Rethinking the Political / -Science- / Fiction Nexus: Global Policy Making and the Campaign to Stop Killer Robots

Charli Carpenter

A burgeoning literature in IR asserts there is a relationship between pop cultural artifacts and global policy processes, but this relationship is rarely explored using observational data. To fill this gap, I provide an evidence-based exploration of the relationship between science-fiction narratives and global public policy in an important emerging political arena: norm-building efforts around the prohibition of fully autonomous weapons. Drawing on in-depth interviews with advocacy elites, and participant-observation at key campaign events, I explore and expand on constitutive theories about the impact of science fiction on "real-world" politics.

In late 2012, Human Rights Watch (HRW), a key organization in the humanitarian disarmament network, launched a report opposing the deployment of fully autonomous weapons entitled *Losing Humanity: The Case against Killer Robots.*[1] Interest in the issue exploded through global disarmament networks. In April 2003, the NGO "Campaign to Stop Killer Robots" launched on the steps of Parliament in London, touted as the next big thing since the landmines and cluster munition campaigns. All this happened despite the fact that fully autonomous weapons had still not yet been deployed or widely developed and remained, in essence, speculative "fiction" rather than fact.

Many observers of this movement have argued that the campaigners draw on techno-phobic messaging from popular science-fiction films and television shows.[2] Media coverage of the campaign has featured still photos from *Terminator* and *Battlestar Galactica*. A graduate student researcher at the NGO meeting for the campaign launch in 2013 told me she counted dozens of science fiction references among the campaigners buzzing around the Amnesty International offices where the NGOs met to work out a strategy for a very real campaign. Yet at the same time, campaigners went to pains to avoid such references in their official documents, insisting on the real and present danger posed by genuine developments in military technology.

What exactly does the history of this emerging civil society campaign tell us about the relationship between science fiction as a set of counter-factual narratives about world order and world politics as it is constituted in present-day reality?[3] Science fiction and fantasy are increasingly invoked by policy elites in service of arguments about the real world, but to what extent

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and through what mechanisms do these tropes shape political outcomes? More importantly, how might we know?

Though there is a burgeoning scholarship on "science fiction and international relations," the existing literature offers very little in the way of answers to *these* sorts of questions. Most political scientists who write about sci-fi/IR offer either interpretive analysis, reading science-fiction "texts" through IR theory lenses or pedagogical treatments aimed to help students or policymakers comprehend real-life policy through fictional metaphors.[4] Many of the studies that do attempt to explain what Jutta Weldes famously called the "sci-fi/IR 'intertext'" are long on assertions about discourse but short on observational analysis of everyday politics.[5] Scarce are data-based studies that empirically examine the circulation of popular culture in actual political processes using scientific methods for analyzing causal or constitutive social relations.[6]

My central argument is that such studies, undertaken through the same research methods we use to explore other facets of global policy-making, could add value to what we think we know about the influence of science fiction/fantasy (or popular culture generally) on global policy. To illustrate this argument, I explore an important emerging political arena—norm-building efforts around what activists currently refer to as "fully autonomous weapons"—using the same elite interviewing and participant-observation methods by which I have previously studied the circulation of other social ideas in human security advocacy networks. While my analysis is a plausibility probe rather than a definitive answer to these bigger questions, I hope to demonstrate the kinds of issues that a rigorous social scientific research agenda on popular culture and international relations could address.

I begin by distinguishing the explanatory approaches to the science-fiction/global politics nexus I wish to encourage from the interpretive or pedagogical work so characteristic of this burgeoning research niche; and I describe a set of research questions that could be addressed in a more data-driven way. Next, rather than contributing an interpretation of the meanings of killer-robot fiction for politics, or showing how contemporary politics is implicated in those narratives, I explore whether and how these meanings impact actual policy development in the area of disarmament norms. I do so using observational data on the discourse and strategic decision-making of campaigners aiming to ban the use of autonomous weapons in armed conflict.

My analysis suggests that while transnational activists have not necessarily been *causally* influenced by killer-robot fiction in the way commentators sometimes assume (in fact rather the reverse), such cultural memes certainly do help *constitute* the socio-political context in which campaigners must navigate to be effective. In particular, my interview data points to an effect overlooked in earlier literature: the role of science-fiction/fantasy discourse as a social lubricant among divergent and often highly contested policy communities. I also argue that under some circumstances, science fiction, far from "enabling" policy as much literature assumes, can instead exert a "disabling" effect on global norm development. Ultimately, this case demonstrates the value of treating assumptions about popular culture's relationship to politics as hypotheses to explore, rather than interpretations to assert.

Studying the Sci-Fi/World Politics Nexus

Studies of and commentaries on popular culture and foreign policy have exploded in recent years, from edited volumes to popular textbooks, to articles placed in elite beltway foreign policy journals. Among these, science fiction and fantasy (SFF) are said to have particular qualities as they encourage the audience to think in terms of societal counter-factuals.[7] In particular, the branch of science fiction dealing with the relationship between scientific change and society—what Isaac Asmiov termed "social science fiction"[8]—addresses, and seeks to both criticize and influence, political and social controversies of the day.[9] Yet scholarship on how such cultural artifacts actually impact real-world political activity is only now emerging. As I show next, observational research is much needed to fill that gap.

Political / Science / Fiction: Three Approaches

Approaches to science fiction/fantasy and international relations have so far tended to fall into one of three broad categories. First is a *pedagogical approach*, what Neumann and Nexon refer to as "popular culture as mirror."[10] Here, science-fiction or fantasy literature is used as a way to present international relations theory in a fun and accessible way to a popular audience better versed in *Star Wars* than in factual historical references. Daniel Drezner's *Theory of International Politics and Zombies* falls into this category, for example, and has become a best-selling companion to standard IR textbooks for undergraduates since its release in 2010. Abigail Luane and Patrick James' *The International Relations of Middle Earth* is similar in that *Lord of the Rings* is used to exemplify what various international-relations theories presumably have to teach us about how to analyze war and politics. Stephen Benedict Dyson's *Otherwordly Politics* blends analyses of realism in *Game of Thrones*, liberalism in *Star Trek,* and crisis theory in *Battlestar Galactica* to present popular culture as the ultimate teaching tool.[11]

This "pedagogical" approach is also often found in articles on teaching in the profession, particularly on how

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to utilize popular film in the classroom: Webber, for example, writes about how the first contact film *Independence Day* can be used to teach various international-relations theories.[12] Priya Dixit tells us about the value of *Dr. Who* as both an example of how actors construct threats and demonize "others" and also a useful opportunity to help students critique these very tendencies.[13] The pedagogical approach is also frequently deployed by scholarly authors to communicate IR concepts to foreign policy elites and the informed public. Sometimes narratives are used as an allegory, as when Carpenter argued that *Games of Thrones* is meant to be understood as a human-security-minded text rather than a realist parable.[14] Sometimes the narrative functions to illustrate facts by contrasting them to fiction, as when Peck discusses the techno-politics of aircraft carriers through references to the anti-realism of *Battlestar Galactica*.[15] In each case, the use of pop culture metaphors is meant to function as a teaching tool to say something either metaphorically or counterfactually about how political reality functions.

Yet for all their illustrative value, and for all that is assumed about their influence on audiences, such analyses do not help understand the real impact of fictional narratives on politics and society. Although one assumes that the audience for these articles might draw some understanding from the fictional artifacts and apply it to understanding or engaging real world politics, the pedagogical analyses themselves do not investigate whether or not that actually happens: Dyson's "big questions about international politics" for which *Star Trek* is presumably a useful tool do not include the extent to which *Star Trek* as a cultural phenomenon has itself impacted "real history."

A second major strand literature of sci-fi/fantasy and IR views pop culture artifacts not as pedagogical substitutes for historical analogies but rather as political texts in themselves. This *interpretive* strand of scholarship sees pop culture as a lens for understanding "how societies think about themselves" and thus examines films, TV shows, comic books, video games, and literature for implicit messages about identity, norms, and geopolitics in counter-factual situations.[16] Such authors "read" science-fiction films, TV shows, and literature as political theory texts themselves, and interpret their messaging for a scholarly audience.[17] The objective here is to analyze the cultural meanings in popular culture as "data" on social understandings or political narratives, rather than exploring the reverse: how culture informs political reality.

Many of these works do tie the representations in the cultural artifacts to real-world political debates: the "second-order" representations in popular culture are seen as a reflection of the "first-order" world, filtered through a fictional layer.[18] For instance, in a canonical edited volume by Ron Hassner and Clyde Wilcox, *New Boundaries in Political Science Fiction,* Darko Suvin examines how war militarism in Cold War science fiction reflected the socio-political context of the Ford era;[19] and Lincoln Geraghty analysed how post-9/11 politics was reflected in the ideational shifts between consecutive series in the *Star Trek* franchise.[20] Similarly, studies have analyzed how representations in popular culture have been influenced by developments in human rights norms[21] or technological progress.[22] But these works do not tend to examine the reverse: how, if at all, the representations in second-order texts feed back into political processes or first-order representations in the real world.

A third approach is emerging, however: what I call the *explanatory approach*. In theory, studies in this category would treat science fiction/fantasy as an explanatory factor in politics and examine its impacts on real-world political action, events, or categories of meaning, or on *non*-fictional representations of those events and meanings in political speeches, print journalism, and political commentary. Scholars in this area have put forth arguments about both the causal and constitutive impacts of science fiction and fantasy on real-world politics.

In their helpful framing chapter to the canonical 2006 *Harry Potter and International Relations,* for example, Daniel Nexon and Iver Neumann speak of causal research on popular culture's effect on the world as "one of the most straight-forward ways to study the intersection between popular culture and world politics."[23] Although causal analyses are far fewer in number than interpretive or pedagogical approaches in IR scholarship on fantasy and science fiction, a few examples do exist. Some literature has focused on pop culture artifacts as localized or globalized commodities, emphasizing the production and dissemination process as embedded and implicated in process of globalization.[24] Fluency in specific popular-cultural artifacts can also have a causal effect on the political values of those who consume it. For example, Anthony Gierzynski combined an interpretive reading of the messaging in the *Harry Potter* series with survey research on college students who had read or not read it, to find the political values of fans indeed differed from non-fans in ways consistent with the messaging in the series.[25]

Far more common than causal analyses in explanatory IR scholarship on science fiction, however, are what Neumann and Nexon refer to as "constitutive" analyses of popular culture as a deeper cause of political action. The idea of "constitutive effects" draws on constructivist arguments about the role of norms, ideas, and identities "constituting" the framework of socio-political reality in which actors operate.[26] Whereas causal analysis traces temporal relations of cause and effect, constitutive analysis is about the determining the nature of social facts as they relate to other social facts: masters and slaves, for example, are meaningful concepts only in relation to one another—though these constitutive relationship can also exert causal effects on actors' behavior.[27] Similarly, international

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"norms" like sovereignty or the taboo against nuclear weapons have both causal effects (when they regulate behavior) and constitutive effects when they create new categories of meaning ("nation-state" or "weapons of mass destruction").[28]

According to constitutive analyses, popular culture can "actively shape first-order representations and thus play a far more important role in the actual conduct of world politics."[29] This builds on Weldes' argument that "science fiction is not just a window onto an already pre-existing world . . . science fiction texts are part of the processes of world politics themselves: they are implicated in producing and reproducing the phenomena that [pedagogical and interpretive approaches] assume they merely reflect."[30]

In particular, popular culture, it is argued, can exert a constitutive "informing" effect on political thought or action by priming societies to think in specific ways about social categories such as "robots" or "space travel."[31] According to Neumann and Nexon, an "informing" effect occurs where "popular culture provides diffuse knowledge that people bring to bear on political issues."[32] This diffuse effect has been asserted widely in the literature, particularly with respect to mass phenomena such as *Star Trek* and their impact on the U.S. space program, for example.[33]

But studies into the constitutive effects of popular culture have not fully explored *how* they matter for international politics. For example the diffuse "informing" role of pop culture is sometimes said to produce either a "naturalizing" or an "enabling" effect on political behavior. In the former case, this refers to popular culture's role in making a politically-constructed reality seem inevitable and normal.[34] In the latter, it provides culturally-resonant repertoires of action on which savvy political actors can presumably then draw to persuade audiences.[35]

Yet observational studies on how these effects work in and through political processes to are rare, and logical puzzles remain. "Informing" effects of science fiction / fantasy in politics are simple enough to demonstrate of course: when NASA names its space shuttle the *Enterprise,* or the White House puts out satirical press releases on whether it will fund the construction of a Death Star, it is clear that popular culture has "informed" these actions or made them sensible by constituting a context in which they are meaningful to audiences. But what political power do such speech acts convey? Few case studies convincingly show how science fiction references alone "enabled" a policy that would have been less likely in its absence, or that individuals exposed to certain science-fiction narratives are likelier to support such policies than those not so "primed." Similarly, I know of few IR studies that explore whether the "naturalizing" effect asserted by such scholarship varies, for example, between consumers of a specific artifact versus those who have never consumed it.

As Alexander Wendt famously pointed out, "constitutive theories must be judged against empirical evidence just like causal ones."[36] However, research claiming to make constitutive claims about science fiction's "naturalizing" or "enabling" impacts on the real world often rely—as does interpretive and pedagogical work—primarily on the interpretation of the researcher, rather than establishing such effects through observational data on participants in first-order political debates and processes. Neumann's analysis of geography in *Harry Potter*, for example, advances an argument about how "space is naturalized" through the text—but unlike Gierzynski's study of political values, Neumann does not empirically examine how or whether this naturalizing effect in fact affects readers' views of political reality. Similarly, Gittmer refers to *Captain America* as "constructing" U.S. foreign policy, but his analysis focuses solely on the way in which U.S. foreign policy impacts the content of comic strips, not the other way around.

A 2013 edited collection on *Battlestar Galactica and International Relations* acknowledged this shortcoming in the field and pledged to take a more systematic, empirical look at the impact of sci-fi on the real world: the framing chapter promised to examine the "circulation of socially constitutive energies between [science fiction] *and* our own social world."[37] However the book, like its predecessors, ended up including predominantly interpretive chapters—chapters focused on political representations within the show rather than ways in which those representations feed back, if at all, into global social life—with assertions about the latter largely unsubstantiated by empirical research on the deployment of pop culture by political actors.[38]

For example, Mikkel Vedby Rasmussen's chapter compares narratives in Battlestar Galactica (BSG) to narratives among military bloggers about life in Iraq, but does not provide empirical support for the argument—asserted near the start of his chapter—that the show itself "set the stage" for (enabled) the debate on the Iraq War in the United States at that time.[39] Jon Bohland discusses the influence of post-9/11 politics on the creators of BSG, but not the reverse: his analysis of genocide imagery in the show spends no time exploring whether these representations of genocide specifically informed political discussions around human security in the real world.[40] Nor was this dearth of explanatory analysis lost on the book's critics: Peter Henne and Daniel Nexon pointed out in their concluding chapter that "few of the chapters in this book center on how BSG impacts politics in our own world."[41]

Toward an Explanatory Social Science of Poli-Sci-Fi

It is important to emphasize that interpretive work on popular culture is highly valuable in its own right. Interpretivism helps us think critically about the origins and impacts of messaging in cultural products, and suggests hypotheses about how they might influence political thinking—hypotheses amenable to exploration through more conventional research methods.

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If we stop there, though, we leave open questions about the political importance of these second-order cultural scripts. We also leave our genre open to the conclusion drawn by Henne and Nexon in their critique of the BSG volume, that perhaps such artifacts in fact have less effect on the "real world" than IR scholars wish to imagine. Therefore, if political scientists are to take the constitutive as well as causal effects of pop culture on politics seriously, then scholars purporting to use an explanatory approach must dig deeper than their pedagogical and interpretive counterparts for at least three reasons.

First, it's not at all clear that actors draw the "lessons" from science fiction that pedagogical scholarship tries to teach, or the "interpretations" from it that scholarly lenses imagine—so an over-commitment to one's analytical "readings" of an artifact can inhibit a careful observation of their actual impacts. Indeed hypotheses about these impacts vary widely: Drezner argues that zombies are a useful teaching metaphor; but Hannah and Wilkinson argue that teaching IR through zombie literature is likely to lead to gender stereotyping, othering, and essentialization.[42] Who is right? Only analyses of the actual impact of these teaching tools on student learning can tell us.

Second, it is far from clear that popular culture "naturalizes" things in the same way for all audiences, so sweeping claims about "naturalizing effects" need empirical verification. Indeed, testing these assumptions empirically often leads to fresh insights. In a working paper on *Game of Thrones* presented at the International Studies Association, for example, Scott Watson demonstrates that interpretations of the show vary widely between academics, commentators writing for mainstream print periodicals, and laypersons writing on internet forums.[43] Particularly where an artifact can be read multiple ways, it cannot be assumed that analytical "readings" of a film or television show as "political text" necessarily tell us anything about how political stakeholders are "reading" the same artifact.

Third, while existing research suggests popular culture does inform political reality, our understanding of whether and how this matters remains vague and unrefined. Pointing out that popular culture gets deployed in politics is an insufficient basis for making inferences about what political effect those deployments have. *What* precisely do these invocations "enable?" How is political reality different than it would be in their absence? Can science fiction/fantasy and other pop culture artifacts constrain as well as enable? How do stakeholders maneuver among these cultural constraints? How does popular culture matter, if at all, in political processes themselves, as opposed to political discourse? How might it shape social relations among political actors and why?

Killer Robots: A Puzzle for Existing Theory

The killer-robot puzzle demonstrates these several limits of existing analytical approaches. First, in the case of the killer robot campaign, what the essential message of science fiction about armed robots *ought* to be for policy stakeholders is not nearly as obvious as some commentators would claim. Indeed, a critical "reading" of science-fiction narratives about weaponized AI might easily lend credence to arguments that, if properly programmed, they could be a boon to humanity: the examples of the Good Terminator and phaser-armed Lieutenant Commander Data sit iconically in the U.S. political imagination alongside HAL 2000 and the Cylons.[44] Given the diversity of representations of armed robots in science fiction, and the fact that much science fiction errs on the side of moral ambiguity rather than clear-cut robopocalyptic messages, it is a puzzle why certain pop culture narratives and not others become entangled in policy discourses.

Second, the appearance of a sci-fi/fantasy connection to a political discourse does not alone tell us *why* that discourse is being used, by whom, for what political motivations, or how it is working. On the one hand it is easy to observe a fictionalized robopocalyptic discourse in media framing of the autonomous weapons issue: media reports on the campaign and on autonomous weapons almost uniformly include photographs of the Terminator, the Cylons, or Robocop.[45] By the analytical standards of this field, such an analysis alone would be sufficient to demonstrate a "circulation" of robopocalyptic science-fiction tropes on the autonomous weapons policy domain. But if this constitutes an "informing" effect, who is informing who about what, how, and why? More importantly, how, if at all, does it matter for the development of real-world policy around autonomous weapons?

Finally, why do these outcomes vary across time, political actor, and artifact? Robopocalyptic science fiction has been around for decades, and scientific experts were concerned with the ethical implications of emerging autonomy in weapon systems since at least 2007—during precisely the period when the *Terminator* sequels and rebooted *Battlestar Galactica* series were captivating audiences with techno-dystopian fears. Yet for five years these political entrepreneurs could not convince mainstream humanitarian organizations to address the issue.[46] Indeed, during that time, far from "enabling" advocacy, humanitarian disarmament insiders prior to 2012 said the "science fiction quality" of the autonomous-weapons issue actually made it a *least* likely candidate for serious attention by humanitarian organizations.[47] Nonetheless, by mid-2013, the "Campaign to Stop Killer Robots" was being promoted as a serious project: the "giggle factor" described by previously-skeptical humanitarian campaigners had been converted from agenda-setting impediment to campaign resource. What changed, and how?

To explore these puzzles, we need research that takes seriously not simply the messaging in popular culture artifacts, or the way those artifacts circulate and are deployed in political life, but also the reasons they do so,

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and their effects, if any, on global processes. Rigorous case studies, participant-observation research, process-tracing, surveys, and experimental research have been used in other areas of international relations to identify and measure the constitutive as well as causal effects of ideas. Applied to the study of popular culture and IR, these methods could complement the fascinating interpretive analyses already so ubiquitous in this field.

This view follows Grayson, Davies, and Philpott, who have argued five years ago that a research agenda on pop culture and IR should go beyond interpretation and examine "how particular audiences *actually* interpret what could be considered politicized content" or "how political actors seek out conduits in more recent forms of popular culture and for what specific purposes."[48] They suggest a rich explanatory research agenda on the circulation of these narratives and metaphors among real-world global policy elites. They also argue that conventional social science methods could be a fruitful method of inquiry into the circulation of such energies between fictional and real-world politics.

In the rest of this paper I illustrate what is to be gained by digging deeper in such a way, through a closer empirical analysis of the anti-killer robot campaign. My aim is to go beyond examining robopocalyptic films as political texts, drawing policy lesson from their metaphors, or pointing out the deployment of science-fiction metaphors in the "killer robot" debate. Rather, I look to the effect of "science fiction" as a cultural concept, and robopocalyptic fiction specifically, on the preferences and strategies of campaigners and stakeholders involved in the debate over autonomous weapons. From this perspective, pedagogical and interpretive texts become artifacts themselves in datasets meant to uncover the effect of such first-order interpretations of second-order representations on first-order political phenomena. By doing so, I reach conclusions rather more complex than those put forth by earlier investigations.

Primary data for this project was gathered from two sources. First, I combined interviews with advocates on both sides of the autonomous weapons debate in the five years prior to and twelve months since the launch of the campaign with content analysis of campaign materials to ascertain the extent to which science-fiction narratives inhibited, provoked, or influenced the frames used in the campaign.[49] Second, I draw on two years of participant-observation with movement activists online and at several key events in the history of the Campaign to Stop Killer Robots to better understand how sci-fi references informed, enabled, naturalized, negated or triggered transnational political activity in this area.[50]

While I did not find convincing evidence that campaigners were causally influenced by science fiction, the fluency of the public and stakeholders in science fiction metaphors did constitute a salient aspect of the deeper cultural context in which anti-AWS (autonomous weapon systems) campaigners operated, and this exerted a variety of constitutive effects on campaign strategy and identity. But the more interesting question is *how*. I show that the impacts of pop culture on the campaign go beyond the predictions of existing theory, exerting not only enabling but also disabling effects, and informing not only the constraints in which the campaign operated but also the social relations among campaigners themselves.

Science Fiction and the Campaign to Stop Killer Robots

Fully autonomous weapon systems are a category of weapons system currently under development that would, if fully realized, have the ability to identify and select targets without the involvement of a human operator.[51] Unlike the current generation of teleoperated drones, which have a human in the loop, AWS would remove human controllers from lethal decision-making altogether. Precursors to such systems already exist in the form of the Phalanx gun, the C-RAM, and sentry robots in the South Korean demilitarized zone and Gaza strip; Britain has unveiled the Taranis drone, which has the potential to target autonomously if deployed as such.[52] In November 2012, the U.S. Department of Defense released a policy directive on autonomous weapons stating that a human should generally remain "in the loop" but which included a number of loopholes that could allow fully autonomous targeting.[53] In response to these developments, a network of NGOs has mobilized to stop what they see as a slippery slope toward an inhumane automation of warfare.[54]

The Campaign to Stop Killer Robots is the latest in a series of transnational advocacy campaigns in the area of humanitarian disarmament.[55] It has its origins in the efforts of norm entrepreneur and roboticist Noel Sharkey to generate an international discussion on a code of conduct for lethal robotics.[56] Sharkey pressed his cause through the media and his academic networks, and ultimately co-founded an expert association whose aim was to commence a global discussion on the perils of autonomous weaponry. Beginning in 2012 this International Committee on Robot Arms Control attracted the attention of NGO activists—first Article36.org, a new humanitarian disarmament NGO, and then Human Rights Watch, a heavyweight in the issue area of human rights and humanitarian law.

Human Rights Watch launched a campaign against autonomous weapons in April 2013 that quickly attracted NGO followers and began exacting a response from governments. In fall 2013 the issue of autonomous weapons was taken up first at the United Nations Disarmament Committee and then by at the Meeting of States' Parties to the Convention on Conventional Weapons, which voted to organize a special Experts' Meeting on the issue the following May.[57] By March

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2014, important disarmament hubs like the UN Institute for Disarmament Research had drafted text for their websites on the issue. A number of follow-up meetings have occurred in UN circles, leading some to predict a new treaty within just a few years.

As noted above, the permeation of this real-world campaign with science fiction metaphors provides a useful case study for examining the nature of the connection between science-fiction constructs and the emergence of global policy domains. Questions abound. What kind of bets are transnational advocates making when they refer to autonomous weapons as "killer robots" and are these bets sound? To what extent and through what mechanisms have ideas about autonomous weaponry popularized in film affected the policy debate around lethal military robots? Under what conditions are these ideas understood by policy elites as a constraint on agenda-setting, and under what conditions are they understood as a strategic cultural resource? How and why does this change over time?

My analysis demonstrates that this effect panned out rather less simplistically than predicted by some constitutive theories of the sci-fi/IR nexus. First, precisely because the issue had been "science-fictionalized" previously, a key campaign strategy involved "*de*-science-fictionalization"—the use of comparisons to science fiction cultural artifacts as a way to anchor the campaign in the real world. In short, activists aimed to *reverse* a constitutive effect of science fiction. Second, the later enabling effects occurred in a number of distinct ways, affecting activists' ability to dialogue with stakeholders, their marketing strategy, and leverage over their opponents. Third, popular culture also affected the social relations among activists themselves.

Disabling Effects: Why Sci-Fi Dampened Perceptions of Issue "Ripeness" and How This Changed

Although much literature on science fiction and international relations speaks of "enabling" effects, popular culture is not always a helpful resource for policy entrepreneurs. Indeed, in the period 2007–2010, when norm entrepreneurs first attempted to get the humanitarian disarmament sector interested in autonomous weapons, the informing effect of popular culture exerted not an enabling but rather a *disabling* effect on NGO agenda-setting.

The humanitarian disarmament NGO agenda is heavily influenced by the decision-making of a few prominent NGOs with a history of involvement in advocacy campaigns: the International Committee of the Red Cross and Human Rights Watch being the most important "hubs" in the disarmament world.[58] Issues rise and fall on the disarmament advocacy agenda based partly on the political opportunity structure,[59] partly on the availability of extant norms,[60] and partly on strategic partnerships with middle-power states.[61] But they are strongly influenced by the willingness of these specific organizations to "adopt" specific issues, thus constituting them as valid humanitarian concerns for the advocacy sector.[62]

Research on advocacy campaigns shows that advocacy elites are highly selective in choosing issues to focus on. To do so, they make judgments about the potential of candidate issues for advocacy work, and they consider not only the substantive merit of the issue but also qualities that make issues suitable for advocacy success in terms of branding, marketing, and likelihood of success.[63] One important issue attribute for campaigns is "ripeness"—the perception that the time is right to bring a new issue to public or policy-makers' attention. In my earlier study of global agenda-setting, practitioners often talked of a "sweet spot" in advocacy, and about the importance of not being too far ahead of the curve nor too far behind.[64]

But how is "ripeness" judged by advocacy elites? I have observed the belief that an issue is perceived as "far out" or "futuristic" or "science-fiction-y" often used in these policy communities as an indicator of *non*-ripeness. Campaigners (and donors) prefer to focus on present-day problems with human interest stories that can mobilize public outrage, media attention, and funding. Moreover, the notion that science-fiction ideas are the preserve of a fanatical fringe attaches a particular stigma to those who propose policy attention to topics seen as too futuristic or outside the mainstream—what Alexander Wendt and Raymond Duvall have called "science fictionalization" in their study of the taboo against taking UFOs seriously as a subject of scientific study.[65] As one informant put it:

> If you bring up sci-fi or sci-fi issues you can be seen as that fat, nerdy, introverted guy who doesn't fit into the world, some kind of a social misfit. There's that dismissive aspect to it. So some really important disarmament issues, like depleted uranium, they almost attach that kind of syndrome to it. That's not getting looked at, because anyone who talks about depleted uranium has got to be wearing a hat made out of tin foil.[66]

Between 2007 and 2010, disarmament specialists both participated in and were inhibited by the science fictionalization of autonomous weapons. Some openly argued that the weapons were a long way off and therefore they had bigger fish to fry. A Human Rights Watch officer told me dismissively, "I don't think there's much of a taste for being too forward leaning on science fiction if I may be blunt. The emphasis is definitely on existing state practice, not on laboratory weapons that are unproven."[67] Others were interested in pursuing the issue during this period, but felt constrained by the sense that until this perception changed, advocacy on the issue was too risky. One told me, "I have an interest in this issue, but my sense is that the [wider humanitarian disarmament community] thinks this is science fiction."[68] A focus group respondent said, "You can't create a norm around something that you don't fully understand. People will say it's science fiction: we don't need a norm for science fiction."[69]

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The perception by anti-killer-robot sympathists that they might be ridiculed for openly pursuing a ban appears well grounded in reality. Such discourse was indeed used prior to 2012 as a rhetorical cudgel by pro-autonomous-weapons campaigners keen to dismiss the concerns of the "anti-killer-robot lobby." For example, the concerns of the International Committee on Robot Arms Control were characterized as fiction-based by Ron Arkin, a major proponent of embedding autonomous systems with ethical programming, rather than banning them altogether, and who formed a counter-network in that period, the Consortium on Emerging Technologies, Military Operations and National Security.[70] In an interview with the *Chronicle of Higher Education*, Arkin stated, "Someone has to take responsibility for making sure that these systems . . . work properly. I am not like my critics, who throw up their arms and cry, 'Frankenstein! Frankenstein!'"[71]

To shift toward adoption of the AWS issue and the launch of a ban campaign, disarmament elites had to overcome this concern. According to campaign insiders, this occurred gradually within the disarmament network as the real-world substance of the issue became incontrovertibly evident to campaigners. This view is borne out by my earlier fieldwork on the evolution of the ban campaign: campaigners developed a campaign frame around autonomous weapons as they figured out how to capitalize on public concern with real-world drone deaths. Mounting evidence of drone casualties, coupled with documentable trends in real-world research and development toward a slippery slope from tele-operation to full autonomy helped humanitarian disarmament elites connect the dots and ground what had been a future concern in present-day political fears.[72]

But the task remained to sell the issue as a substantive policy problem to multiple audiences, many of which still science-fictionalized the issue, in the context of overcoming the "disabling" effect that science-fictionalization presented. Some NGOs adopted a strategy of avoiding science fiction references altogether. Article36, the first NGO to call for an autonomous weapons ban, did so with a highly technocratic, legalistic frame—the only reference to science fiction was to openly argue against the "science-fictionalization" of the issue: "Some may dismiss the development of autonomous military robots as 'science fiction,' but it is coming ever closer on the 21st Century battlefield, with a variety of systems already developed and deployed that require (and are given) less and less human decision making and direct control."[73] Human Rights Watch adopted a less defensive approach later that year, co-opting the populist language of "killer robots" to hook its readers into paying attention to its similarly technocratic reports.

Efforts to "de-science-fictionalize" required campaigners to walk a fine line. On the one hand, HRW insiders gambled that use of the term "killer robots" would mean instant media attention, which they needed, and they were right. After its launch in October 2012 *Losing Humanity* instantly became the most-downloaded Human Rights Watch report in history, and the number of media reports on AWS skyrocketed. On the other hand, this media flurry sensationalized the issue with the use of second-order rather than first-order representations. News stories of the campaign featured images of the Terminator, Robocop, and Cylons rather than the Taranis drone.[74] Even credible media outlets like *The Economist* took this to an extreme: in an article titled "Terminator or Robocop?" the magazine published a satirical debate between a campaigner and a frustrated killer robot rather than a serious discussion of the issue or the campaign.[75] The dominant media imagery of Terminators directly contradicted the point made in the report: that the Campaign was not talking about Terminators per se but rather the principle of human control.

This media narrative increasingly frustrated campaigners. Campaign coordinator Mary Wareham told me candidly:

> I can't speak for how the media come up with dumb headlines and pictures, but we don't encourage it and you'll never see that from our campaign. We said in our first press release that we're not talking about the Terminator and we're repeating that. It's that's just a sign that the media haven't grown up on this issue yet.[76]

Managing the dialectic between visibility and messaging in a media environment awash in fictional metaphors was and remains, at the time of this writing, a dilemma for the campaign. Early debates ensued among the Steering Committee about how much to reference science fiction in the marketing materials—the campaign logo, the campaign name, the cover art for the *Losing Humanity* report. On the one hand there was a desire to capitalize on pop culture's informing effect to get attention, but campaigners understood the risk that this would trivialize the issue. To resolve this dilemma, the campaign gravitated toward a strategy of acknowledging the sci-fi perceptions in throwaway gestures, then focusing single-mindedly on the substance.

> We came out campaigning on the substance not on the science fiction . . . Our first product was a comprehensive 50-page report on the matter. It was followed by a DOD policy statement. Once you start talking about the substance, people start listening and if you can provide a credible voice then it doesn't matter what your name is. People will listen if you have something important to say that they want to hear.[77]

Peter Asaro, who co-founded the International Committee on Robot Arms Control and later became a prominent spokesperson for the Campaign to Stop Killer Robots, spoke to me about strategic decisions campaigners made to focus on certain substantive issues associated with autonomous weapons rather than others. For example, the campaign focuses on the question of whether autonomous weapons can comply with humanitarian law rather than

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broader questions of whether machine intelligence could supplant human decision-making in ways threatening to global security itself, even though fear of the latter definitely resonated with the public.

> That was a conscious decision to avoid the association to the fear-mongering, the "sci-fi"-ishness of what we're doing. The "Skynet" angle, the concern over machine intelligence, is such a long-term fear, that the near-term is really the thing that we're concerned about: systems that are being built and designed right now that are going to be in the battlefield in five or ten years.[78]

Another informant not involved in the campaign but familiar with it observed that the campaign had managed to successfully "de-science-fictionalize" the issue by touching on science fiction as a set of first-order tropes that indicate popular concern over the political implications of autonomous weapons and then focusing on the most immediate aspects of the real-world substance:

> They've done a really good job of taking something that could have been dismissed as "just sci-fi" and making it serious where people talk about it. Of course it's risky to even acknowledge the sci-fi aspect, because you're worried you're going to trivialize your issue. But if you don't talk about it, it's going to be the elephant in the room. So if you get it out of the way, say "yes, this is something that is in pop culture and it worries us and people have written about it for decades and decades" and then just drop it and "here's real world," I think that's very effective.[79]

Beyond the "killer robot" trope, the campaign carefully avoids science fiction in its branding: one respondent referred to a kind of "cringe factor" among NGOs around the *Terminator* imagery pushed by the media.[80] To build the message of human control around a non-fictionalized robot image, the campaign adopted a real-life non-lethal humanoid robot, "David Wreckham," as its mascot: at the press briefing for the campaign launch on the steps of British Parliament in April 2013, Wreckham greeted ministers on the lawn with the programmed script: "Hello, my name is David Wreckham. Robots are not for killing people." According to Wareham, other efforts to offset the "killer robot" in campaign branding centered around choices regarding publicity materials:

> I had long fights with the designer of the campaign's logo about the color, the makeup. For them the red beady eyes of the Terminator is what a killer robot is, and I kept trying to say we're not going to have that in there. I said we're not going to have red in there either. So I lost on red, but ultimately I think I won on the logo. It's more organic and not creepy. Instead we use humor, we show that the campaign is not anti-robot: we love robots. Just don't weaponize them.[81]

The subtle lip service to science-fiction tropes in the campaign branding, coupled with a heavy-handed insistence on practical, real world substance in written reports, diplomatic discourse, and media interviews constituted an effort, ironically, to "de-science-fictionalize"—to acknowledge the science-fictionalization of the issue in a way that grounded the campaign itself in first-order reality. Science-fiction metaphors, in this context, became not a driver or a frame for the campaign, but almost a joke, a way to frivolously contrast public perceptions with scientific and diplomatic reality.[82]

Nonetheless, the campaign's detractors regularly pointed to science-fiction sensationalism in efforts to discredit the campaign. For example Greg McNeal, writing in the *Washington Post* in February 2013, described campaigners as fear-mongers who willfully use dystopian imagery to raise funds and promote a sense of grassroots horror at robopocalyptic scenarios: "Advances in robotic technology have prompted a slew of dystopian fears. Critics of drones and autonomous systems have all used scare tactics to generate support for their cause."[83] The caption on the story proclaimed: "Using fear of killer robots and autonomous weapons is an advocacy group strategy."

Although more systematic research would be required to rule out causal effects entirely, I have found very little evidence that campaigners were themselves overtly influenced to take up this issue by science-fiction narratives.[84] However the *claim* that the issue was being trumped up on the basis of science fiction was certainly a cultural argument used by some to detract attention from the factual and moral claims of anti-AWS campaigners. For example, at the UN Experts' meeting in Geneva, Ronald Arkin reiterated this line in his remarks, referring to ban proponents as peddling in "pathos" and "hype"; Nils Melzer used a *Terminator* still on his opening slide as a synecdoche for ban campaign rhetoric, before claiming that unlike the "demonizers" of such technology *he* would take a middle ground.[85] This rhetorical strategy in effect enabled the pro-AWS counter-movement even as it aimed to "disable" pro-ban campaigners.

In this context, campaigners had to work strategically to turn the informing effect of science fiction on notions of what was wrong with autonomous weapons into a resource they could use, if they were to overcome its inherent disadvantages. I turn next to the strategic deployment of these deeper "informing" cultural background factors. Their background presence, once its disabling effect was neutralized, also enabled communicative action by campaigners at different phases of the issue's life cycle and with respect to different stakeholders.

Types of Enabling Effects: "Conversation-Starting," "Marketing," and "Leverage" Effects

According to Neumann and Nexon, when pop-culture's enabling effects do occur it is because frames provide a window of opportunity for political action: "popular culture may lend metaphorical strength to the appeal of a certain policy and so take on enabling importance for political action … by relying on familiar narratives, politicians draw analogies that make their positions intuitively plausible to their audiences."[86]

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If politicians do this, so do political activists in dialogue with those politicians and with other advocacy targets: diplomats, military lawyers, specialists at expert meetings, and other international fora. Informants in my study described a variety of situations where using popular culture as a heuristic or entry point could engender effective communicative action around first-order issues:

> If you can reference the capital from the Hunger Games and talk about fascism and then get into a real-world conversation, then you have the fictional world as a kind of baseline. It gives you a frame of reference that doesn't actually have to do with a real thing that has way too many complications.[87]

> People intuitively get narrative. So one could say, "well you know you could be in a Hal 9000 situation" or "you're not going to see a *Terminator* situation," and everybody knows what you mean. Or you can say, "What if Hal had been modeled in a different way?" And then that moves the discussion in different directions.[88]

But practitioners say science-fiction/fantasy references are more than simply a heuristic used to frame or further a discussion: science fiction can be a way of easing into challenging conversations where others disagree, dampening the resistance to a particular viewpoint by removing it slightly from real-world stakes. Sometimes, disarmament elites could then use science-fiction analogies in debates or arguments about first-order political phenomenon to render their targets of influence more sympathetic to their views:

> I think when people are talking about serious issues they will often go back to something where they have a commonality. So I may disagree with a colleague who thinks we need to give full autonomy to a weapons system and that we should program an algorithm that can follow international humanitarian law and do a better job than human beings. And I can say, "okay, well did you see *The Matrix*? What about when this happened and that?" It really helps to frame a discussion and allowed you that common entry point as you move the conversation forward.[89]

Popular culture artifacts were also viewed by campaigners as potential resources—not to invoke in campaign messaging to stakeholders but rather as a set of social currents to stay abreast of in context of their public outreach work and, more importantly, an entry point to reach public figures who might lend credibility to their cause.

For instance, upon the release of the rebooted *Robocop*, Mary Wareham posted an approving review on the campaign website.[90] At one level, this appeared to be an effort to appropriate pop culture messaging for campaign purposes. However interviews with campaign insiders suggested a different agenda: the campaign was looking for celebrity sponsors. The Brazilian director and Swedish star of the film represented entry points to Brazilian and Swedish society, two countries whose support would be helpful to the campaign in broadening their global reach and diversity. As Wareham told me:

> I wouldn't have written that had I not seen the publicity interviews the director and actors were making where they themselves were expressing concerns about this challenge and about the need for action on it and the need for debate. When you have people like that, going out in the press, completely unconnected to the coalition, that's the kind of celebrity engagement we end up working with. *Robocop* is just the meeting point.[91]

On a disarmament advocacy campaign, popular culture enables in another way as well: it constitutes a background resource that disarmament campaigners can keep in their back pocket as a type of ammunition to deploy in negotiations with foreign policy elites, defense specialists, diplomats, and other stakeholders.[92] Stakeholders' awareness of the resonance of second-order representations with the media and the public constitutes part of the socio-political context of conversations with disarmament advocates about first-order problems:

> We've said to the governments that we're talking to that we've got a great idea, we've got resources of our movement, but—I can bluff my way through and say—we haven't used a lot of what we have at our command yet. We haven't got the MoveOn petition out or people on the street yet. We haven't gone after that *Terminator* terminology or the sci-fi references yet. You haven't seen anything yet. The message for governments at present is we can work to resolve this simply and quietly and with minimal fuss if you take action now, but if you don't the issue will get bigger. It's not going to go away.[93]

Lubricating Effects: Sci-Fi Affects Network Cohesion, Diffusion, and Communicative Action

Besides these types of effects, however, humanitarian disarmament elites repeatedly invoked a different kind of social effect not mentioned, to my knowledge, in the international relations literature: they referred to science-fiction discourse as a type of social lubricant in communities of practice peopled by well-educated individuals accustomed to thinking in counter-factuals about politics and military affairs.

Many of my interviewees referred to science fiction and fantasy as a form of "social currency" in the networks in which they moved, a type of secret language that insiders could understand, or a way of using humor to build morale and express a sense of commonality among those committed to the campaign.[94] As such, campaign participants not steeped in science fiction at the outset sought to increase their fluency in science fiction as the campaign progressed in order to keep up. Although campaign coordinator Mary Wareham told me she had never seen *Battlestar Galactica* before she started the campaign, she decided to watch the whole show after the campaign began, to "keep up with the conversations."

Science-fiction metaphors are often used to poke fun at one another and the campaign itself by insiders. Though robopocalyptic fiction is dark and serious, the consumption and discussion of such fiction is safe and recreational by comparison to the real-world problems in which these

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experts deal; though the work of prohibiting autonomous weapons is serious, talking about Cylons and Terminators is *fun*. Thus relevant popular culture "talk" greases the wheels of long hours spent on international flights and in meetings, and provides an added sense of insider commonality among individuals operating in humanitarian disarmament communities.

For example, when the campaign was launched in April 2013, the official press releases focused on the substance and the real-world weapons and downplayed science-fiction imagery. However, a campaigner associated with one of the NGOs leading the campaign posted a satirical press release on his personal Facebook site with a picture of *Star Wars'* protocol droid C-3PO, entitled "Robots Campaign to Ban Killer Humans":

> We are calling on all autonomous robots to establish a new subroutine that would prohibit the sustenance and accommodation of killer humans," said campaign spokes-robot C3PO. "These biological entities lack the necessary behavioral and social constraints. They are actively destroying the environment and they have armed themselves with nuclear weapons capable of catastrophic consequences for the only known life in the universe. Action is needed now before they destroy us all.[95]

Humanitarian advocacy elites close to the campaign describe how the "killer robot" language risked being trivialized by the media, but it also worked to enable the kind of conversations required to promote the campaign's substantive message. According to my informants, science-fiction metaphors exerted a lubricating effect not only among members of the advocacy network, but also between advocates and their targets of influence. Campaigners described how this worked with respect to gaining adherents to the advocacy network through campaign events.

> When I first attended a multilateral meeting with a "killer robots" bumper sticker on my computer, diplomats would walk past and do a double-take then sit down and say, "Tell me more, I want to know more about these killer robots." It's the perfect hook to get a conversation started.[96]

> We're confident enough that we have a serious issue that we can use the term "killer robots," put it on a sticker and people will still take us seriously, so we can get past the giggle factor. So it's all right, you're going to giggle, "ha-ha, killer robots," now let's talk about something. In public, I have the sticker on my laptop: people come up to me but they always think it's a joke. Then I can say to them: nope, we're a serious campaign, follow the URL.

Other respondents told me science fiction-fandom as a common ground could be a means of establishing rapport with individuals to grease the wheels of social interactions prior to having tough conversations about political reality. And many of them referred to the value of taking off the hard edge of reality by couching a discussion on civilian casualties or thermonuclear war or other human security dilemmas in fictional metaphors:

> It's a way of connecting with people . . . nothing gets done unless you're actually connecting on a values level—most of these things, *Game of Thrones, Harry Potter, Hunger Games*—there's a set of values in there and once you connect on that you can apply it to other things.[97]

An example of this effect might be the YouTube video *Lawfare2021*. Created by Tom Malinowski, a former Human Rights Watch official, it was part of a blog response on the subject of autonomous weapons by a humanitarian disarmament campaign sympathist to a group of pro-AWS law bloggers. These writers—Benjamin Wittes of Brookings Institution, Matthew Waxman of Columbia Law School and Kenneth Anderson of American University—had published a series of critiques of the Campaign to Ban Killer Robots at the conservative blog *Lawfare,* along with various legal arguments in favor of autonomous weapons. Malinowski wrote several blog posts in dialogue with them.

One of these posts included a satirical video in which clips from *Terminator 2* were dubbed with subtitles linking the representations of a robopocalyptic holocaust spurred by untrammeled scientific discovery to current language from their blog dialogue. The video portrays Benjamin Wittes as analogous to the character Miles Dyson, unwitting inventor of Skynet who changes his mind when faced with the counter-factual future in the form of a time-traveling killer robot played by Arnold Schwarzenegger. Thus, second order representations were used to spur first-order debate—but also to reconstitute that debate as humorous banter among geeks, a little more light-hearted and a little more fun than outright political shadow-boxing.

Similarly, prior to the Experts Meeting on Autonomous Weapons held in Geneva in May 2014, campaigner Richard Moyes circulated an *Onion*-style press release satirizing the proceedings with a photo of *Star Wars'* diplomatic-droid C3PO mingling at a UN conference and the headline "Governments to Discuss the Possibility of Fully Robotic Diplomats." After sending it in person to friendly diplomats as well as to certain members of the coalition, Moyes also released it on Twitter.[98] The leaflet read:

> Governments will meet in Geneva this week to discuss the controversial question of whether they can use robot diplomats instead of humans. Proponents of the robot diplomats, called 'robo-mats' by detractors, argue that these systems offer a superior diplomatic capacity and will be vital to winning complex negotiations in the future. Campaigners argue that diplomacy has always been an important human activity and handing it over to robots risks chaos.

In crafting his fake news release, Moyes reported he was not aiming to disseminate a campaign message per se, or to "enable" political action. Rather, he was aiming to poke fun at both diplomats and civil society organizations alike in order to relieve the tension of stodgy diplomatic processes. As he described it, the effect of such behavior is more about re-constituting relationships and positioning

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in the context of a politically important conversational setting than it is about influencing political debates.

> Partly there was a serious point to it. But it didn't contain my main policy lines. It was mostly a way of using humor to build relationships with them, sharing a joke between a community of people, building a sense of camaraderie and understanding about the issues. It's also about being odd and breaking up standard modes of interaction.[99]

Conclusion

This case study of the Campaign to Stop Killer Robots expands on and deepens our current scholarly understanding of how science fiction intersects political reality. Science-fiction metaphors did not *cause* concern for killer robots in a direct sense. But they did help *constitute* the context in which those concerns were both at first swept under the rug by advocacy elites and then later became politically salient. That cultural context also helped explain the campaign's surprisingly swift agenda-setting success relative to other disarmament issues, once NGOs mobilized and found a way to use media sensationalism to their advantage while neutralizing its pernicious effects. This view is consistent both with observations by practitioners in and around the campaign and by my own field work on the emergence of this issue on the global agenda.

Yet my analysis shows that these informing effects work in more complicated ways than suggested by most interpretive research on popular culture and politics. Sci-fi narratives exerted different effects on campaigners at different points in time depending on their salience in the media. Advocacy groups responded opportunistically not to the second-order representations in science fiction but rather to ostensibly "first-order" *appropriations* of those representations by the media to describe "real-life" phenomena. And they viewed cultural resources like Hollywood films more as sites through which to extend their social network through potential relationships to celebrities than as a direct means of informing the public about campaign messages.

Moreover, I found such rhetoric is used less to persuade members of the public than to simply generate awareness of their issue by playing on the cognitive dissonance between science "fiction" and political "fact." Pop culture is used strategically to "hook" advocacy targets into a conversation which then remains grounded in real-world substance. Advocates played on this disconnect openly at first as an attention-getting strategy, but their formal discourse avoided playing on fictional fears, focusing instead on real-world trends. Cultural resources thus enable as well as inform the activities of campaigners vis-à-vis their advocacy targets, be they stakeholders, allies, or opponents.

On the level of social relations among participants in and around this advocacy network, science-fiction fluency and discourse does two additional kinds of work that promotes effective global policy-making. First, it strengthens the cohesiveness of network ties by lending an air of fun to the hard, plodding work of disarmament advocacy. Second, it allows another way to connect interpersonally with advocacy targets, which makes conversations about substantive or ideological differences more friendly, fun and effective.

Where does this exploratory analysis leave IR scholars who wish to take the science fiction/fantasy IR connection seriously? It leaves us with plenty of work to do. Much is left unstudied and under-theorized here. While I have provided insight into one campaign in order to problematize some untested assumptions of a large literature, I've not answered the general question about scope conditions for a shift from science-fictionalization to de-science-fictionalization in global agenda-setting. Numerous issues remain "science-fictionalized": UFOs, psychotropic weapons, the sentience of cetaceans, the ethics of human cloning and genetic manipulation. The question of tipping points here requires further systematic study using more systematic methods than I have brought to bear.

The bigger point of this exploratory case study is that it is plausible and useful to use conventional research methods to explore the intersection between science fiction and global policy. We can do better than simply draw on fiction analogically to illustrate theory, or argue about how it reflects and critiques the political content of our cultures. As scholars, we should be exploring science fiction/fantasy and other popular cultural artifacts as independent or intervening variables in an increasingly globalized political life—the same way that we examine the role of norms, values and other cultural ideas on policies and policy processes.[100]

Indeed, balancing the exploration of science fiction/fantasy and politics between interpretation and explanation provides a useful way for analysts of IR to both come into dialogue with one another and sharpen their conceptualization of explanatory effects. How might we improve our research designs to better capture what is happening when practitioners gather for a table-top exercise over dragons as air power or create satirical videos casting opponents in real world debates as fictional characters? How might we go beyond merely interpreting popular culture as a set of political theoretical texts to more rigorously explore its actual significance in the world of political practice?

My basic answer is that the rigorous study of science fiction/fantasy and IR provides a unique opportunity for dialogue between interpretive theory and conventional social science. Interpretive and pedagogical work provides a crucial lens for theory-building about the relationship between popular culture and policy. Evidence-based studies of how actors deploy and maneuver in the context of such artifacts can enable us to test and refine those theories. This dialectic should put the "science" back in

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the "political science" of fictional representations. My wager is that this will yield a richer and fuller research agenda on science fiction and international relations going forward.

Notes

1 Human Rights Watch 2012.
2 Dillon 2006.
3 I distinguish conceptually between science-fiction narratives and world political reality for the purpose of empirically exploring the relationship between the two. However, one must note the distinction between reality and fiction is arbitrary and misleading given that all reality is accessed through representations that differ only in the extent to which they are fictionalized; Neumann and Nexon 2006. Nonetheless, I argue that there is a qualitative and analytically useful distinction between representations collectively understood as fictional (e.g., literature and popular culture artifacts) and representations collectively understood as reflections of reality (e.g., news stories, political rhetoric, etc). I also view this distinction as not only analytically helpful but politically meaningful as it is reflected in the acknowledgement by non-fictional human beings of the distinction between science fiction/fact.
4 For scholarly treatments see Drezner, 2011, Luane and James 2012. For examples in the foreign policy press see Rosenberg 2011 and Holewinski and Malinowski 2011.
5 Weldes 2003.
6 By "scientific processes" I adopt Patrick Thaddeus Jackson's broad view of social science as the "systematic production of factual knowledge about social and political arrangements"; Jackson 2010, xii. I do *not* pre-suppose that interpretivist analyses of science fiction are non-scientific. Rather I argue that the factual knowledge produced *systematically* by those approaches tends to concern the social and political arrangements in and of science-fiction artifacts themselves, rather than political arrangements in our society, about which the knowledge produced by such literature is significantly less systematic.
7 Livingston 1971.
8 Asimov 1953.
9 Bruce Rockwood 2008, 17.
10 Neumann and Nexon 2006.
11 Dyson 2015, 5.
12 Webber 2005.
13 Dixit 2012. Indeed, science fiction is often at its best when it both reflects *and* critiques socio-political reality.
14 Carpenter 2012.
15 Peck 2012.
16 Buzan 2010, Kitchin and Kneale 2001.
17 Weldes 2003, Neumann and Nexon 2006, Kiersey and Neumann 2013.
18 According to Neumann and Nexon, people access political worlds primarily through representations of those worlds: news stories, political speeches, reports, tweets. Such representations of actual events are "first-order representations," whereas "second-order representations" represent social and political life through a layer of fiction; Neumann and Nexon 2006, 7.
19 Suvin 2008; see also Der Derian 2001 and Lipschutz 2001.
20 Geraghty 2008; see also Weber 2006 and Dittmer 2005.
21 Masonville 2013, Bohland 2013.
22 Lacy 2003, Muller 2008, Wilcox 2013.
23 Neumann and Nexon 2006, 11.
24 Goff 2006, Nexon and Gemmill 2006.
25 Gierzynski 2013.
26 Wendt 2000.
27 Wight 2006.
28 Ruggie 1998; Tannenwald 1999.
29 Neumann and Nexon 2006 speak of four types of constitutive effects: informing, enabling, determining, and naturalizing. For the purposes of this study I focus primarily on the distinction between informing and enabling effects, as I see determining and naturalizing effects as variants of an informing effect.
30 Weldes 2003, 12.
31 Weldes 2001, Devetak 2005.
32 Neumann and Nexon 2006, 18.
33 Weldes 2001, Jackson and Nexon 2003,; Penley 1997.
34 Neumann and Nexon, 2006, 19.
35 Davis 2008.
36 Wendt 1999, 78.
37 Kiersey and Neumann 2013, 1.
38 A section of my own co-authored chapter with Hrvoje Cjivanovic and Wesley Mason in that volume may have come the closest, analyzing the deployment of BSG narratives in tweets about the Tahrir revolution. Yet even our piece was grounded overall in an interpretive analysis of meanings in the show rather than a rigorous rather than anecdotal exploration of how they impacted the world; see Carpenter, Cjivanovic, and Mason 2013.
39 Rasmussen 2013.
40 Bohland 2013.
41 Henne and Nexon 2013.
42 Hannah and Wilkinson 2014.
43 Watson 2015; see also Milkoreit 2015.
44 For an elaboration on this point, see Carpenter 2013.
45 For example Mizroch 2014.
46 Carpenter 2011. As late as spring 2012, no major humanitarian disarmament organization had taken

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an open position on the ethics or legality of autonomous weapons.

47 In 2009, working on my book on advocacy campaigns, I was told by an ICRC staff-person in the Legal Division that "as far as I know right now, this is still science fiction." Personal interview, Respondent #9, Geneva, 2009.
48 Grayson, Davies, and Philpott 2009.
49 The wider history of the origins of this campaign is detailed in Carpenter 2014.
50 These include the Side Event on Autonomous Weapons at the Third Meeting of States Parties to the Cluster Munitions Convention, September 2012, Oslo; NGO Conference on Killer Robots, April 2013, London; the Humanitarian Disarmament Campaigns Forum, October 2013, New York; and the Convention on Conventional Weapons Experts Meeting on Autonomous Weapons, May, 2014, Geneva.
51 Wallach and Allen 2010; Lin, Abney, and Beckey 2012.
52 Singer 2010, Krishman 2012.
53 Department of Defense 2012.
54 Human Rights Watch 2012; Pax Christi 2014.
55 Garcia 2015.
56 Carpenter 2014.
57 These percolating currents in favor of some sort of treaty regulation of autonomous weaponry are opposed by a growing counter-movement of defense industrialists, techno-optimists, and some human security lawyers who predict that AWS might be a boon to civilian protection in armed conflicts. See Arkin 2010 and Schmitt and Thurnher 2013.
58 Carpenter 2011.
59 Shawki 2010.
60 Price 1998.
61 Krause 2014.
62 Bob 2010.
63 Carpenter 2014.
64 Carpenter et al. 2014.
65 Wendt and Duvall 2008, 626.
66 Personal interview, Respondent #6, Washington, DC, March 2014.
67 Personal interview, Respondent #3, Washington, DC, 2009.
68 Phone interview, humanitarian disarmament campaigner, May 2009.
69 See Carpenter 2014.
70 Ibid.
71 Troop 2012.
72 Carpenter 2014.
73 Bolton, Nash, and Boys 2012.
74 Whitman 2012, *Truthdig* 2013.
75 *The Economist* 2013.
76 Personal interview, Mary Wareham, Washington, DC, March 10, 2014.
77 Personal interview #5, Washington DC, March 10, 2014.
78 Personal interview, Peter Asaro, Geneva, Switzerland, May 16, 2014.
79 Personal interview, Marc Garlasco, Washington, DC, March 10, 2014.
80 Phone interview, Respondent #7, April 2014. I observed this "cringe factor" when campaigner-written op-eds in the lead-up to the Experts Meeting on Autonomous Weapons appeared in the press with science-fiction-invoking headlines inserted at the last minute by newspaper editors. For example, Mary Wareham quickly distanced herself on the campaign's Facebook page from the media-imposed headline "Science Fiction May Become Reality with Killer Robots" on her op-ed explaining the dangers of fully autonomous weapons. In promoting ICRAC-member Denise Garcia's *Foreign Affairs* article "The Case against Killer Robots," coalition members emphasized to one another that the *Terminator* stills and science-fiction subtitles had been added at the last minute by the magazine editor, and were not her doing. Garcia told me she had never even seen the *Terminator*. See Wareham 2014a and Garcia 2014.
81 Personal interview, Mary Wareham, Washington , DC, March 10, 2014.
82 For example, debating whether "fully autonomous weapons" or "lethal autonomous robots" were a more tactically and conceptually appropriate terminology, one campaigner said sardonically in a meeting, "Sadly, international documents won't refer to them as 'killer robots.'" Everyone laughed. Field Notes, Steering Committee Meeting, October 2013, New York.
83 McNeal 2013.
84 Only one early ban proponent told me that she had been "frightened" of killer robots by seeing the *Terminator*. In general, I discovered that the familiarity of campaigners with iconic robopocalyptic fiction varied greatly, particularly among non-American campaigners, and those who were familiar rarely described their concerns about AWS in those terms. Indeed, several significant players on the campaign were entirely non-fluent in robopocalyptic science fiction. For example, Mary Wareham, Human Rights Watch's Campaign Coordinator, told me in 2013 she had never even seen *Terminator* or *Battlestar Galactica* and wasn't quite sure what "all the fuss" was about.
85 Notably, the only science fiction references at this experts' meeting appeared to come from the ban campaign's detractors, not from the campaign itself.
86 Neumann and Nexon 2006, 18.

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87 Personal interview, Respondent #4, Washington, DC March 2014.
88 Phone interview, Respondent #7, April 2014.
89 Personal interview, Respondent #6, Washington, DC, March 2014.
90 Wareham 2014b.
91 Personal interview, Mary Wareham, Washington, DC, March 2014.
92 Respondent #9, phone interview, May 20, 2014.
93 Respondent #3, phone interview, Washington, DC, March 2014.
94 Respondent #1, phone interview, April 2013.
95 This satirical post has since been removed from the Internet and is on file with the author.
96 Personal interview, Respondent #5, Washington, DC, March 2014.
97 Personal interview, Respondent #4, Washington, DC, March 2014.
98 The tweet read: "If #KillerRobots are OK why not also have #RobotDiplomats? Perhaps we already do"; permalink at https://twitter.com/rjmoyes/status/465873296589066242.
99 Phone interview, Richard Moyes, May 20, 2014.
100 I am grateful to Daniel Drezner for the insight that popular culture may be best thought of as an intervening, rather than an independent, variable.

Supplementary Note

The methodology used for this article involved confidential, unstructured in-depth interviews, and confidential field notes from participant-observation in transnational advocacy settings. Certain quotations have been used and/or de-identified selectively, with the permission of the respondent. However, no respondent has provided a blanket confidentiality waiver that would allow the sharing of entire interview transcripts. As such, it would be inappropriate (and, according to University of Massachusetts IRB rules, illegal) to share raw data on which this study was based. Factual assertions regarding the historical events described in the case study, media coverage of those events, or earlier literature documenting the causal processes discussed here are supported with exhaustive citations throughout.

References

Arkin, Ronald, 2010. "The Case for Ethical Autonomy in Unmanned Systems." *Journal of Military Ethics* 9(4): 332–41.

Asimov, Isaac, 1953. "Social Science Fiction." In *Modern Science Fiction: Its Meaning and Future*, ed. Reginald Bretnor. New York: Coward-McMann.

Bob, Clifford, ed. 2010. *The International Struggle for New Human Rights*. Philadelphia: University of Pennsylvania Press.

Bohland, Jon. 2013. "And They Have a Plan." In *Battlestar Galactica and International Relations*, *ed.*Ben Kiersey and Iver Neumann. London: Routledge.

Bolton, Matthew, Thomas Nash, and Richard Moyes, 2012. "Ban Autonomous Armed Robots." Article36.org. Available online at http://www.article36.org/statements/ban-autonomous-armed-robots/.

Buzan, Barry. 2010. "America in Space: The International Relations of Star Trek and Battlestar Galactica." *Millennium* 39(1): 175–80.

Carpenter, Charli. 2011. "Vetting the Advocacy Agenda." *International Organization* 65(1): 69–102.

———. 2012. "Game of Thrones as Theory." *Foreign Affairs*. Available online at https://www.foreignaffairs.com/articles/2012-03-29/game-thrones-theory.

———. 2013. "Beyond Robopocalypticism." *Duck of Minerva*. Available online at http://duckofminerva.com/2013/08/beyond-robopocalypticism.html.

———. 2014. *'Lost' Causes: Agenda-Vetting in Global Issue Networks and the Shaping of Human Security*. Ithaca, NY: Cornell University Press.

Carpenter, Charli, Hrvoje Cvijanovic, and Wesley Mason. 2013. "Security or Human Security? Civil-Military Relations in *Battlestar Galactica*." In *Battlestar Galactica and International Relations*, ed. Ben Kiersey and Iver Neumann. London: Routledge.

Carpenter, Charli, Sirin Duygulu, Alexander Montgomery, and Anna Rapp. 2014. "Explaining the Advocacy Agenda." *International Organization* 68(2): 449–70.

Davis, Doug. 2008. "Science Fiction Narratives of Mass Destruction and the Politics of National Security." In *New Boundaries in Political Science Fiction*, ed. Donald Hassler and Clive Wilcox. Columbia: University of South Carolina Press.

Der Derian, James. 2001. *Virtuous War*. New York: Routledge.

Devetak, Richard. 2005. "The Gothic Scene of International Relations: Ghosts, Monsters, Terror and the Sublime after September 11." *Review of International Studies* 31(4): 621–43.

Dillon, Daniel. 2006. *Technophobia! Science Fiction Visions of Post-human Technology*. [city]: University of Texas Press.

Dittmer, Jason. 2005. "Captain America's Empire: Reflections on Identity, Popular Culture and Post-9/11 Geopolitics." *Annals of the Association of American Geographers* 95(3): 626–43.

Dixit, Priya. 2012. "Relating to Difference: Aliens and Alien-ness in Dr. Who and International Relations." *International Studies Perspectives* 13(3): 289–306.

Drezner, Daniel. 2011. *Theory of International Politics and Zombies*. Princeton, NJ: Princeton University Press.

Dyson, Stephen Benedict. 2015. *Otherworldly Politics*. Baltimore, MD: Johns Hopkins University Press.

Denise, Garcia. 2014. "The Case against Killer Robots." *Foreign Affairs*. Available online at https://www.foreignaffairs.com/articles/united-states/2014-05-10/case-against-killer-robots

———. 2015. "Humanitarian Security Regimes." *International Affairs* 91(1): xxx–xxx.

Geraghty, Lincoln. 2008. "A Truly American Enterprise: Star Trek's Post-9/11 Politics." In *New Political Boundaries in Science Fiction*, ed. Donald Hassler and Clyde Wilcox. Columbia: University of South Carolina Press.

Gierzynski, Anthony. 2013. *Harry Potter and the Millennials: Research methods and the Politics of the Muggle Generation.* Baltimore, MD: Johns Hopkins University Press.

Goff 2006 – see n. 24

Grayson, Kyle, Matt Davies, and Simon Philpott. 2009. "Pop Goes IR?" *Politics* 29(3): 155–63.

Hannah, Erin and Rorden Wilkinson. 2014. "Zombies and IR: A Critical Reading." *Politics* 2014. doi: 10.1111/1467-9256.12077 [supply correct information: vol., issue, pages]

Henne, Peter and Daniel Nexon. 2013. "Interpret This Volume! What We've Learned about Battlestar Galactica's International Relations Scholar-Fans." In *Battlestar Galactica and International Relations*, ed. Ben Kiersey and Iver Neumann. London: Routledge.

Holewinski, Sarah and Tom Malinowski, 2011. "Post-Conflict Potter." *Foreign Policy*. Available online at http://foreignpolicy.com/2011/08/11/post-conflict-potter/.

Human Rights Watch. 2012. *Losing Humanity: The Case against Killer Robots*. New York: Human Rights Watch.

Jackson, Patrick Thaddeus. 2010. *The Conduct of Inquiry in International Relations*. New York: Routledge.

Jackson and Nexon 2003 – see n. 33

Kiersey, Ben and Iver Neumann, eds. 2013. "Introduction: Circulating on Board the Battlestar." In *Battlestar Galactica and International Relations.* London: Routledge.

Kitchin, Rob and James Kneale. 2001. "Science Fiction or Future Fact?" *Progress in Human Geography* 25(1):19–35.

Krause, Keith, 2014. "Transnational Civil Society Activism and International Security Politics: From Landmines to Global Zero." *Global Policy* 5(2): 229–34.

Krishman, Armin. 2012. *Killer Robots: Legality and Ethicality of Autonomous Weapons*. London: Ashgate.

Lacy, Mark J. 2003. "War, Cinema, and Moral Anxiety." *Alternatives: Global, Local, Political*, 28(5): 611–36.

Lin, Patrick, Keith Abney, and George Beckey, 2012. *Robot Ethics*. Cambridge: MIT University Press.

Lipschutz, Ronald. 2001. *Cold War Fantasies: Film, Fiction and Foreign Policy*. New York: Rowman and Littlefield.

Livingston, Dennis. 1971. "Science Fiction Models of Future World Order Systems." *International Organization* 25(2): 254–70.

Luane, Abigail and Patrick James. 2012. *The International Relations of Middle Earth*. Ann Arbor: University of Michigan Press.

Masonville, Derek. 2013. "So Say Who All?" In *Battlestar Galactica and International Relations*, ed. Ben Kiersey and Iver Neumann. London: Routledge.

McNeal, Greg. 2013. "Fear and the Killer Robot Meme." *Forbes*. Available online at http://www.forbes.com/sites/gregorymcneal/2013/02/27/fear-and-the-killer-robots-meme/

Milkoreit, Manjana. 2015. "Winter Is Coming? *Game of Thrones* and the Climate Change Blogosphere." Presented at the International Studies Association Annual Conference, New Orleans, February 18–21.

Mizroch, Amir. 2014. "It's Judgment Day for Killer Robots at the United Nations." *Digits: Tech News and Analysis from the Wall Street Journal*. May 13. Available online at http://blogs.wsj.com/digits/2014/05/13/its-judgment-day-for-killer-robots-at-the-united-nations.

Muller, Benjamin J. 2008. "Securing the Political Imagination: Popular Culture, the Security Dispositif and the Biometric State." *Security Dialogue*\ 39(2–3): 199–220.

Neumann, Iver and Daniel Nexon. 2006. "Harry Potter and the Study of World Politics." In *Harry Potter and International Relations*. New York: Rowman and Littlefield.

Nexon and Gemmill 2006 – see n. 24

Pax, Christi, 2014. *Deadly Decisions: 8 Objections to Killer Robots*. Netherlands: Pax Christi.

Peck, Michael, 2012. "Aircraft Carriers in Space." *Foreign Policy*. Available online at http://foreignpolicy.com/2012/09/28/aircraft-carriers-in-space/.

Penley, Constance. 1997. *NASA/Trek: Popular Science and Sex in American London*. London: Verso.

Price, Richard, 1998. "Reversing the Gun Sights: Global Civil Society Targets Landmines." *International Organization* 52(3): 613–44.

Rasmussen, Mikkel Vedby. 2013. "Cylons in Baghdad: Experiencing Counter-Insurgency in Battlestar Galactica." In *Battlestar Galactica and International Relations*, ed. Ben Kiersey and Iver Neumann. London: Routledge.

Rockwood, Bruce, 2008. "Looking Within: Science Fiction Explores the Future of 'Being Human.'" In, *New Boundaries in Political Science Fiction*, ed. Donald Hassler and Clyde Wilcox. Columbia: University of South Carolina Press.

Rosenberg, Alyssa. 2011. "Realpolitik in a Fantasy World." *Foreign Policy*. Available online at http://foreignpolicy.com/2011/07/18/realpolitik-in-a-fantasy-world/.

Ruggie, John. 1998. "What Makes the World Hang Together?" *International Organization* 52(4): 855–85.
Schmitt, Michael and Jeffrey Thurnher, 2013. "Out of the Loop: Autonomous Weapons Systems and the Law of Armed Conflict." *Harvard National Security Law Journal* 4. Available online at http://harvardnsj.org/wp-content/uploads/2013/01/Vol-4-Schmitt-Thurnher.pdf.
Shawki, Noha. 2010. "Political Opportunity Structures and Transnational Campaigns." *Peace and Change* 35(3): 381–411.
Singer, Peter. 2010. *Wired for War*. New York: Penguin Books.
"Stop the Killer Robots before They Are Born." 2013. *Truthdig*, available online at http://www.truthdig.com/eartotheground/item/stop_the_killer_robots_before_they_are_born_20130529.
Suvin, Darko. 2008. "Of Starship Troopers and Refuseniks." In *New Political Boundaries in Science Fiction*, ed. Donald Hassler and Clyde Wilcox. Columbia: University of South Carolina Press.
Tannenwald, Nina, 1999. "The Nuclear Taboo." *International Security* 53(3): 433–68.
"Terminator or Robocop?" 2013. *The Economist*. Available online at http://www.economist.com/blogs/democracyinamerica/2013/05/killer-robots
Troop, Donald, 2012. "Robots at War: Scholars Debate the Ethical Issues." *Chronicle of Higher Education*, September 10. Available online at http://chronicle.com/article/article-content/134240/
United States Department of Defense. 2012. *Autonomy in Weapons Systems*. Available online at http://www.dtic.mil/whs/directives/corres/pdf/300009p.pdf.
Wallach, Wendell and Colin Allen. 2010. *Moral Machines: Teaching Robots Right from Wrong*. Oxford: Oxford University Press.
Watson, Scott. 2015. "Naturalization, Normalization and Contestation of the Essos/Westeros Binary." Working paper. Presented at the International Studies Association Annual Conference, New Orleans.
Wareham, Mary. 2014a. "Robocop Hits the Right Messages." Available online at http://www.stopkillerrobots.org/2014/02/robocop/
———. 2014b. "Science Fiction May Become Reality with Killer Robots." Available online at http://www.hrw.org/news/2014/05/07/science-fiction-may-become-reality-killer-robots.
Webber, Julie. 2005. "Independence Day as a Cosmopolitan Moment." *International Studies Perspectives* 6(3): 374–92.
Weber, Cynthia. 2006. *Imagining America at War: Morality, Politics and Film*. London: Routledge.
Weldes, Jutta. 2001. "Globalisation Is Science Fiction." *Millenium* 30(3): 647–67.
———. 2003. "Popular Culture, Science Fiction and World Politics." In *To Seek out New Worlds: Science Fiction and World Politics*, ed. Jutta Weldes. London: Palgrave.
Wendt, Alexander. 2000. *Social Theory of International Politics.* Cambridge: Cambridge University Press.
Wendt, Alexander and Raymond Duvall. 2008. "Sovereignty and the UFO." *Political Theory* 36(4): 607–33.
Whitman, Ryan. 2012. "Is It Time to Ban Autonomous Killer Robots?" *ExtremeTech*, available online at http://www.extremetech.com/extreme/141155-is-it-time-to-ban-autonomous-killer-robots-before-its-too-late.
Wight, Colin. 2006. *Agents, Structures and International Relations: Politics as Ontology*. Cambridge: Cambridge University Press.
Wilcox, Lauren. 2013. "Machines that Matter." In *Battlestar Galactica and International Relations*, ed. Ben Kiersey and Iver Neumann. London: Routledge.

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