

# Making Space: Law and Science Fiction

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*Abstract: In this article I argue for greater attention to be paid to science fiction within sociolegal scholarship. In the first half of this paper I highlight that science fiction and law are already intertwined, science fiction having been commented on in a number of judicial decisions and law having been the focus of a number of science fiction texts. I then move on to outline how the law and science fiction are further interrelated. I begin by noting how law draws upon popular culture, and discuss how, in some instances, the law can realize science fiction. I then highlight science fiction's usefulness as critique and how this feeds into the way that law draws upon popular culture. In the second half of the article, I exemplify these processes using the case of the admixed embryo. I examine admixed embryos within science fiction, using the 1995 film *Species* as a starting point. I explore the reciprocal relationship between popular attitudes and science fiction, then question how these factors influenced the amendments to the U.K. Human Fertilisation and Embryology Act 2008. To conclude, I reassert the interpenetration of law and science fiction, arguing that both disciplines are inextricably tied to one another as they try to, respectively, regulate and envisage the future.*

*Keywords: science fiction / admixed embryo / Species / popular culture / HFEA 2008*

Science fiction is perhaps the most innovative of popular forms. It is also one of the most critical. The representation of all new worlds involves a process of reflection and comparison with a society as it is now. This means that science fiction can have a consciously utopian function; but it can also extrapolate the worst social trends, warning of terrifying futures.

— Scott McCracken, *Pulp: Reading Popular Fiction* (1998)<sup>1</sup>

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## INTRODUCTION

In this article, I argue that greater attention should be paid to science fiction within sociolegal scholarship. After attempting a definition of the term “science fiction,” the first part of the paper highlights some of the ways in which science fiction and law are already intertwined, noting that a number of judicial opinions have commented on science fiction and that many science fiction texts have focused on law. Elaborating on these connections, I argue that, in some instances, the law allows for the realization of entities previously thought of as science fiction. I also highlight science fiction’s usefulness as a critique of both law and society, explaining how this function of science fiction feeds into the way that law draws upon popular culture. Science fiction allows for a space in which alternate social and legal systems, conditions, and variables can be considered, and it is beneficial for law to consider these alternate situations, given that they are often inspired by popular attitudes. By considering science fiction’s representations of the different approaches that could be taken to possible legal problems of the future, the law will be better equipped to deal with these problems when they eventually arise.

The second part of the article exemplifies these processes using the case of the admixed embryo, an embryo that contains both human and animal DNA. Although sections 3 and 4 of the Human Fertilisation and Embryology Act (HFE Act) 1990 originally prohibited the creation of hybrid embryos, the 2008 amendments to the Act have allowed admixed embryos for research purposes. The second half of this article examines admixed embryos within science fiction, focusing on the 1995 film *Species*. Using the film as a starting point, I first explore the reciprocal relationship between popular attitudes and science fiction, and then consider to what extent both science fiction and the popular attitudes it expresses may have influenced the amendments to the HFE Act. To conclude, I reassert the interpenetration of law and science fiction, arguing that both disciplines are inextricably tied to one another as they try to, respectively, regulate and envisage the future.<sup>2</sup>

## PART I: SCIENCE FICTION AND LAW

### Defining Science Fiction

. . . science fiction has come to permeate our culture to such a degree that its basic repertory of images—rocket ships and robots, aliens and dinosaurs—are standard items in the fantasy life of any preschooler.<sup>3</sup>

Science fiction has had a huge influence on the imagination of contemporary society, and most people are aware of its tropes and themes from an early age. This section will sketch a working definition of science fiction, and in doing so make some references to its history.

The first time the term “science fiction” was hinted at was in April 1926 in the pulp magazine *Amazing Stories*. Editor Hugo Gernsback wrote:

By “scientifiction” I mean the Jules Verne, H.G. Wells and Edgar Allen Poe type of story—a charming romance intermingled with scientific fact and prophetic vision. . . . Not only do these amazing tales make tremendously interesting reading—they are always instructive. They supply knowledge . . . in a very palatable form. . . . New inventions pictured for us in the scientifiction of today are not at all impossible of realisation tomorrow.<sup>4</sup>

Narrow definitions of science fiction often claim that there was no science fiction before 1926, and that science fiction began within the pages of *Amazing Stories*. On this reading, science fiction began simultaneously with its definition. Gernsback’s definition of science fiction, however, clearly draws upon an earlier body of writers whose work, at the time they were writing, was not defined as science fiction. This has led some to suggest that science fiction includes works written by authors such as Edgar Allen Poe and Jules Verne, or even that it began with these authors.

Disch, a proponent of the view that Poe is the forefather of modern science fiction, notes that many other authors have been proposed as the first writer of science fiction. The legend of Gilgamesh, for example, is often cited as the earliest known science fiction. Similarly “J,” the accredited but unknown author of Noah and the flood and the Tower of Babel, gets comparable endorsement.<sup>5</sup> However, Disch criticizes these views, maintaining that if “myths and legends are to be accredited as science fiction, then half of the world literature before the novel must be accounted ancestral to science fiction.”<sup>6</sup> By allowing mythology a place as the urtext of science fiction, we make the genre’s definition too broad. Although it is true that science fiction has many similarities with these ancient legends, it can also be argued that this is true of all fiction. Instead, I would argue that science fiction grew out of a range of subgenres. Darko Suvin identifies some of these, including the “fortunate island” story of medieval and classical literature, the “fabulous voyage” literature of antiquity, the “planetary novel” and “utopian stories” of the renaissance, the “state political novels” of the enlightenment, and the “dystopian literature” of (post)modern times.<sup>7</sup>

As King and Kryzwinska note, “It is precisely science fiction’s diversity and flexibility, through its ability to absorb ideas from other domains, that has kept the genre alive for more than a century.”<sup>8</sup> Kincaid argues, on a similar basis, that there is no singular, definitive urtext, but rather a multitude of sources.<sup>9</sup>

This plethora of influences is part of the reason that “science fiction” is such a contested term. The many debates about the term’s meaning have led the authors of *The Encyclopedia of Science Fiction* to conclude:

There is really no good reason to expect that a workable definition of science fiction will ever be established. None has been, so far. In practice, there is much consensus about what science fiction looks like in its centre; it is only at the fringes that most of the fights take place. And it is still not possible to describe science fiction as a homogeneous form of writing.<sup>10</sup>

Kincaid suggests, however, that we should see science fiction as an umbrella term, similar to the word “sport.”<sup>11</sup> It is impossible to define “sport” simply by referring to the rules of football or tennis, for example. This does not mean, of course, that there is no such thing as sport. Perhaps we can see similarities here with law; it would be difficult, for example, to define “law” by describing only contract law. This sort of description would fail to accommodate the many different aspects of law. As Kincaid sensibly deduces:

Science fiction is what we point to when we say “science fiction,” and where the genre begins historically and what constitutes that genre will vary as the direction in which we point varies. But because we can identify the various threads that combine to form the whole, so we can talk sensibly about the genre and understand others when they do the same, and so we can draw an historical model for the genre in which the details may vary but the overall narrative tells a story we all understand.<sup>12</sup>

Despite arguments about the nature of science fiction, we can see that, for the most part, science fiction has a recognizable style and deals with familiar themes. Disch, for example, notes that “[s]cience fiction is an industry, or rather a major component of two large industries, the movies and publishing.”<sup>13</sup> Similarly, Suvin recognizes that science fiction represents a massive part of both the film and publishing industries, as it is a genre that has managed to sell consistently for the better part of one hundred years and is popular in all of the leading industrial nations.<sup>14</sup>

These definitions clarify science fiction in an industrial sense, but fail to distinguish it from other literary and film genres. Melzer, by contrast, goes some way toward defining “science fiction” by noting the “recurrent themes and approaches” that are common in the genre.<sup>15</sup> Melzer highlights, first, that science fiction often focuses on socioeconomic relationships. Second, she perceives science fiction to be a space in which the conflicts between modernity and postmodernity can be negotiated. Third, she indicates that science fiction is a space in which a consideration of technology and its implications can take place. Finally, she notes that science fiction is a genre that highlights the constructed qualities of both culture and nature.<sup>16</sup> All of these themes are often, though not always, strongly related to human life. Indeed, it is this familiarity of the human, coupled with the strangeness of the environment or situation, that Melzer believes is at the heart of science fiction.<sup>17</sup> Suvin echoes this point:

Science fiction is . . . a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is an imaginative framework alternative to the author’s empirical environment.<sup>18</sup>

The idea of estrangement is important to any understanding of science fiction. The interplay of the familiar and the strange, highlighted by Suvin, cuts to the genre’s very core. Whether the genre must also establish an imaginative framework other than the author’s environment is more debatable. Although many works are removed in time and space (“a long time ago in a galaxy far far away,” for example), many others take place in worlds similar to the author’s environment, albeit with the addition of new contexts or situations that add a sense of alterity (*Independence Day* [1996], *The Day After Tomorrow* [2004], *Donnie Darko* [2001], etc.).<sup>19</sup>

Although Suvin’s emphasis on removal from the author’s environment as an essential element of the genre’s definition is hence problematic, the interplay between estrangement and the familiar seems to be a constant.<sup>20</sup>

In the case of *Species*, the example that I shall be using in this article, we witness a world very similar to our own. The estrangement from our own world comes in the form of contact with an alien race and the gestation of an admixed embryo. It is difficult to discuss the issues surrounding admixed embryos without referring to science fiction. Indeed, much of the media

coverage surrounding admixed embryos claimed that “this is no longer science fiction.”

Though tales of human-animal hybrids date back centuries, one of the earliest science fiction writers to touch on this theme was H. G. Wells in his novel *The Island of Dr. Moreau* (1896). In the text, Dr. Moreau creates a number of human-animal hybrids who learn, through law, how to live in society. Eventually, transgressions of the law lead the hybrids to reject their human status and return to their animal natures. The novel seems to support the view that animal-human hybrids are a monstrous abomination and should be prohibited. They are monstrous, one could argue, in the Foucauldian sense that they are at once a transgression of both nature and law. As Sharpe explains:

[Human-animal hybrids] involve a double breach, of nature and law. They involve a breach of nature because the process of their creation entails mixing human and animal. They involve a breach of law because mixing of this kind introduces a profound challenge to a key legal distinction. . . . The confusion that human-animal hybrids introduce into the law can be considered to be of the most profound kind. It is, perhaps, at least in part, for this reason that law seeks to prohibit, rather than regulate through a process of normalisation, as has been the case in relation to . . . other legal monsters.<sup>21</sup>

Science fiction represents an arena in which these monsters can be brought to life and where their transgressions of both law and nature can be realized. It represents a space where the implications of biotechnologies can be considered. In *The Island of Dr. Moreau*, the creation of these monsters led to a questioning of the motives of scientists. This sense of suspicion regarding the motives of scientists when considering the idea of human-animal hybridity seems to have persisted until contemporary times. H. G. Wells captured the public mood of the time and reinforced it with his novel. Indeed, two years after the novel was published, the British Union for the Abolition of Vivisection was created. Through this text, we can begin to see the role science fiction plays in both capturing and reinforcing public opinion.

Human-animal hybridity remained science fiction until the HFE Act 1990, which prohibited the creation of admixed embryos. Through its description of these entities, the law made a space for them to become real. In 1995, just under a hundred years after *The Island of Dr. Moreau*, the novel's themes and tropes were reexamined in the film *Species*. Again human-animal

hybridity came to the fore, along with concepts of monstrosity, natality, and personhood.

Before turning to my analysis of *Species* and its relationship to the admixed embryo issue, I would first like to explore the idea that science fiction has already, to some extent, permeated the consciousness of the judiciary, having been referenced in a variety of cases.

### Judicial Conceptions of Science Fiction

It is part of the inspiration of the Law and Literature project that the divisions we make between different ways of reading, writing, and learning and between different disciplines are therefore cultural rather than natural, constructed rather than given.<sup>22</sup>

Science fiction has considered law and matters of jurisprudence in many of its texts; I argue, however, that this relationship is reciprocal. Science fiction has permeated the imagination of law, the judiciary, the legislature, and the electorate. Threadgold highlights the need for law to engage with the processes by which texts make its meanings,<sup>23</sup> and in this section I highlight some of the different areas in which law has explicitly engaged with science fiction and its themes. As a consequence of this engagement, I argue, legal language is, in some areas, a language of science fiction.

The judiciary has considered science fiction in a number of different contexts. I will mention four.

First, law deals with science fiction in patents and copyrights that formally recognize it as a genre in both literature and film.<sup>24</sup>

Second, science fiction is often presented in case law as the pastime of the mentally unstable, listed as the hobby of, amongst others: rapists,<sup>25</sup> pedophiles,<sup>26</sup> and the mentally ill.<sup>27</sup> This is despite the fact that in 1998, science fiction accounted for one in ten books sold in Britain, and in the United States as many as one in four.<sup>28</sup> In addition, sixteen of the top fifty highest grossing films of all time have been science fiction oriented.<sup>29</sup> To single science fiction out as a deviant pastime, therefore, seems a little unfair, if not empirically questionable.

The third way that the term “science fiction” is used in law is as a descriptive term when speaking of events that legal parties were not adequately prepared to deal with, such as in the analysis of advertising contracts that did not foresee the growth of Internet advertising.<sup>30</sup> In the case of *Hiram Walker & Sons Inc. v. Drambuie Liqueur Co.* (1998), the parties went to Court over a dispute

regarding Internet advertising. Lord Penrose, adjudicating, claimed that at the time that the contract was made, Internet advertising was “science fiction.” In this instance, science fiction was impliedly conceptualized as something that can, to some extent, accurately predict future challenges to law and society.<sup>31</sup>

The fourth sense of science fiction, and perhaps the most interesting, pertains to judicial speculation. The judiciary sometimes considers how its decisions may have been affected if the circumstances of a case had been relevantly altered by ideas found in the genre of science fiction. Judges have engaged in this type of speculation with regard to the creation and manufacture of artificial life,<sup>32</sup> in addressing the issue of whether torture can be carried out by a nonhuman machine,<sup>33</sup> and in relation to the increasingly porous boundary between life and death.<sup>34</sup>

By acknowledging that circumstances previously imagined only in science fiction, such as the growth of the Internet, the creation of artificial life, and advances in cutting-edge medical techniques, can influence legal doctrine, the judiciary has demonstrated a willingness to draw upon the imagery of science fiction to convey its opinions. This willingness may indicate that science fiction is able to capture cultural attitudes and trends in a way that law cannot. As a result, the imagery present within the worlds of science fiction moves into the popular vernacular, and from there, eventually, into the legal lexicon. By focusing on relationships between culture and technology, science fiction can predict and confront social and technological change before these matters have been considered by the judiciary. As Aristodemou notes, “While judges and legislators are constrained by precedent and financial and political interests, literature enjoys the freedom to take risks, dislocate old laws and structures, and articulate new imaginaries which may in turn become laws.”<sup>35</sup> By imagining possible interplays and worst-case scenarios, science fiction allows for a cultural response, consideration, and critique of events before they occur. As a genre, science fiction is arguably more apt to deal with these sorts of issues than other forms of film or literature, as it more directly concerns itself with issues surrounding the future and technology. By highlighting possible futures, science fiction enables law to consider different strategies for dealing with new events and scenarios. I will now consider more thoroughly the ways in which science fiction is useful to law. Using the example of the admixed embryo, I seek to demonstrate that science fiction both highlights (or even fuels) existing cultural concerns and creates a space in which to consider the implications of new technologies.



## PART II: THE ADMIXED EMBRYO IN LAW AND SCIENCE FICTION

### Law in, and as, Science Fiction

In Britain, sections 3 and 4 of the Human Fertilisation and Embryology Act of 1990 banned the creation of hybrid embryos, which is to say embryos containing both human and animal DNA. Section 3(2)(a) of the Act banned the placing of any live gametes or embryos other than human gametes or embryos into a woman. Additionally, section 3(3)(b) prohibited the placing of a human embryo into an animal. Under section 4(1)(c), the mixing of human gametes with the live gametes of any animal was also prohibited. At the time the Act was passed, very few scientists were working on the concept of hybrid embryos, and the idea of mixing human and animal DNA within an embryo “seemed . . . to inhabit the outer reaches of scientific fiction.”<sup>36</sup> Isabel Karpin has argued that, by describing and prohibiting nonexistent entities—in this case the admixed embryo—the law becomes responsible for their creation:

The idea that law, through its prohibitions, is actually engaged in fictional productions is a radical view, yet it is clearly happening. Although the legal response is to defer the engagement with alterity, nevertheless, through the articulation of that deferral, law is engaged in imaginary practices which give legal form to those proscribed embryos in order to bring their undecidability to order. The possibility of these prohibited embryonic forms is made real by the recognition of the inevitability of legal failure. The stated aim of law to stop the creation of these forms raises the tantalising possibility that the law will not or cannot stop them.<sup>37</sup>

In a sense, according to Karpin, the law created the admixed embryos through its prohibition of them. I would like to build on Karpin’s analysis in three different areas. First, I would argue that, given the relative dearth of scientific research into the area of hybridity when the HFE Act 1990 was being contemplated, law drew upon the huge and available body of popular discourse in its initial decision to prohibit the admixed embryo. Second, by prohibiting this form of human-animal hybridity in the context of the laboratory, the law contributed to these entities becoming realized. Third, we can see that the law, through its engagement with the admixed embryo, has inspired a new generation of science fiction. This new generation includes, for example,

Vincenzo Natali's film *Splice* (2009), Alastair Reynold's book *Redemption Ark* (2002), Margaret Atwood's latest offerings, *Oryx and Crake* (2003) and *The Year of the Flood* (2009), and the 1996 remake of *The Island of Dr. Moreau*, featuring Marlon Brando and Val Kilmer. This new science fiction, in turn, filters back into the public discourse and begins to affect our understandings of new technologies. These science-fiction-influenced conceptualizations permeate society, and the judiciary, legislators, and voters draw on them in making new laws.

Popular culture, and consequently science fiction, can be seen as having a political dimension, particularly when we consider Posner and Sherwin's insight that many people witness the legal and political systems *exclusively* through the medium of popular culture.<sup>38</sup> As these authors note, individuals do not, for the most part, have very much direct contact with the legal system. Instead, for a majority of people, knowledge and experience of the law is mediated by and filtered through the lens of popular culture. Mukerji and Schudson argue that, because of this interconnectedness, popular texts are worthy of further study "not simply because they are popular but because they may contribute to, or impede, rational and critical participation in the political world."<sup>39</sup> Sherwin echoes this view:

. . . ordinary expectations, shared values and popular beliefs—what might be called the collective "folk knowledge" of the community—enter into the law directly by the way of the jury in civil and criminal cases, and indirectly by way of the ballot, the process by which citizens put judges and legislators into (or out of) power. But there is more. Popular culture, especially through its chief agency, the visual mass media, also contributes to law by helping to shape the very processes of thought and perception by which jurors judge and voters vote. Put simply, it is a source of both meaning and the meaning-making tools people use to think and speak with.<sup>40</sup>

Using Sherwin's framework, we can see that the concept of the admixed embryo did not arise in a cultural vacuum. Indeed, the concept of interspecies hybridity has been around for millennia, occurring in folk tales and myths of minotaurs and werewolves and in science fiction tales such as *Alien* (1979) and *The Fly* (1986).<sup>41</sup> In this context, we can see that law, rather than creating the admixed embryo, is re-imagining a familiar concept of popular culture.<sup>42</sup> In this sense, law is drawing upon popular culture, in the process speaking the language of science fiction. Films such as *Alien* and *The Fly*, for example,

although not considering the admixed embryo directly, did consider notions of human-alien-animal hybridity, natality, and the consequent effects. The effects of this hybridity, as posited in *Alien* and *The Fly*, were negative. In keeping with Sherwin's hypotheses, films like these could have both drawn from and propagated (in terms of reconfirming and reestablishing) the cultural unease surrounding admixed embryos and hence ultimately influenced the decision to impose a total ban on interspecies embryos.<sup>43</sup> We witness here, in a very vivid sense, the interpenetration of law and literature, both of which are situated in and constituted by the broader culture.<sup>44</sup>

Part of the uniqueness of science fiction is its ability to take familiar concepts and reinvent them; to place them in an unfamiliar or disturbing, futuristic or technological setting. The familiar concept of the human-animal hybrid is displaced by law into the technological setting of the embryo in the laboratory, and thus into the realm of science fiction. In the process of this displacement, or reimagining, law becomes science fiction.

If we return to our definitions of science fiction, we can see that the HFE Act 1990 has some of the characteristics Melzer identifies as essential to science fiction. The Act focuses on future and, at the time of its drafting, nonexistent, technology.<sup>45</sup> Similarly, returning to Hugo Gernsback's early definition of science fiction, we can see the Act as a mixture of scientific fact and "prophetic vision," as instructive and (arguably) interesting reading, as providing knowledge (of the admixed embryo) in a palatable form and, as we now know, a form not impossible to realize.<sup>46</sup>

As noted above, many representations of law appear within the worlds of science fiction. Often, these worlds reflect our own cultures and, as a consequence, usefully critique contemporary law. There is a general consensus that science fiction allows us to explore, as far as we possibly can, "new social orders and ways of being that differ radically from human existence as we know it."<sup>47</sup> However, I would argue that our imaginations and the language we use are bound to, and are products of, current cultural and social paradigms. Our ability to imagine a future world that is radically different from our own is therefore somewhat curtailed. Indeed, as Jameson notes, "On the social level . . . our imaginations are hostages to our own mode of production (and perhaps to whatever remnants of past ones it has preserved)."<sup>48</sup> Rather than viewing this limitation as a failure of science fiction, we can see it as a positive. Frederic Jameson, for example, highlights the fact that "the treatment of imaginary societies in the best dystopian fiction is always highly relevant more or less

directly to specific ‘realworld’ societies and issues.”<sup>49</sup> King and Krzywinska similarly note that, by drawing on contemporary concerns about technology and scientific endeavor, science fiction gains both relevance and its source of dramatic tension.<sup>50</sup> Baudrillard takes this point further when he notes that science fiction “is most often nothing other than an unbounded projection of the real world of production, but it is not qualitatively different from it.”<sup>51</sup>

It is because of the interpenetration of law and science fiction that the latter can point toward possible deficits or problems within the current law. By doing so, science fiction “and its fantasies of the future provide a critical view of the present.”<sup>52</sup> By distancing itself from, or simply displacing, the real, science fiction can act as a critical commentary on contemporary society. Furthermore, by allowing us to examine potential future legal approaches, it allows us to better see the strengths and inadequacies of the law’s current approach(es).<sup>53</sup> The more science fiction draws upon the concerns, doubts, and ideas of the real world, the more valid these questions become. In a sense, science fiction begins to serve “an essentially epistemological function.”<sup>54</sup>

Science fiction’s relevance to the real world contributes to its position as a popular genre of film and literature, but also increases the likelihood of its being drawn upon by law and the judiciary. This cultural resonance is what generates law’s desire to draw from science fiction. Indeed, to go back to my earlier point, because of this isomorphic relationship, science fiction becomes the source of meaning and the language in which society discusses new legal challenges; by using current concerns to generate their content, works of science fiction can be seen not only as reflections, but also as commentaries upon contemporary society. As Suvin writes, science fiction uses “imagination as a means of understanding the tendencies latent in reality.”<sup>55</sup> This is a view also expounded upon by Telotte, who argues that science fiction

not only provides us with a most appropriate language for talking about a large dimension of technologically inflicted postmodern culture, but also . . . help[s] us make sense of our culture’s quandaries.<sup>56</sup>

Science fiction not only gives us a framework in which to discuss cultural concerns, but also gives us a space in which to consider issues of jurisprudential importance. Through engagement with science fiction, these concerns can then filter back into the public discourse and, ultimately, back into the law.<sup>57</sup>

We can see, therefore, the strongly integrated relationship between law and science fiction.

### **(Inter)Species: Popular Culture, Law, and the Admixed Embryo**

In this section, I wish to further outline the relationship between law and science fiction using the example of the admixed embryo. The science fiction text that I wish to discuss in relation to the creation of admixed embryos is the 1995 film *Species*. I argue that the cultural concerns raised by the creation of admixed embryos were reflected in the film and, subsequently, in the law's approach to these entities.

The Human Fertilisation and Embryology Authority (HFE Authority) reported on the dominant cultural attitudes toward admixed embryos in its response to its public consultation, which revealed that half of those questioned in a public survey disagreed with the creation of admixed embryos for research purposes.<sup>58</sup> Of those questioned, 49 percent were worried “because of what scientists might want to do next in research,” and 47 percent stated that their opposition was grounded in the idea of “meddling with nature.”<sup>59</sup> Many science fiction texts also focus on these same two fundamental concerns. Sharpe considers the reasoning behind these anxieties, noting:

In the specific context of human/animal experimentation, public alarm proves to be an effect of a perceived loss of the distinctiveness of human being, fear over the possibility of cross species disease transmission . . . and moral objection.<sup>60</sup>

All of these concerns are articulated in *Species*. In the film, a signal from Earth containing the mapping of the human genome is returned from space (apparently by some benevolent alien species) with instructions on how to successfully combine human and alien DNA. Scientists then use this information to create an admixed embryo. The embryo rapidly gestates, however, and quickly takes on the appearance of an adult female, named “Sil.”<sup>61</sup> After an attempt to destroy her, Sil breaks free from the scientific research compound where she is being held and embarks on a mission to procreate.

This text raises a number of issues. First, the hybrid looks like a (beautiful) human; her desire to become impregnated would potentially result in hybrid children and species pollution. Humanity itself, therefore, comes under threat from the sexuality of the (monstrous feminine) hybrid.<sup>62</sup> Sil falls into two of

the categories of the monstrous feminine identified by Creed: the “woman as monstrous womb” and the “woman as beautiful but deadly killer.”<sup>63</sup> Furthermore, two of the categories that Sharpe identifies as causing public alarm are realized here: the humanness of the hybrid creates a loss of distinctiveness within the category of the human being, and by painting hybrid children as having pandemic-like consequences, the possibility of disease transmission is raised.

Underlying the film *Species* is a threat of unlocked or repressed female sexuality.<sup>64</sup> A fear of the reproductive female body seems to emerge; Sil’s beautiful outer body is contrasted with her monstrous womb.<sup>65</sup> As Creed notes, the horror film often invokes the “ancient connection between woman, womb, and the monstrous.”<sup>66</sup> Gender, in the case of Sil, is an important part of her monstrosity. Her desire to be impregnated, to reproduce, is a danger to society. Her libido, her sexuality, threatens to unleash a pandemic. The fear of the hybrid child is mixed with the fear of female sexuality, single parenthood, and the breakdown of society. The mixing of human and animal (or in this case, alien) reveals the supposed animal nature of female sexuality.<sup>67</sup> The hybrid represents both the temptress and the killer (the hybrid kills the males once she has mated, or attempted to mate, with them).

In one sense, this mixing of the fear of the admixed embryo with the fear of female sexuality can be blamed on the film, as the titillating nature of the text is clearly intended to result in box office sales. In another sense, however, this mixture perhaps reveals a more general cultural bias that has seeped into the discourse surrounding admixed embryos. Both the admixed embryo and the female body have been characterized as having “a propensity to leak, to overflow the proper distinctions between self and other, to contaminate and engulf.”<sup>68</sup> Within this lack of delineation lies the potential for danger and illegality, and both the female body and the embryo become stigmatized.<sup>69</sup> The dangerousness of the female body and of the embryo are contrasted with the legal ideal of the normative male body, which is characterized by its bounded, impenetrable, and separate nature. Through this feminist lens, we can perhaps see the “moral objection” mentioned by Sharpe in his categories of public alarm as being related to moralistic discourses about gender and sexuality. We can see, therefore, that *Species* plays out some of the public’s concerns regarding admixed embryos, particularly those issues Sharpe identifies as a loss in delineation between the human and other entities, moral objection, and disease transmission between species.

The HFE Authority report also registered public unease around the idea of scientists “meddling with nature.”<sup>70</sup> Again, this concern seems to indicate anxiety surrounding the consequences of hybrid embryos becoming fully gestated.<sup>71</sup> Admixed embryos begin to call the notion of the human into question at a conceptual level.<sup>72</sup>

Some of the possible consequences of failing to prohibit admixed embryos become particularly apparent in *Species*, where the admixed embryo is brought to term. At this point, the conceptual confusion between human and animal becomes most realized. The entity looks human but is not. The rights and personhood associated with “birth” become immediately problematic. From a legal perspective, a major reason to prohibit admixed embryos is so that the law does not have to decide what to do with them once they become fully gestated, since embryos themselves lack legal personhood. Science fiction is able to ignore these prohibitions, and hence forces us to consider the moral and legal status of these entities. As we try to map out the triangulation between science fiction, law, and popular opinion, I will now try to assess the similarities between the ideas and conceptualizations that inform the film *Species* and the current United Kingdom legislation regarding admixed embryos.

### Law Drawing from Science Fiction: the Admixed Embryo

In 2008, changes were made to the way that admixed embryos were regulated in the United Kingdom. Under the HFE Act 2008, human-animal mixing at the cellular level was allowed for nonreproductive research purposes.<sup>73</sup> This was qualified by the proviso that no admixed embryo is allowed to survive past fourteen days.<sup>74</sup> In keeping with the HFE Act 1990, it is still prohibited to place a human admixed embryo, or any gametes other than human gametes, into a woman.<sup>75</sup> It is also still prohibited to place a human admixed embryo into an animal.<sup>76</sup>

Which, if any, of these amendments to the way we regulate admixed embryos did *Species* envisage? In answering this question, it is useful to consider Aristodemou’s view that narratives *create* rather than mirror “our lives, ourselves and our worlds. Whether in law, in literature or . . . in law *and* literature, narratives are not neutral, they investigate but also suggest, create and legislate meanings.”<sup>77</sup> In *Species*, the law allowed for the creation of admixed embryos, but it also set a time limit after which the entity must be destroyed.

In the film, this date was much later than fourteen days, and this more generous time limit allowed for the threat that Sil later posed. The earlier termination date advocated by the HFE Act 2008 avoids this dual threat to both the concept of “human” and the literal survival of humankind as we know it. As Karpin suggests, however, these time limits and prohibitions may not hold for very long. Science fiction, public opinion, and the law are all likely to offer differing conceptualizations of the admixed embryo in the future.

Looking at the differences between the two Acts, 1990 and 2008, we can see a shift in focus from the prohibition of the entity itself to a prohibition of reproduction and natality. This change in emphasis is reminiscent of the anxieties present within the world of *Species*. Although Sil had incredible strength and was a remorseless killer, she was not, *as an individual*, a threat to society; the threat she represented was through the supposed pandemic consequences of her reproductive activities.<sup>78</sup> In this instance, the entity itself was not (at first) prohibited; reproduction, as in the HFE Act 2008, became the prohibited act. Although the U.K. government, in amending the Act, did not directly heed the advice of science fiction, it may have yielded to public distrust as encapsulated in and propagated by texts such as *Species*. To return to the HFE Authority consultation response, 49 percent of individuals questioned disagreed with the creation of admixed embryos because they were worried about what “scientists might want to do next in research”; similarly, 47 percent disagreed from a distrust of scientists “meddling with nature.”<sup>79</sup>

Both of these themes are played out to a large extent within *Species*. As Fox notes, the HFE Authority sought to downplay such worries by suggesting that educating the public about these technologies could alleviate their concerns. The Authority reported, “People who know more about the possibility of creating embryos that contain some human and some animal material are more likely to agree [with the technology].”<sup>80</sup> Indeed, around the time of the debates preceding the HFE Act 2008, many scientists were quick to highlight the fact that their work would not involve bringing an admixed embryo to term.<sup>81</sup> Popular responses to issues such as admixed embryos are often not drawn from law or from science, but rather from popular culture<sup>82</sup> and science fiction. Again, I would like to highlight the political dimensions of popular culture, and consequently science fiction, given that, for many people, access to the legal and political system is mediated wholly through the popular culture lens.<sup>83</sup>



## CONCLUSIONS

In this paper, I highlighted the extent to which science fiction and law are already intertwined, science fiction having been commented on in a number of judicial decisions and law having been a theme in a great number of science fiction texts. Moreover, I argued that science fiction allows for a space where alternate social and legal conditions can be considered. I noted that it is beneficial for law to consider these alternate conditions, given that they are often inspired by popular attitudes. Because science fiction both highlights and propagates prevalent cultural attitudes, law would do well to pay attention to the genre.

In the second part of the paper, the relationships among public discourse, science fiction, and law are neatly played out in relation to the issue of the admixed embryo. By examining the role this entity plays within both law and popular culture, we can begin to develop a better understanding of the cultural anxieties that it creates. Texts such as *Species* both highlight and propagate the cultural concerns that the HFE Authority described in its response to its public consultation, specifically concerns that scientists may go too far, and that perhaps nature ought not to be tampered with in this manner.<sup>84</sup> These anxieties, expressed within the world of *Species*, in turn fed into the HFE Act 2008, resulting in a shift in focus away from a prohibition on the admixed embryo itself and toward a prohibition on its gestation and natality—events that, outside the film, had yet to occur. In this way, science fiction became law, and law science fiction. As Disch notes, “it is increasingly difficult to distinguish between [science fiction] and assorted neighbouring realities,” one of the most important of these “neighbouring realities” being law.<sup>85</sup>

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1. Scott McCracken, *Pulp: Reading Popular Fiction* (Manchester, UK: Manchester University Press, 1998), 123–24.
2. Though this may form a point of tension between law and science fiction, with law being (due to precedent) a primarily backward-looking institution. In a recent article, Marie Fox and Therese Murphy have argued that to future-proof the legislation for the prevention of biotechnology is futile, in that the constant progression of science means that this issue needs constant dialogue. Marie Fox and Therese

- Murphy, "Can Law Facilitate Embryonic Hopes?," 19 *Social and Legal Studies* 4 (2010). I would argue, similarly, that part of this process of renegotiation among science, law, and the public involves a consideration of the fantastical, ideas and conceptualizations that are not currently possible and, therefore, science fiction.
3. Thomas M. Disch, *The Dreams Our Stuff Is Made of: How Science Fiction Conquered the World* (New York: Touchstone, 2000), 1.
  4. Quoted in Damien Broderick, *Reading by Starlight: Postmodern Science Fiction* (London: Routledge, 1995), 7.
  5. Modern-day study of the Pentateuch has revealed that it had a number of authors rather than only Moses. One of them known as "J" is believed to be responsible for the story of Noah and the flood, drawing upon previous Babylonian and Sumerian texts. See P. J. Harland, *The Value of Human Life: A Study of the Story of the Flood* (New York: E.J. Brill, 1996).
  6. Disch, *supra* note 3, at 32.
  7. Darko Suvin, "Estrangement and Cognition," in *Speculations on Speculation: Theories of Science Fiction*, eds. Jamee Gunn, & Matthew Candelaria (Lanham, MD: Scarecrow Press, 2005), 23–36.
  8. Geoff King & Tanya Krzywinska, *Science Fiction Cinema: From Outerspace to Cyberspace* (London: Wallflower, 2000), 4.
  9. Paul Kincaid, "On the Origins of Genre," in *Speculations on Speculation: Theories of Science Fiction*, eds. James Gunn & Matthew Candelaria (Lanham, MD: Scarecrow Press, 2005), 45.
  10. John Clute & Peter Nicholls, *The Encyclopaedia of Science Fiction* (London: Orbit, 1993), 314.
  11. Kincaid, *supra* note 9, at 48.
  12. *Id.* at 52.
  13. Disch, *supra* note 3, at 208.
  14. Suvin, *supra* note 7, at 23. Suvin identified leading industrial nations as the United States, United Kingdom, Japan, and the U.S.S.R. As stated earlier, McCracken notes that science fiction accounts for one in ten books sold in Britain; and in the United States the number is as high as one in four. McCracken, *supra* note 1, at 102. Lately, figures on the sales of science fiction have been hard to come by, not least because some publishers go to great lengths not to market their books as science fiction. See David Bannette, "Science fiction: The genre that dare not speak its name," Jan. 28, 2009, at <http://www.guardian.co.uk/books/booksblog/2009/jan/28/science-fiction-genre> (accessed April 2011). They do so, seemingly, to avoid the accusation that works of science fiction cannot be considered worthy works of literature. Science fiction, instead, is often associated with "hack" writers and clichéd storylines.
  15. Patricia Melzer, *Alien Constructions: Science Fiction and Feminist Thought* (Texas: University of Texas Press, 2006), 2.
  16. *Id.* at 2.
  17. *Id.* at 3.
  18. Suvin, *supra* note 7, at 27, italics removed from original.
  19. This has led some to question the boundary between science fiction and reality. See, e.g., Donna J. Haraway, *Simians, Cyborgs and Women: the Reinvention of Nature* (London: Free Association Books Ltd., 1991); J. G. Ballard, *Crash* (New York: Vintage, 1985).
  20. In this article, I rarely distinguish between film and literary texts. This is partly because the value of these texts, for the purposes of my analysis, lies in their portrayal of cultural opinions rather than in their specifically literary or filmic properties.
  21. Andrew Sharpe, *Foucault's Monsters and the Challenge of Law* (Oxon, UK: Routledge, 2010), 138.
  22. Maria Aristodemou, *Law and Literature: Journeys from Her to Eternity* (Oxford: Oxford University Press, 2000), 4.
  23. Terry Threadgold, "Lawyers Reading Law/Lore as Popular Culture: Conflicting Paradigms of Representation," in *Romancing the Tomes: Popular Culture, Law and Feminism*, ed. Margaret Thornton (London: Cavendish Publishing, 2002) 23–46.

24. See for example *Lucasfilm Ltd. v. Ainsworth*, [2008] EWHC 1878 (Ch.); or *Dormeuil Freres SA v. Fera-glow*, [1990] R.P.C. 449.
25. *R. v. TS*, [2008] EWCA Crim. 6.
26. *R. v. Sears (Andrew Robert)* [2003] EWCA Crim. 367.
27. *Knott v. Haden Maintenance Ltd.* [1998] C.L.Y. 1521; and *W v. Egddell*, [1990] Ch. 359.
28. McCracken, *supra* note 1, at 102.
29. Movieweb.com, “All Time Top 1000 Grossing Films,” at <http://www.movieweb.com/movies/box-office/alltime.php>; and Wikipedia, “List of highest-grossing films,” T [http://en.wikipedia.org/wiki/List\\_of\\_highest-grossing\\_films](http://en.wikipedia.org/wiki/List_of_highest-grossing_films) (accessed April 2011). This list includes *Star Wars Episode IV—A New Hope* (1977), *E.T. the Extra Terrestrial* (1982), *Star Wars: Episode I—The Phantom Menace* (1999), *Star Wars: Episode III—Revenge of the Sith* (2005), *Jurassic Park* (1993), *Transformers* (2007), *Iron Man* (2008), *Indiana Jones and the Kingdom of the Crystal Skull* (2008), *Independence Day* (1996), *Star Wars: Episode V—The Empire Strikes Back* (1980), *The Matrix Reloaded* (2003), *I Am Legend* (2007), and *Men in Black* (1997). This list does not include fantasy films such as the *Lord of the Rings* and *Harry Potter* series, nor does it include films that draw upon science fiction only marginally such as the *Spider-man* or *Batman* films.
30. *Hiram Walker & Sons Inc. v. Drambuie Liqueur Co.*, [1998] S.L.T. 771.
31. It has been widely noted, for example, that one of the first texts to discuss cyberspace was William Gibson’s *Neuromancer* (New York: Ace Books, 2004), although as he wryly notes in the foreword to the twentieth anniversary edition, he did not foresee the growth of mobile phones.
32. *Rank Hovis McDougall Ltd. v. Controller of Patents, Designs and Trade Marks*, [1978] F.S.R. 588, where Justice McWilliam considered: “Although current science fiction indicates that a time may come when living things will be manufactured by man and therefore would be patentable under the 1964 Act, it does not follow that, because a substance has been produced by man it has, necessarily, been manufactured within the meaning of the statutes.”
33. *Tyrer v. United Kingdom*, [1979–80] 2 E.H.R.R., where it was noted that “it goes without saying that judicial corporal punishment involves the infliction of physical violence by one person on another: even science fiction has not yet pictured a world in which it is inflicted by machines.”
34. *Re A Ward of Court*, [1995] Nos. 167, 171, 175, 177, which drew upon the American case of *Mitchell v. Fleming*, 154 Ariz. 207, 741 P.2d 674 (1987), to state: “Not long ago the realms of life and death were delineated by a bright line. Now this line is blurred by wondrous advances in medical technology—advances that until recent years were only ideas conceivable by such science-fiction visionaries as Jules Verne and H. G. Wells. Medical technology has effectively created a twilight zone of suspended animation where death commences while life, in some form, continues. Some patients, however, want no part of a life sustained only by medical technology. Instead, they prefer a plan of medical treatment that allows nature to take its course and permits them to die with dignity.”
35. Aristedemou, *supra* note 22, at 11.
36. Marie Fox, “Tinkering at the Margins,” 17 *Feminist Legal Studies* 333–44, 337 (2009).
37. Isabel Karpin, “The Uncanny Embryos: Legal Limits to the Human and Reproduction without Women,” 28 *Sydney Law Review* 599 (2006).
38. Richard Posner, *Law and Literature* (London: Harvard University Press, 1998); and Richard K. Sherwin, *When Law Goes Pop* (London: University of Chicago Press, 2000).
39. Chandra Mukerji & Michael Schudson, *Rethinking Popular Culture: Contemporary Perspectives in Cultural Studies* (London: University of California Press, 1991), 37.
40. Sherwin, *supra* note 38, at 18.
41. As Sharpe contends, concerns regarding the legal regulation of monsters have heightened over time. As he notes, “in the context of an English legal history of monsters this type of anxiety is most evident not in the mid-thirteenth century legal texts of Bracton . . . and Britton . . . , but in Blackstone . . . and therefore in the period of the Enlightenment.” Sharpe, *supra* note 21, at 130.

42. Of course part of the science fiction interest comes from the juxtaposition of that which is familiar (animals, embryos, science) with that which is unfamiliar (bringing an admixed embryo to term).
43. The language of science fiction informs the “popular unease” with these entities articulated by the tabloids; for example, “Moo-tants” and “Humanzees” were the tabloid names coined for cow/human admixed embryos and chimpanzee/human admixed embryos, respectively. See Mark Henderson, “Ministers have been spooked by ‘frankenbunny’ headlines,” *Sunday (London) Times*, Jan. 5, 2007, at <http://www.timesonline.co.uk/tol/news/article1289677.ece>; or BBC News, “Live: MPs on ‘Chimera’ Embryos,” Jan. 30, 2007, at [http://news.bbc.co.uk/1/hi/programmes/bbc\\_parliament/6314955.stm](http://news.bbc.co.uk/1/hi/programmes/bbc_parliament/6314955.stm) (accessed April 2011).
44. Sherwin, *supra* note 38; and Aristodemou, *supra* note 22.
45. Melzer, *supra* note 15, at 2.
46. Gernsback, quoted in Broderick, *supra* note 4, at 7.
47. Melzer, *supra* note 15, at 2.
48. Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (London: Verso, 2005), xiii.
49. Quoted in M. Keith Booker, *The Dystopian Impulse in Modern Literature: Fiction as Social Criticism* (Westport, CT: Greenwood Press, 1994), 18–19.
50. King & Krzywinska, *supra* note 8, at 4.
51. As well as that “science fiction . . . can only exhaust itself, in its artificial resurrection of ‘historical’ worlds, can only try to reconstruct in vitro, down to the smallest details, the perimeters of a prior world, the events, the people, the ideologies of the past, emptied of meaning, of their original process, but hallucinatory with retrospective truth.” Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser (Ann Arbor: University of Michigan Press, 1994; Éditions Galilée, 1981), at 123.
52. Jenny Wolmark, *Aliens and Others* (Iowa City: University of Iowa Press, 1994), 8.
53. Although as Jameson notes, “[It is the] very distance of culture from its social context which allows it to function as a critique and indictment of the latter also dooms its interventions to ineffectuality and relegates art and culture to a frivolous, trivialized space in which such intersections are neutralized in advance.” Jameson, *supra* note 48, at xv. This distance, therefore, is both a boon and burden to the use of science fiction and law.
54. *Id.* at xiv.
55. Suvin, *supra* note 7, at 27.
56. J. P. Telotte, *Science Fiction in Film* (Cambridge: Cambridge University Press, 2001).
57. Sherwin, *supra* note 38, at 18.
58. Fox, *supra* note 36. Human Fertilisation and Embryology Authority (hereinafter, HEF Authority), *Hybrids and Chimeras: A report on the findings of the consultation, 2007*, App. F, para. 11: The survey was commissioned with the ICM research company in July 2007, and used a sample of 2,073 adults. The HFE Authority is a government institution created by the HFE Act 1990 to monitor issues surrounding and public responses to fertilization and embryology.
59. HFE Authority, at App. F, para. 15. Also consider: “[G]overnment recognition of public anxiety concerning the fusion of human and animal tissue generally is apparent in a change of terminology. Specifically, the phrase ‘human admixed embryo’ appears for the first time when the bill is reintroduced into the House of Lords on 29 January 2008. When the Bill was first introduced on 9 November 2007, the preferred language was ‘inter-species embryo.’” Sharpe, *supra* note 21, at 134–137.
60. Sharpe, *supra* note 21, at 134.
61. This bears an interesting resemblance to Sharpe’s observations on monsters. As he notes, “conceptually, there is little difference between monsters born of bestiality and those conceived in the laboratory. In both instances the monster is thrown into the world fully formed.” Sharpe, *supra* note 21, at 140.
62. Barbara Creed, *The Monstrous Feminine: Film, feminism, psychoanalysis* (London: Routledge, 1993).

63. *Id.* at 1.
64. Which is itself as old as science fiction in film; Maria in the 1926 film *Metropolis*, for example (for a discussion of this, see Michael Thomson, *Regulating the Male Sexed Body* (Oxon, UK: Routledge, 2008), 47–71.
65. Creed, *supra* note 62, at 43.
66. *Id.*
67. There may be some differences between perceptions of the human/animal and human/alien admixed embryo. However, for the purposes of this paper I think they can be put to one side. The similarities, particularly their location as other, are the focus.
68. Janet Price & Margrit Shildrick, “Openings on the Body: A Critical Introduction,” in *Feminist Theory and the Body: A Reader*, eds. Janet Price & Margrit Shildrick (Edinburgh, UK: Edinburgh University Press, 1999), 1–14.
69. Ngaire Naffine, *Law’s Meaning of Life: Philosophy, Religion, Darwin and the Legal Person* (Oxford: Hart Publishing, 2009), 144–59.
70. HEF Authority, *supra* note 58.
71. Although the appeals to nature may seem oxymoronic when we consider that they point toward a socially constructed species boundary between humans and other animals. See Donna J. Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (London: Free Association Books Ltd., 1991), 151–52.
72. Sharpe, *supra* note 21, at 129.
73. HFE Act 2008 s. 4 A (2).
74. HFE Act 2008 s. 4A(3)(b). Although it is unlikely an embryo would last past 14 days; so far “no research embryos have been developed as far as that maximum.” The Hon. Alan Johnson, the Secretary of State for Health, House of Commons, Hansard Debates, 12 May 2008, Column 1068.
75. HFE Act 2008 s. 4 A (1) (c).
76. HFE Act 2008 s. 4 A (4).
77. Aristodemou, *supra* note 22, at 2–3.
78. And in addition, perhaps, her awakening feminine sexuality. The character Laura questions during the film whether her predatory instincts come from her alien genes or her humanity.
79. HFE Authority, *supra* note 58, at App. F, para. 15.
80. Fox, *supra* note 36; HFE Authority, *supra* note 58, at App. F, para. 19.
81. See the report of the House of Commons Science and Technology Committee: “It is important to distinguish between the creation of a human embryo incorporating animal material that will not exist beyond 14 days, from the possibility of bringing such an embryo to term. . . . For good reasons implanting such an embryo into a woman is illegal in the UK, and we don’t want to see this changed.” House of Commons Science and Technology Committee, 2007, para. 8.3.1. However, we can compare the modest number of people who may have read the HFE Authority’s report on admixed embryos with the \$113,374,103 that *Species* grossed at the box office; <http://www.boxofficemojo.com/movies/?id=species.htm>. Looking at these figures, perhaps we can begin to see the dynamics between science fiction and law.
82. Sherwin, *supra* note 38, at 18; Posner, *supra* note 38, at 29.
83. Sherwin, *supra* note 38; Posner, *supra* note 38.
84. Again, these texts include, but are not limited to, *Splice*, dir. Vincenzo Natali (Copperheart, 2009); Alastair Reynold, *Redemption Ark* (New York: Ace Books, 2002); Margaret Atwood, *Oryx and Crake* (New York: Nan A. Talese, 2003); Margaret Atwood, *The Year of the Flood* (New York: Nan A. Talese, 2009); *The Island of Dr. Moreau*, dir. John Frankenheimer (New Line Cinema, 1996).
85. Disch, *supra* note 3, at 1.