of exotic science-fiction technologies like the Voight-Kampff android scanner (Sturdee et. 2016). As such, design fiction is a constructive lens for understanding how the activity of *making* is a way of inhabiting the space between the fantastic and the real. In this way, design fiction deals with emerging technologies that are yet to be developed but are represented in a visual and interactive form. The design fiction objects are neither a simulation in the normal sense, nor a simulacrum, but a diegetic prototype.

As a core component of design fiction, the *diegetic prototype* is a tool to support the design process through “suspending disbelief about change” (Vistisen and Jensen 2018). Diegetic prototypes are objects, services or scientific breakthroughs that are only true in their diegetic “told” narrative, the story as it unfolds in the movie. The materiality of the diegetic prototype can be conceptual, visual, interactive and tangible, but not operational for real life testing. In design fiction, the purpose of the diegetic prototype is not considered to be a real technical representation but to make human imagination try to incorporate new solutions into the practice of everyday life through acceptance of the possible. As mentioned, it has been possible for some time to purchase different kinds of stunt sabers (fig. 2). These sabers are marketed both for their practical use for stunt person practice (e.g. getting ready for a part in a film scene or giving actor instructions) and for more fan-related activities and admiration. However, even in the context of *Star Wars* fandom (e.g. cosplay) the lightsaber is not just a theatrical or semiotic prop as theater scholar Erica Fischer-Lichte would describe it:

An item used as a prop has the primary sign function of signifying a particular object. In fulfilling this function, it makes no difference whatsoever whether the item in question is a stylized or a faithful imitation of the object to be signified, nor whether it is itself a concretization of this object-species. (1992, 107).

In contrast to Fischer-Lichte, the diegetic prototype (in this case the Hacksmith lightsaber or proto/plasma saber) is an emblem signifying the knowledge of the fan and how well the fan knows or reads the canon of the system of lightsabers and who in the storyworld wields what kind of lightsaber. This element deals with the notion of *canon compliance* within fanfiction studies. In order to make it look, sound,

and feel like a real lightsaber, the fighting style or fencing technique is also a matter of canon compliancy, as will be observed in the following sections.

The Hacksmith Lightsaber Run: Phases of iteration and transformation

The core of this study is what we call the *Hacksmith Lightsaber Run* (HLR). This *Run* consists of 14 videos (2006–2021), presenting the phases or iterations of the design, construction and refinement of The Hacksmith’s lightsaber. The *Run* documents several transformations of *Hacksmith Industries* that can serve as a model for understanding how science fiction and fandom can be considered *fangingeering* design fiction. In the discussion section, the question of follower comments as a key element of fanfiction will be addressed, but for this study, these comments represent an independent study on how comments from fans or followers inform the design process.

The format and genre of the Hacksmith videos follow approaches for dealing with the fantastic or mythical as something real. In comic book studies, James Kakalios published “The Physics of Superheroes”, attempting to explain what could be real and what could not be in relation to the amazing powers of popular superheroes (2005). In a similar vein, the Australian-American TV show *Mythbusters* (Discovery Channel, 2003–2016) illustrates how the use of engineering science can help us to understand the physical reality of urban legends (Zavrel and Sharpensteen 2016). Of particular interest for this study is the format of *Mythbusters*, with its use of construction and testing montages. With the exception of the first two videos in the HLR, the construction of the different lightsaber prototypes is presented in a similar engineering montage style, e.g. identifying key problems, designing and constructing the object, welding, cooling, assembling, and finally testing it in both non-diegetic and narrative diegetic settings.

The following analysis of the HLR consists of two parts. The first is a chronological reading of the selected videos (fig. 1), and the second part is an interpretation of the HLR as a fan-made design fiction narrative. This second part is inspired by the three-step rhetorical model used in fanfiction studies to understand the transformation

Date/Views	Video/Link (minutes:seconds)
21.09.2006 (582,468)	Special FX lightsaber test https://youtu.be/PWIP4v2luVI (01:55)
21.09.2006 (64,569)	Lightsaber clone fight https://youtu.be/_F7KiRy22vs (00:13)
02.06.2017 (3,028,047)	Homemade Lightsaber Explosion https://youtu.be/wUdLIGLSQHQ (06:12)
07.12.2017 (10,812,305)	2500 degree Lightsaber build https://youtu.be/75g162WSpoQ (14:31)
26.01.2018 (6,710,727)	2500 degrees Lightsaber cuts through door! https://youtu.be/hrmdz7RQN8 (11:46)
03.01.2019 (25,850,137)	3000 degree Titanium Lightsaber build https://youtu.be/SC3jGEp5llU (14:02)
19.12.2019 (14,394,461)	World's First Protosaber! https://youtu.be/_efVoeiSKPo (17:45)
12.03.2020 (5,418,234)	Real Lightsaber Duel! (2752 degrees) https://youtu.be/18MiAbfB3g8 (10:25)
04.05.2020 6,921,524	3000 degrees Kylo Ren Lightsaber! https://youtu.be/LRlNml-nlPU (18:49)
08.10.2020 31,354,220	4000 degrees Plasma Proto-Lightsaber build (retractable blade) https://youtu.be/xC6J4T_hUKg (18:15)
15.10.2020 16,854,923	4000 degrees Proto-Lightsaber test (cuts anything) https://youtu.be/ey_EjSzKFWQ (11:03)
22.10.2020 7,171,876	Proto-Lightsaber vs Bank Vault https://youtu.be/7py7NMMhE_M (10:28)
12.11.2020 3,901,282	Proto-Lightsaber vs Diamond Play Button https://youtu.be/iVVOBU2mHQw (16:37)
04.05.2021 2,643,896	4000 Lightsaber vs Hand !? https://youtu.be/hzPAPAI_nWU (16:59)

*Fig. 1: Overview of The Hacksmith Lightsaber Run from 2006 to 2021.
(Data from 2021.4.19)*

1 (2006): A boy and his toy. “Master” James plays with a CGI-generated lightsaber. No voice over and poor video quality. Master indicates fascination and fandom.

2 (2017): The First Try. James is wearing a beard (Hugh Jackman-style) and a t-shirt featuring the Hacksmith Industries logo. The design and construction of the tungsten prototype. The problem: materials (floppiness), energy and heat. Though engineering is not always safe, the “boyish” fascination is clear. Signs of Star Wars are used as playful meta comments and to make intertextual references to the diegetic narrative.

3 (2018): Placing the prototype in a diegetic narrative. James is still wearing his beard and the t-shirt featuring the Hacksmith Industries logo. The design and construction of the titanium prototype. The problem: still energy and durability, but now also mobility. Though engineering is not always safe, the “boyish” fascination is clear. Signs of Star Wars are used as playful meta comments (cosplay). Sponsors and sponsored materials are mentioned and used in the construction and test.

4 (2019): Iteration and focus on function in non-diegetic narrative. James is still wearing his beard and the signature t-shirt featuring the Hacksmith Industries logo. The iteration on the titanium prototype. The problem: Mobility and function (fencing). The garage is replaced by a fully stocked engineering workshop. The non-diegetic format is dominantly (CAD schematics) situated in the test settings. The Hacksmith team enters (new competencies).

5 (2020): Refining the prototype, respecting the canon. James is still wearing his beard and the signature t-shirt featuring the Hacksmith Industries logo. The design and construction of the plasma proto-saber. Problem: canon compliancy issues with blade colours and retractability. The process is still playful, but the business element has become more dominant. The Hacksmith team grows in number and competencies.

6 (2021 to present): Guinness World Record Recognition. James is still wearing his beard and the signature t-shirt featuring the Hacksmith Industries logo, but in the scenes explaining the physics he is wearing a scientist white shirt. The testing of the plasma saber. The problem: can it be used, and does it hurt? Copyright issues are mentioned as a constraint in the design. James hints at a further iteration that will combine the different functions (heat, mobility, retractability). In the final step, the lightsaber concept transcends the world of diegetic prototypes into a factual engineered prototype.

Fig. 2: The HLR in phases and observations.

from fan reception to fan co-creation (Jensen and Vistisen 2013). It is important, however, to underline that “the voice” of The Hacksmith’s fans or the channel followers is not included in this study.

On the basis of this chronological reading of the HLR, several interpretations or claims can be made. The first is that the HLR design narrative mixes or merges the diegetic and non-diegetic lines. The design and construction of the different prototype sabers are presented in both the engineering workshop setting (non-diegetic) and the fictional setting of *Star Wars* (e.g. when James turns to the dark side to play the part of a horrible business manager seduced by the force of his own creation, and when the melting of the blast door scene from *The Phantom Menace* is recreated and music from the films is used). A second claim is that, throughout the HLR, many transformations are taking place (from boy to adult, from fan to professional businessman, from enthusiast to scientist, from hobby to trademark business). A third claim is that The Hacksmith does not create a lightsaber in any canonical sense but demonstrates that different canonical elements or features of the lightsaber can be engineered for real. With the use of canonical elements such as sounds, music, images, and cosplay scenes, The Hacksmith generates an ethos that appeals to audiences and increases the following and the interest in making fictional things real.

As observed, the chronology of the HLR indicates transformation. Can these transformations be understood as a design fanfiction narrative following the steps of the *three-step rhetorical model* (Jensen and Vistisen 2013)? This model consists of three steps: *Ethos*, in which the aim is to suspend disbelief and make the audience acknowledge the presented narrative; *Pathos*, in which emotions or passions are mobilized, transforming the audience into stakeholders; and *Logos*, in which the audience turn into co-creators, in the case of The Hacksmith by commenting or posting responses or suggestions. This transformation is not documented in this study, but it is clear in the discourse of James Hobson that comments from fans are the driving force for him to explore and iterate on diegetic prototypes.

This study argues that the HLR can be considered a design fanfiction both because of the status of James Hobson as fan, but also because of the fan following contributing to the ongoing and emerging lines in the overall narrative of Hacksmith Industries. This, however, demands a separate study to document in detail.

Fengineering: Engineering a design fanfiction narrative?

The Hacksmith's design and construction of lightsaber prototypes is just one of many projects carried out by Hacksmith Industries, yet it is *the* project that initiated the business by generating more than one billion views and likes on the channel (Brown 2020). However, where does this lead to in terms of the future? Is the HLR as a design fanfiction indicating a utopian or a dystopian narrative?

The website of Hacksmith Industries and the video discourse of James Hobson both articulate an ambition to employ fandom and passionate interest in the fantastic and fictional to promote STEM disciplines (science, technology, engineering, mathematics). The Hacksmith uses diegetic prototypes inspired by popular culture to evoke or nurture a belief in a utopian future in which engineering and technology can solve problems using the passion of fans of popular culture franchises. To paraphrase Italian semiotician Umberto Eco: A path to the truth can be found in texts that uses lies. In Eco's words: "*semiotics is the discipline studying everything which can be used in order to lie*" (1979, 7). However, it is also possible to interpret the HLR in a way that does not indicate any clear intention to reflect notions of utopia or dystopia. Hacksmith Industries deals in engineering as a mix of hard work and fandom fun and passion. This makes sense because The Hacksmith is part of an entertainment industry, even though it is based on the provision of test facilities for other business' project ideas and marketing communications.

A second issue to be discussed has to do with the aspect of canon compliance and the lightsaber. Even though the different lightsaber prototypes generate enough heat to cut through metal, can be used for crude swordsmanship, and can be retracted, the question of actual lightsaber fighting is not considered. It is possible to recognize at least three different sword-fighting or fencing styles in the *Star Wars* franchise (not including the animated productions). In the first instalment, Japanese kendo sword fighting is performed (*Star Wars* 4–6). This style is technically complex and requires knowledge of Asian martial arts to fully appreciate. In kendo, the basic principle is to keep both feet on the ground, not to jump around. The second instalment (*Star Wars* 1–3) features a different style based on Chinese theatre swordsmanship that is more acrobatic and dramatic. In the

final instalment (*Star Wars 7–9*), the style is more like European sword fighting as practiced in HEMA (Historical European Martial Arts), which is recognized in modern organized fencing. This point raises the following question: If we believe in the possibility of creating a real lightsaber, what kind of style would be the most canon compliant and appropriate for organized sport as well as fandom contexts? In the *Star Wars: Legends* material, seven lightsaber styles are presented (Judkins 2016). Some even reference real or acknowledged ways of handling a fencing weapon with the qualities of a lightsaber. As mentioned, international organizations such as Ludo Sport provide lessons in the practice of wielding a lightsaber, employing both knowledge of technique and aesthetic performance.

A third follow-up issue is the future of lightsabers both as part of fandom and established martial arts. Could lightsaber replicas awaken an interest in sword fighting and fencing? Can lightsaber replicas be used to invite fans to participate in sport by acknowledging the nerdy fan interest as something acceptable in the established leisure sport landscape? The video materials listed in the reference section of this article demonstrate that lightsaber sword fighting can be used to rekindle an interest in sword fighting as cultural heritage, as well as invite individuals to be part of a community and avoid loneliness, isolation and inactivity. At present, there is no indication that the lightsaber and lightsaber swordsmanship will become trivial and lose their fascination.

A fourth issue is what impact the creation and incorporation of the lightsaber (in the form of stunt sabers) will have on fans. If the fantastic object becomes a household item, will it lose its evocative power and erode the ability to imagine and inspire? These questions may be answered negatively if we consider objects like the lightsaber not just a toy but also an expensive collector's item, an interactive prop in cosplay and forms of role-play, and a tool in organized martial arts practice.

A final issue has to do with meanings created by *Star Wars* fans. What value do these meanings generate for the *Star Wars* franchise? It is obvious that “nerd interest” has become a profitable commercial business. Every time a person plays with any kind of lightsaber, the franchise and the fantastic universe of *Star Wars* are renewed. However, fans and followers are not just enthusiastic and creative. They are also, to borrow a term from Umberto Eco's semiotics, smart (1979). They do not only *play along*, they also play to their own tune and at

their own pace. It is quite unlikely that The Hacksmith's lightsaber prototypes will create a layer of meaning opposed to that of *Star Wars*. Yet it is possible to find video commentary on YouTube that creates discourses that are critical of the franchise's use of the lightsaber. It is, however, unlikely that this criticism will reduce the passionate interest in *Star Wars*. More likely, it will inform the franchise's attempts to do better since The Hacksmith's process has proven that the diegetic prototypes can be transformed into real engineered prototypes. This may be supported by the last video in the HLR, in which James Hobson talks about a collaboration with the Disney Corporation.

Mimetic fandom: Reframing the study as a case of an affirmative fandom

Up to this point, the study of the Hacksmith Lightsaber Run has argued that James Hobson might be considered a fan in the terminology of Vistisen and Jensen. However, the issue of what type of fandom The Hacksmith can be said to perform and why needs clarification. In this section, we will present some reflections on The Hacksmith's lightsaber construction in relation to the phenomenon of *mimetic fandom* as defined by Matt Hills (Hills 2002, 2014; Godwin 2015; Kiedl 2018).

In his study of fan cultures, Matt Hills identifies some conflicts in the definition of fandom. These conflicts have to do with affirmation and transformation, commercialism and criticism, reproduction and creativity, and materiality and textuality. In a study of *Doctor Who* fandom and *Daft Punk* fandom, Hills observes:

It may simply be that replica prop builders (and related fan practices such as sculpting) are sufficiently small scale – marginal in the cultural field of fandom, if you like – compared to the vast range of textual productivity that takes place elsewhere. However, even if we are dealing with sub-communities here, there can be no doubting the distinctiveness of these fan activities. (...) The assertion from hardcore Dalek builders that they don't do fiction or even general discussion, instead focusing solely on the goal-oriented activity of Dalek construction, implies this potential division of fan labour exists. (...) mimetic fandom is typically linked to the fannish construction and shaping of an ontological unity between media texts and everyday life. Mass-mediated content is here remade as physical matter, tangibly manipulated and brought into a 'mediated lifeworld.' (2014, section 1.6)

Based on his study, Hills continues: “Sections of fan studies have seemingly assumed that fan works that are not self-evidently transformational are simply of no interest, that they have nothing new or exceptional to tell us as fans or scholars because all they do is restate canon. In short, this all tends to coalesce towards a central concept; it’s all about nailing down the details, and hence there’s no real cultural analysis called for” (2014, section 2.2).

The basic argument is that because fans try to “nail down the details” to make their work as authentic as possible, their work is not transformative but canon compliant, thus potentially reproducing the values and worldviews of the hegemonic franchises. In Hills’ view, this leads to a devaluation of mimetic fandom because it provides no critical materials or interpretations that counter the hegemony. Hills’ position is that this closes off a scholarly opportunity to identify a real diversity in fandom studies. Some fans write transformative slash fanfiction, while others see if it is possible to materially create objects from mediated texts. Neither is less worthy of cultural analysis or fan study.

At this point, the issue of gender emerges. Why does fandom studies appear to favor “women” writing slash fiction (like Sherlock/Watson, Bond/Q, Kirk/Spock) and ignore “men” trying to replicate objects from popular culture? Hills acknowledges that a “feminine” position has been a victim of hegemonic domination in relation to values and norms, but this should not, from Hills’ position, mean that academic interest in and acknowledgement of “masculine” fandom practices should be dismissed. Transformative and affirmative practices are just two different strategies pointing to a diversity in fandom studies.

It needs to be underlined that gender labelling of any fandom is not something done lightly, but in the case of *The Hacksmith*, gender discourse appears to be of the binary kind. In the selected data, the issue of gender is not addressed, but user comments and suggestions might address gender or gender labelling as an issue. This question is for another study to investigate. Further, this study does not claim that “masculine” fandom is ignored; studies of sports fandom document that male fan culture is anything but overlooked academically, but these studies subscribe to a more conservative or hegemonic gender understanding (Sandvoss 2003). It is not our intention to insist on a distinction between a “masculine” real world fandom and a “feminine”

fantastic. Our intention is merely to point out that fandom and fan cultures within the realm of the fantastic are diverse.

Hills concludes his argument by defining *mimetic fandom*:

Mimetic fandom can thus be defined as a matter of oscillatory distinctions that vary at different levels of analysis and appreciation. It appears to be affirmational from a distance, but transformational details are evident when viewed closely. It seems authentic by virtue of non-commerciality, but it indicates inauthentic brand extending and so-called grassroots marketing when considered from a commercial perspective. (...) mimetic fandom thus occupies an interspace between materiality and what might be termed *soul*, building and branding, imitation and individuation. In addition to pervasively in-between positions, however, mimetic fandom also performs a desired bridging of text and reality. (2014, section 2.17).

How does this understanding of mimetic fandom reframe the Hacksmith Lightsaber Run? Firstly, it insists that the study of fandom cannot dismiss fans' efforts to reproduce elements of original mediated materials. Trying to create a functional replica of the *Star Wars* lightsaber is not less worthy of academic attention just because it is not transformative. What is needed is a different theoretical framing. Secondly, Hills shows a way to both acknowledge and celebrate the technical and constructive practice of designing fictional objects that are not mass-produced and created with the aspiration of "what if". What if we could design and engineer a lightsaber, even though essential and fictional parts (the lightsaber *kyber* crystals) are beyond our current scope and inventory?

Hills' notion of *mimetic fandom* informs our study of the Hacksmith Lightsaber Run by pointing to the fact that fans constructing material replications from mediated texts of popular culture are of no less value than studies of transformative and critical fandoms. The Hacksmith has successfully built a marketing business, but this should not result in the dismissal of academic interest in fans trying to "nail the details" as realistically as possible, both in terms of form, but also, uniquely for this case, in terms of physical function. Here we could add that the subtext of the Hacksmith Lightsaber Run is the message that engineering *is* fun and can inspire fandom work and fan culture. In other words, a *fangineer* does not make playthings or toys (James Hobson says in some of the videos "don't try this at home", like the

Mythbusters have done in their shows), but uses imagination and engineering to create something of value to others.

Making the Fantastic Real: Concluding remarks

This study of the Hacksmith Lightsaber Run as a design fanfiction narrative has tried to answer the question: Does this engineering effort of constructing a functional lightsaber expand, decrease or blur the distinction between the fantastic and the real?

It is evident that the Hacksmith lightsaber and the different prototypes are technical representations of a diegetic object, and that these prototypes will not be used for actual swordsmanship because they are not toys and are not designed as weaponry. Nevertheless, the diegetic object retains its meaning from the fantastic narrative. In the videos, The Hacksmith seems to be “boyishly” fascinated in all the phases, even though he knows that his lightsabers will never be a *Star Wars* lightsaber, canon compliant or otherwise. Even though The Hacksmith is walking on or working with this line, *nothing indicates that the line between what is real and what is fantastic is blurred*. Any blurring of this line will only happen if a fan makes comments like: Look at the screen, it’s just like The Hacksmith’s lightsaber!

The question about the normative disposition of the HLR can be answered by pointing to the title of the first *Star Wars* film: *A New Hope!* This can be interpreted as the HLR presenting a utopia. If we have to fight, we must do so in a more civilized manner! But the HLR promises that it is possible to be recognized as a fan trying to mimic or create objects from the realm of science-fiction. The HLR is a utopian narrative because it indicates that human creativity, whatever the form and passion, widens opportunities for participating in a fandom. If the HLR is interpreted critically, it can be understood as a narrative of business success, but more important is the message that The Hacksmith demonstrates: Creativity is hard fun. It takes work, dedication, and not least the acceptance of failure. Participating in fan culture is hard fun or more accurately “hard play”. In the video material, The Hacksmith presents the reflection that technology can seduce. One way of interpreting this is to acknowledge that “my fun” cannot or must not “hack” the life of other people, other fans.

As a concluding remark, this study claims that The Hacksmith’s engineering fan work has created an opportunity for the organized

sport of martial arts to draw on popular culture to create new ways to meet with fans. Fans who enjoy *Star Wars* can draw on the fascination and transform it into an active way of life. This meeting or merging holds the promise that individuals can find ways to live an active leisure life by re/living their fan interests and passions. To rephrase: This is the way!

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