Pedagogical Utility of Science Fiction & The Neither Impossible nor Possible Universe of *The Expanse*

Jiun Bang
Assistant Professor
Colorado College
jbang@coloradocollege.edu

ABSTRACT

By relying on literary studies, this article distinguishes science fiction from fantasy: the former representing *what has not happened*, and the latter representing *what could not have happened* or *what cannot happen*. By intention, science fiction never truly severs itself from our experiential world, straddling this limbo of the not-possible and not-impossible, which I demonstrate using the fictional world of *The Expanse*—the shorthand for the fictional universe created by authors Daniel Abraham and Ty Franck that subsequently became a six-season TV series. In turn, I argue that despite the creeping trend in IR of examining popular culture and politics in co-constitutive ways, there is still much to be gained from utilizing popular culture for pedagogy. In order to effectively do so, we need to be more specific and explicit about what learning objectives popular culture might achieve in the classroom, such as analogical reasoning and even metacognition.

More *Refraction* Than *Reflection*

The heading is a reference to one of four International Relations' (IR) approaches to popular culture as outlined by Nexon and Neumann (Nexon and Neumann 2006). According to the duo, popular culture can be studied as: 1) a cause or outcome of world politics (aka 'popular culture and politics' frame); 2) a medium to illuminate certain processes or themes in IR (aka 'popular culture as mirror' frame); 3) as evidence of dominant norms, identities, or beliefs in a specific society or state (aka 'popular culture as data' frame), and; 4) as constituting the very norms, identities, and beliefs of international politics (aka 'popular culture as constitutive' frame) (Nexon and Neumann 2006, 10). From the four, the second approach of utilizing popular culture as a pedagogical tool to inspire and scrutinize themes in IR and IR Theory (IRT) has been particularly popular; while I myself am identifying with this 'popular culture as mirror' frame, my main focus here is to demonstrate the utility of popular culture—specifically science fiction—to slightly bend or *refract* rather than accurately mirror or *reflect* collective behavior in world politics, and thereby become an important method of achieving analogical reasoning and higher-order learning objectives. In fact, Nexon and Neuman themselves point out the benefit of popular culture when there is a disconnect: "Indeed, the effects of politics as mirror become perhaps clearest when the mirror fails to reflect the desired image. For example, when works of popular culture tell stories that a group sees as undermining their own stories about sacred realms, how to find them, and what to find there, trouble ensues," (Nexon and Neumann 2006, 12). By using the fictional world of *The Expanse*—a six-season television series based on a cluster of novels by Daniel Abraham and Ty Franck—I illustrate just how important this refraction is and what a 'similarly different' world like the one portrayed in *The Expanse* does for actuating key learning outcomes.

Although it may seem like an academic regression to talk about the pedagogical utility of popular culture without exploring the bidirectional link between popular culture and politics, I point out that existing literature on pedagogical utility of popular culture for IR has tended to remain very vague about what learning outcomes the former actually achieves (particularly using pedagogy parlance). The underspecification has in turn, contributed to the intuition that popular culture enhances general student understanding and comprehension of complex concepts and theories given its quality to effectively illustrate those events in our current world (the 'popular

culture as mirror' frame). While understanding is a critical component of learning, I suggest that there are additional higher-order learning objectives such as *analyzing* and *creating* that we can achieve with popular culture. How? For instance, science fiction provides a universe with just the right amount of similarity but also difference—which I elaborate later on using the literary term of *subjunctivity*—to refract, but not necessarily reflect, concepts and ideas of politics. This refraction requires the ability to sort out, compare, and combine systems of relationships, captured by *analogical reasoning*—something that is considered a hallmark of advanced cognition. To add, unlike fantasy, a key aspect of science fiction is that it never entirely divorces itself from reality, which means that instead of transcending through the fantastical, you are also made aware of the tangible world in which you exist. This occasion to self-scrutinize can lead to an awareness of one's own learning or thinking, typified by *metacognitive knowledge*, which represents a more complex dimension of knowledge than say, factual knowledge.

Much of what came about and how would not have been possible if not for the opportunity to actually teach a course incorporating *The Expanse*, which really was the inspiration for my theorization about science fiction and pedagogy. In turn, my own analysis that follows will incorporate where appropriate, threads that came out of an online Zoom discussion we had with authors Daniel Abraham and Ty Franck. This article is not meant to serve as a tactical 'how-to' manual for teaching IR in the classroom. Instead, it is a theorization about how science fiction and ultimately popular culture can better achieve important learning objectives, including for the IR discipline. In order to do so, the article first explores the existing discourse in IR on popular culture and science fiction, then reviews an essential convention of science fiction called subjunctivity, to finally discuss how elements of science fiction and *The Expanse* may enable analogical reasoning and higher-order learning outcomes.

Popular Culture, Science Fiction, and Subjunctivity

In lieu of a sweeping overview of the coevolution of popular culture and IR—there are already many good primers out there (Crilley 2021; Daniel and Musgrave 2017)—I dedicate this section to two specific sub-strands that my own argument is directly coopting and contributing to: the *pedagogical utility of popular culture* and *IR's engagement with sci-fi.*

Tying Pedagogical Utility to Learning Objectives

A kind of 'focal point' à la Schelling (1960) for thinking about the pedagogical utility of popular culture is probably Daniel Drezner's *Theories of International Politics and Zombies* (2010). While acknowledging the risks outlined by Hannah and Wilkinson (2014) on an uncritical use of zombieism in IR,[1] as the authors themselves note, the move to incorporate an element of popular culture into IR pedagogy has been generally positive. Judging by the steady list of texts on the subject (Weber 2001; Engert and Spencer 2009; Morrissette 2014; Sachleben 2014; Gibert 2015; Clapton and Shepherd 2016; Turzi 2022) the sentiment is not an unpopular one. Yet, this critical mass has also fed the dissatisfaction with the unilateral or compartmentalized approach of utilizing popular culture to simply illustrate motifs of international politics. This is evident in statements such as, "a need to investigate the political possibilities and limits of the politics produced and/or shaped by popular culture," (Grayson, Davies, and Philpott 2009, 156), which should "allow us to appreciate better what is at stake in the mutual implication of world politics and popular culture" (Grayson, Davies, and Philpott 2009, 157). A prime example is the research by Carpenter, who has explored the relationship between science-fiction narratives and norm-building efforts around the prohibition of fully autonomous weapons (Carpenter 2016). In regard to the 'popular culture as mirror' frame, she writes, "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," (Carpenter 2016, 55). It seems then, that we are increasingly witnessing an emphasis on the *constitutive* impacts of popular culture, of how representations in second-order texts might or might not feed back into first-order representations of political processes in the empirical world: this means no longer treating *Rambo's* longevity as a by-product of post-9/11 politics and the militarization of American society (Boggs and Pollard 2008), but also how our tragic hero may have specifically informed political discussions about that hyper-militarization alongside its implications for U.S foreign policy.

As a supporter of non-linearity and intertextuality in general, I do not deny the importance of the 'popular culture as constitutive' frame and the reciprocal nature of things. At

[1] The risks include over-essentializing country positions, reinforcing gender stereotyping, and dehumanizing others.

the same time, I am also not convinced that we have thoroughly exhausted the potential of popular culture for IR pedagogy, certainly not to the extent that we could presume a normative hierarchy of value concerning popular culture for IR. Among multiple factors, I suspect that giving pedagogy a short shrift has been a result of the fact that a) the discussion of pedagogy has limited itself to mostly *methods* rather than learning *outcomes*, which would sharpen the pedagogical utility of popular culture for IR, and b) when there is a reference to cognitive outcomes, they tend to remain vague and underspecified.

Let me ground this in examples. In their article on using film to teach international politics, Engert and Spencer (2009) spend a good amount of space outlining the four major (methodological) approaches to incorporating film in the IR classroom: in ways of illuminating events, issues, cultures, and theories. When they do refer to how popular culture could satisfy potential learning objectives, they tend to be more scattered yet self-contained, as they do not explicitly tie these back to the four major approaches. For instance, they assert that "films can make challenging abstract concepts, ideas and theories such as deterrence, terrorism or neo-liberalism more concrete, thereby making students 'see' and understand the issues," (Engert and Spencer 2009, 85). They also point to "a higher level of attention" and mentions that "emotions have a large influence on students' learning ability as they help imprint information in their memory," (Engert and Spencer 2009, 86), with subsequent hints at greater empathy and a higher student enthusiasm (Engert and Spencer 2009, 85-86). The same could be said for Blanton's (2013) extremely instructive piece on how to bring the undead aka zombies into the classroom. His article reads like a manual with thoughtful content about what concepts could be used and how, but there is very limited pinpointing of actual learning objectives, which I think underserves the cause. Blanton (2013, 2) mentions that "Bringing popular culture into the classroom can be very useful, particularly when teaching to nonmajors who may have little or no background knowledge of global affairs, as it provides students with a familiar "anchor" through which to better understand core issues and concepts within IR," or that popular culture could provide "great opportunities for making our classrooms engaging and relevant to new generations of students," (Blanton 2013, 12-13). Even for someone with ample sympathy for the pedagogical potential of popular culture for IR, its utility in increasing understanding and comprehension, coupled with greater student engagement and enthusiasm could sound too general and worse, unsatisfying.

To be fair, this is common practice. The E-International Relations textbook titled *Popular Culture and World Politics* (2015) features three contributions regarding pedagogy, though the coverage is again, tilted towards the 'how' (of incorporating popular culture into IR) than the 'what' (of learning objectives) with little clue about how the latter informs the former or vice versa. Clapton's chapter on popular culture as a teaching tool and assessment practice alludes to a few goals but they tend to remain vague: "Overall, my general observation is that popular culture can be very effective as a teaching tool when it is used to promote and enhance understanding of complex theories and concepts. It can also be very effective when used as part of a specific assessment or assessment regime," (Clapton 2015, 170). Clapton (2015, 171) goes on to say that:

> My use, then, of popular culture as a teaching tool has been twofold: first, I have used it to generate greater interest in some of the content I have delivered and promote greater student comprehension and understanding of key IR theories and concepts. Second, I have also invited students to reflect more broadly (and critically) on general methodological and epistemological issues in the discipline, such as what counts as valid forms of knowledge, what the appropriate or legitimate methods are for attaining it, and where we can find them.

There is a familiar nod to greater interest and comprehension, with an addition of critical thinking. That there is an explicit focus on assessment and 'assessment regimes' is particularly interesting here, because as is the case for any course syllabus, how you go about assessment should be directly informed by what learning objectives you erect for the course, so knowing what objectives popular culture could most uniquely and robustly facilitate seems pivotal. As I argue later on, there are poignant contributions that popular culture could make to IR that may have been overlooked due to our collective inability (or resistance) to think through the pedagogical utility from the standpoint of *pedagogy* rather than simply IR.

The Subjunctivity of Science Fiction

One undisputed realm of the 'popular' in popular culture within IR has been fantasy and science fiction. As if to remind society that academics are, despite our quirks, very much human and not maladaptive, the list of modern canons of IR research referents include many of what could be deemed as larger cultural touchstones: *Star Trek* (Weldes 1999; Geraghty 2008; Gonzalez 2017), *Battlestar Galactica* (Goulart and Joe 2008; Buzan 2010; Kiersey and Neumann 2013), *Harry*

Potter (Neumann and Nexon 2006; Barratt 2012), and of course, *Game of Thrones* (Clapton and Shepherd 2016; Young and Ko 2019; Larsson and Lundström 2020). There are excellent overviews about 'poli sci-fi' or when political science meets science fiction (Hamilton 2009; Dixit 2012), so I want to use this section to clarify what science fiction does for IR by referring to literary studies rather than IR, and ultimately embed this in the language of pedagogy to reinforce popular culture's pedagogical utility for IR.

First, what *is* science fiction? I hold no legitimate credentials to be able to adjudicate the long-lasting debates about whether science fiction is actually a genre or not (Bould and Vint 2009; Rieder 2010), nor is this the right space to do so; hence, I am going to side-step this tickly contention and treat science fiction as having some semblance of analytic cohesion, whether or not that makes it a genre or something else. Fortunately, IR has approached science fiction in roughly unitary terms (though perhaps too much so given the lack of distinction between science fiction with say, fantasy, which I will elaborate on shortly). To be specific, there have been more energy harnessed toward what science fiction *does* than on what it *is*. Hamilton (2009, 208), for instance, argues that science fiction "offers policy-makers and citizens a reflective lens to consider 'real world' events, a creative stage to explore everyday and apocalyptic dilemmas, and a simulation to juxtapose alternative futures." Echoing but adding to the idea of different imaginaries, Dixit (2012, 292) contends that science fiction ultimately "provides a space for discussing issues which are controversial and questioning the status quo of the world we live in." For Dyson (2015, 5-9), there are five advantages that science fiction (and fantasy) brings to the study of IR: its potential to 1) "vivify IR theory" by presenting materials that are both emotionally and intellectually engaging, 2) "provide more evidence" in ways of increasing data points upon which we can then evaluate our theories against, 3) "provide better evidence" since we can think through "what kinds of evidence bearing upon our theories might become available if we could see far into the future, relive the past as it happened, and alter fundamental parameters of technology and biology," 4) possess "less baggage" in the sense of having a "freer hand" in thinking through contentious issues, and 5) "clarify causal reasoning" by illustrating the importance of choice and contingency, especially from counterfactual thinking. Notwithstanding the wooliness of the term, the reoccurring themes of science fiction seems to be that it represents a kind of reflective lens and a space for alternate imaginaries. This is ultimately captured by Dyson's (2015, 5) argument that if IR itself is "full of imaginary notions to begin with, an

interplay between the real world and the world of knowledge, and so if it is helpful to draw insights from alternate imagined worlds too, why not do so?"

For a small cluster of others, definitions have been part and parcel of theorizing about the utility of the (non-) genre for IR. According to Saunders (2014, 150), science fiction is a "genre of *space* (terrain, topography, 'zones', etc.), as well as *outer* space. With few exceptions, sf deals with questions of exploration (of territory), exploitation (of resources), and control (of others, usually via technology (emphasis in original)." He goes on to add that science fiction is "the genre of the unknown, but imaginable" (Saunders 2014, 151). The most direct incorporation of the literary discourse from IR's perspective of science fiction is Weldes (2003: 9), who cites the influential work of Darko Suvin: "Central to the genre [of science fiction] is the process of estrangement…estrangement or alienation is based on what Darko Suvin dubbed the novum—Latin for "new" or "new thing"—which sets the imagined world of a work of SF off from the mundane." This imaginative device or the 'novum' (plural: nova) can be material (i.e. spaceship) or conceptual (i.e. different conceptions of gender), but the essence of this 'cognitive estrangement' is that it effectively "balances radical alterity and a familiar sameness" (Roberts 2006, 1). Although Weldes (2003: 1) does at one point describe science fiction to be the stuff of "alien landscapes, bizarre cityscapes, sleek ships for traveling through space, improbable machines for escaping time," and "encounters with fantastic creatures from other worlds," her reference to Suvin demonstrates the pivotal coexistence of familiarity and difference or of reinforcing *and* transcending.

In the end, I think it is the recognition of this coexistence that will get us closer to the pedagogical utility of science fiction (and popular culture) for IR rather than the singular reanimation of alien stereotypes or the bizarre and fantastical. In fact, from my limited understanding of literary discourse, a part of why Samuel Delany—American science fiction writer and literary critic—provided a new definition of science fiction was exactly to move our gaze away from pegging science fiction to its content. As proposed by Delany (1977, 43), what defines science fiction is what he calls '*subjunctivity*' or "the tension on the thread of meaning that runs between (to borrow Saussure's term for 'word':) sound-image and sound-image." It is worth using his voice here to explore the distinctive quality of science fiction:

> Suppose a series of words is presented to us as a piece of reportage. A blanket indicative tension informs the whole series: *this happened*. That is the particular level of subjunctivity at which journalism takes place…the subjunctivity level for a series of words labeled naturalistic fiction is defined by: *could have happened*. Note that the level of subjunctivity makes certain dictates and allows certain freedoms as to what word can follow another…Fantasy takes the subjunctivity of naturalistic fiction and throws it into reverse. At the appearance of elves, witches, or magic in a non-metaphorical position, or at some correction of image too bizarre to be explained by other than the super-natural, the level of subjunctivity becomes: *could not have happened*…but when spaceships, ray guns, or more accurately, any correction of images that indicates the future appears in a series of words and marks it as s-f, the subjunctivity level is changed once more: These objects, these convocations of objects into situations and events, are blanketly defined by *have not happened*. *Events that have not happened* are very different from the fictional events that *could have happened*, or the fantastic events that *could not have happened* [all emphasis in original] (Delany 1977, 43-44).

For one, Delany makes a distinction between science fiction (*what has not happened*) and fantasy *(what could not have happened* or *what cannot happen*). This is in contrast to the inclination in IR to cluster these two together (Dyson 2015; Irish, Sherman, and Watts 2022). Joanna Russ, author of the landmark feminist science fiction novel *The Female Man* (1975), also refers to Delany to parse this point out: fantasy "embodies a "negative subjunctiviy"—that is, fantasy is fantasy because it contravenes the real and violates it…and I would submit that…the *cannot* or *could not,* constitutes in fact the chief pleasure of fantasy. Fantasy violates the real, contravenes it, denies it, and insists on this denial throughout," (Russ 1995, 16). In contrast, for science fiction, "its connection with actuality, with possibility, is one of its chief pleasures," (Russ 1995, 16). To sum this up then, if science fiction is that which has not (yet) happened, it never completely divorces itself from reality, as would fantasy; this is not a trivial point. Theoretically, the argument that fictional examples create an "interpretive barrier in the classroom" and that we should stick to a "judicious use of science fiction and fantasy" (Irish, Sherman, and Watts 2022, n.p.) would hold more weight for fantasy as it would for science fiction. The same applies to concerns of 'otherness' or 'othering' the more a medium tends toward fantasy in its depictions of neo-tenuous alien beings that no longer resemble humans.

While Delany's definition of science fiction is certainly not the only or last word on the subject, I think it is worth exploring and incorporating the literary perspective as there are real risks to IR of taking the genre/non-genre for granted. For instance, by highlighting the content of science fiction for its ultimate definition, we are in turn, reinforcing the 'popular culture as

mirror' frame, of using science fiction as a medium to illuminate certain processes or themes in IR. This suggests that the learning objectives achieved will remain mostly at understanding, i.e.) increasing comprehension of complex issues. Yet, as I have just discussed, the role of science fiction is not to simply reflect reality like a mirror, but to also challenge one to think beyond actualities to possibilities. I argue that this has immense potentials for actuating analogical reasoning, and for science fiction more broadly to engage in higher-order learning objectives. Nowhere is this more stimulated than in a fictional universe that is just the right amount of similar but different to our own, as that of *The Expanse*.

The Expanse: Neither Impossible nor Possible[2]

As is the convention for discussing any particular item of popular culture by more than its name, I will do my best here to not include any huge spoilers. While I am using the shorthand of '*The Expanse*' in this article—which refers to the title of the six-season TV series carried first by SyFy and then Amazon Prime—the series is the TV adaptation of the joint creation of Daniel Abraham and Ty Franck, who authored nine hefty books under the pseudonym of 'James S. A. Corey' to build their universe.[3] At the very bare bones-level, their universe is set in the 23rd century, and populated by three main geospatial entities: 1) *Earth*, represented by a unitary political body of the United Nations (UN) and its military branch of the United Nations Navy (UNN), 2) *Mars*, with the Mars Congressional Republic (MCR), alongside its military wing of the Mars Congressional Republic Navy (MCRN)[4], and 3) the (asteroid) *Belt*, denoting the large

[2] Attributed to Joanna Russ (1995, 22-23), she describes the subjunctivity of science fiction in the following manner: "this limbo, this no-man's-land of not-possible, not-impossible inheres in the least sophisticated science fiction—a very different matter from fantasy, in which the impossibility is both clear and insisted upon (*what cannot happen*)."

[3] Unfortunately, as is the case with many things, IR has been relatively late in theorizing about *The Expanse*. The world has been picked up by several disciplines, including philosophy. See Nicholas (2022).

[4] In case the reader becomes curious about why the navies are so prominent in this universe, it is due to the role that navies played it the initial exploration of space. In book 3, Corey (2013, 183) says the following: "The inner planets came out to the black with an understanding that they were soldiers sent to a foreign land. Bull remembered the feeling from when he'd first shipped out: the sense that his home was behind him. For the inners, the expansion out into the solar system had always had the military at its core. The Belters didn't have that. They were the natives here. The forces that had brought their ancestors out to the Belt had roots it trade, commerce, and the overwhelming promise of freedom. The OPA had begun its life more like a labor union than a nation. The difference was subtle but powerful, and it showed in

swath of the Sol system located somewhere between the orbits of Mars and Jupiter, with the Outer Planets Alliance (OPA) as its self-anointed and extremely decentralized representative.[5] Subsequently, the people populating these entities are called Earthers, Martians, and Belters, or using more normative language, *inners*—since both Earth and Mars are part of the inner planets of the Sol system, and *skinnies*—due to the morphology in the Belter physique from growing up in low gravity, producing their elongated body structure.[6] While I am tempted to list more actors here that appear in the books but beyond the scope of the TV series, I think the three is reductive but sufficient to illustrate the broad astropolitics of the universe.

As far as political history goes, we know that Mars was once a colony of Earth and it was only able to gain independence after the serendipitous discovery of the Epstein drive, so named after the Martian named Solomon Epstein who stumbled upon "the first fusion drive that solved the heat buildup and rapid fuel consumption problems of constant thrust" (Corey 2013, 82).[7] By sharing this technology with Earth, Mars was able to obtain political autonomy. Still, Earth is seen as the mother of humanity, with its plentiful air and fertile soil, which nevertheless, coexists with the perception of a "civilization in decay" that sustains "a degrading infrastructure" that spends close to "30 percent of its total output on recycling systems to keep the population from drowning in its own filth," and populated with "lazy, coddled citizens" who are given a basic income from the government (Corey 2012, 160). Meanwhile, Mars prides itself in having "virtually no unemployment" with the entire population engaging indirectly or directly in some elements of terraforming of its planet, which creates "a sense of purpose, a shared vision of the

strange ways." In the end, this ambiguity concerning the structural nature of these main entities probably helps with analogical reasoning.

[5] I do not necessarily mean decentralized in a negative way here. In book 8, there is a reference to the Belters using this to their advantage: "Decentralized authority was what Belters had done since the start, generations ago, when the power to communicate orders outdistanced the power to enforce them. Old Rokku, back in her radical days, had talked about the inners being like a sword that hit in one place hard enough to destroy. The Belt was like water, able to push in from all places at once," (Corey 2019, 363).

[6] According to the books, only two-thirds of the Belters can even attempt to tolerate full gravity, and this is with the help of full medical care and "exoskeleton support mechs" (Corey 2015, 224).

[7] There is a segment in book 4 that highlights just how important this discovery was to the larger astropolitics: "Mars had been the first. Not the first station or the first colony, but the first attempt by humanity to cut ties with Earth. The upstart colony that declared its independence. And if Solomon Epstein hadn't been a Martian and hadn't perfected his drive just when he had, Mars would have been the site of the first true interplanetary war. Instead, Earth and Mars had made the kind of rough friendship where each side could feel superior to the other and they'd set about carving up the solar system," (Corey 2014, 576).

future" (Corey 2012, 160). Finally, the Belt is the site of immense economic extraction, from resources such as platinum, iron, and titanium (Corey 2011, 19) along with political exploitation as when Earth and Mars rewrote tariff regulations on raw ore from the Belt, which aggravated the situation for Belter prospectors and asteroid miners (Corey 2016, 110).[8] This all fuels a stereotype that "Belters are crazy terrorists. Earthers are lazy gluttons. Martians are cogs in a great big machine," (Corey 2016, 130), although this stereotype is more often violated than upheld.

As one can guess from the appearance of the UN, there is a warmth of familiarity between the universe of *The Expanse* to our own; this was a deliberate decision by the authors to ground the universe in actualities. According to the two authors, "there's not a lot of science fiction that goes from a recognizable place now and to the Galactic Empire [of *Star Wars*]…you kind of skip over that part, and we didn't skip over that part," adding that "there's a lot of far future sci-fi like *Dune*, there's not a lot of sci-fi that falls in between those spaces, so we wanted to tell a story that took us from late *Apollo 13* to early *Dune*."[9] For all the technological advancements like the Epstein drive, there is an uninterrupted thread in the series that always attracts the reader's/viewer's gaze to the feats of ordinary humans (both literally and figuratively since there are no monster-like aliens in this universe). Perhaps this explains the insistence of an unchanged, almost banal quality of humans and of humanity against the spectacular background of inter-planetary colonization and spacefaring: in the words of James S. A. Corey (2011, 512-513), "Humans had been out of the gravity well a long time. Long enough to have developed the technology to cut that umbilical cord [to Earth], but they'd just never bothered to do it. Stagnant. Humanity, for all its desire to fling itself into every livable pocket it could reach, had become stagnant…Everyone too busy trying to survive to spend any time creating something new." In reference to a series of 'ring gates' that had suddenly made the exploration of 1,300 new solar systems possible, the authors note that "Even the most populous of the new systems only had eight or ten cities on a whole planet. It was a massive parallel experiment in the possible forms of human collective, a chance to remake the structure of culture itself. But somehow, it all

[8] This ties into a Belter term called '*saahas-maut*,' which is said to be a particular Belter emotion, ad translates into "the pleasure you take in hardship" (Corey 2017, 350).
[9] In-class Zoom conversation with Daniel Abraham and Ty Franck (September 19, 2022).

wound up seeming very familiar," (Corey 2017, 44). The star-flung universe and its various nova still manage to leave much room for correspondence with our experiential world.

There are, of course, differences, which is why as the section heading suggests, *The Expanse* is neither impossible nor possible, containing events that have not happened, but not those that could not have happened. Case in point, there are social tensions that emanate from the identities that are built around each of the three spatialities. One such tension is the differential effects of gravity. As I had hinted at earlier, Belter bodies have been molded by microgravity, resulting in not only internally frail bone density but also the exterior frame of elongated limbs. So the immediate 'cognitive estrangement' that we encounter is that melanin no longer becomes the firewood for 'racism'—in fact, there is a blending that goes beyond mixing, to produce a more ethnically heterogenous population—but there still exists a kind of tribalism and concurrent discrimination of in-group and out-group founded on a complex mixture of biology and socio-physical environment. As the research continues in our own world about human genetic adaptation to high altitudes such as the 'barrel-chest' of the Andean population (Rupert and Hochachka 2001; Julian and Moor 2019), the morphology of human physique that we see in a Belter does not create the degree of impossibility that perhaps time travel presents for the current-day audience. Things are refracted at just the right angle that we can question something like racism but from the inside-out and bottom-up from the universe of *The Expanse* rather than simply transpose concepts top-down from our current world.

Analogical Reasoning in Action

So far, I have discussed science fiction from the perspective of literary studies to describe the critical role that subjunctivity plays in this particular genre or mode, to then illustrate how *The Expanse* fulfills this classic balance between the not-possible and not-impossible. Here, I aim to connect this to analogical reasoning and explain how *The Expanse* can be utilized to achieve such higher-order learning objectives in the IR classroom. In order to do so, I will address why subjunctivity may foster analogical reasoning and why analogical reasoning is important in light of learning objectives.

Simply put, analogical reasoning is "the ability to perceive and use relational similarity between two situations or events," (Gentner and Smith 2012, 130). A more comprehensive

definition that penlights our attention onto *connections* rather than simply similarities, is the one by Richland and Simms (2015, 177): "Analogical reasoning is the process of representing information and objects in the world as systems of relationships, such that these systems of relationships can be compared, contrasted, and combined in novel ways depending on contextual goals." Given this, so far, IR has engaged mostly with analogical reasoning to the extent that analogies have informed foreign policy (Mumford 2015). The most classic example is the work by Yuen Foong Khong (1992) who has documented the role that analogies have played for U.S. policy makers and their subsequent intervention around the world. There are limited references in the realm of pedagogy, though Pallas and Butcher (2017) have discussed how we can teach IR theory using analogies from the interpersonal realm of dating, while Inayatullah (2022) has likened analogical teaching to a theory of *travel,* as evidenced by an excerpt from his book below (Inayatullah 2022, 64):

> In *Resistance to Learning*, Marshall Alcorn writes, "The work of thought is not like driving a nail into a piece of lumber." Rather, teaching involves a "complex resituating of thought in new contexts where different emotional attitudes allow reflective cognitive consolidation. You cannot drive thought into a mind of a thinker." However, what we can do is change contexts. For example, we can discuss British imperialism in the nineteenth century when the target is US imperialism in the twenty-first. This change allows "an anxious thought to become drained of its attendant anxiety." Translation: teaching works analogically. Making a point requires us to travel away from it. Teaching is, therefore, a branch of a theory of travel**.** Hammering a nail into its target, on the other hand, speaks to the teacher's anxiety, to the teacher's inability to trust in travel."

If teaching does fundamentally work best in an analogical manner, I would argue that supplying an entire universe that is not our own is just a more explicit expression of this trust in travel.

It is worth noting that the literature on analogical reasoning has consistently documented the cognitive mechanisms underlying these skills and identified these to be of higher-order thinking (Waltz et al. 1999; Morrison et al. 2004; Viskontas et al. 2004; Bunge, Wendelken, Badre and Wagner 2005; Cho, Holyoak, and Cannon 2007; Krawczyk et al. 2008). This maps on fairly well to the way that we as educators have tended to approach learning objectives or outcomes in the classroom. The most well-known and heavily adopted model here is Bloom's (1956) taxonomy—a cumulative or sedimentary classification of different cognitive objectives and skills for categorizing educational goals, typified by a pyramid starting from 'knowledge' at the bottom, to 'comprehension,' 'application,' 'analysis,' 'synthesis,' and 'evaluation' at the very

top (sometimes the pyramid is depicted as a cake, in order to emphasize that each level is built on a foundation of the previous levels). Among efforts to revise the original taxonomy, the one with most traction has probably been the framework by Krathwohl (2002), whose main innovation was to convert the pyramid into a two-dimensional framework consisting of *knowledge* and *cognitive processes*: the former including four subcategories of *factual, conceptual, procedural,* and *metacognitive* knowledge, with the latter resembling Bloom's original six categories but in their verb forms to better fit objectives and a slight shift in order, now starting with *remember, understand, apply, analyze, evaluate,* and then to *create* (see table 1).

Table 1. Krathwohl's Revised Taxonomy of Learning Objectives/Outcomes[10]

The Knowledge Dimension	**The Cognitive Process Dimension**					
	Remember	*Understand*	*Apply*	*Analyze*	*Evaluate*	*Create*
Factual Knowledge						
Conceptual Knowledge						
Procedural Knowledge						
Metacognitive Knowledge						

According to Krathwohl (2002, 218), once you complete a taxonomy table, its entries can be "used to examine relative emphasis, curriculum alignment, and missed educational opportunities," and that "based on this examination, teachers can decide where and how to improve the planning of curriculum and delivery of instruction." Based on some of the common arguments that I reviewed earlier for why popular culture would be useful in IR instruction—as a familiar anchor, to engage students better, and to enhance understanding of complex theories and concepts—the utility of popular culture reinforces the cognitive dimension of 'understand' as the main learning outcome. Moreover, this particular process seems to match up most closely to *factual knowledge* on the knowledge dimension, which represents "the basic elements that

[10] Replicated with minor changes, Krathwohl (2002, 216).

students must know to be acquainted with a discipline or solve problems in it"[11] (Krathwohl 2002, 214).

The ability to enhance understanding is clearly important, which is why it is a key pillar of learning outcomes. However, this is not the same as saying that it is the only one that matters, or that it is even the most important one. Thinking about analogical reasoning, its core component of comparing, contrasting, and reconstituting systems of relationships seems to fall most closely in line with the objective of *analyze*, "breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose" (Krathwohl 2002, 215) and to *conceptual knowledge*, or "the interrelationships among the basic elements within a larger structure that enable them to function together" (Krathwohl 2002, 214).

Let me demonstrate this concretely using an example from *The Expanse*. Early on in the course, I had assigned my students a chapter from Buzan and Hansen (2009, 10-13) who pose four questions that structure International Security Studies (ISS): whether to privilege the state as the referent object, whether to include internal as well as external threats, whether to expand security beyond the military sector and the use of force, and whether to see security as inextricably tied to a dynamic of threats, dangers and urgency. While all four questions remained challenging to address, the first one in particular was particularly treacherous as we found ourselves consistently asking what a (sovereign) state even meant in the context of *The Expanse*. Could an entity like Earth be a considered a singular state, and the UN its unitary government? What happens when a key entity (the Belt) is clearly not a state? What are the implications of it being an alliance, diaspora, refugee, or migrant population? Through our in-class conversation with the authors, it became clear that all this ambiguity was intentional: at one point, Daniel Abraham said that there are "factions within factions within factions. There are governments that act like businesses. There are businesses that act like governments. There's governments that act like organized crime. There's organized crime. It's really terribly messy, and the starting position in *The Expanse* isn't the ending position."[12] In this example, rather than seeing the universe as a list of facts (i.e. the names of key actors, the locations of actors and so on), the universe must be first represented as systems of relationships (i.e. relations between major military powers, a

[11] Factual knowledge encompasses two subcategories: a) knowledge of terminology and b) knowledge of specific details and elements (Krathwohl 2002, 214).
[12] In-class Zoom conversation with Daniel Abraham and Ty Franck (September 19, 2022).

colonized populace, resource extraction etc.); only then can we make some judgment about what something like 'sovereignty' or 'states' might mean. I found this exercise to not only engage analogical reasoning and the *analyze* learning outcome—I also want to point out that the analogical portion here is not merely parallel description but actual comparison—but also *metacognitive knowledge* and here is why.

An unexpected but recurrent feedback from students was that they were pushed into being self-reflexive so as not to transpose their ready-made conceptions into a universe that was not of their own, which is essentially a component of *metacognitive knowledge*, or "knowledge of cognition in general as well as awareness and knowledge of one's own cognition" (Krathwohl 2002, 214). As the final project for the course, I assigned them the task of drafting a Defense White Paper from the perspective of one of the major actors of Earth, Mars, or the Belt, which I believe exemplifies the highest cognitive process of 'create.' The need to think through concepts like 'use of force' and 'war' from the ground-up and inside-out rather than top-down and outside-in placed challenged students to not only be creative but also be self-aware about any potential injection-mold definitions that they were carrying with them into the fictional universe, to self-scrutinize.

Interestingly enough, thinking through security from the ground-up and inside-out from the universe of *The Expanse* produced a mixture of those who ended up reinforcing the more conventional definition of state-based and militarized security and others who took a holistic approach in the tradition of human security, depending on which actor they decided to represent for their final papers. Hence, there was no streamlining in terms of definitions. In this sense, I am reminded of Pinar Bilgin's (2008, 5) article on thinking past 'Western' IR, where she argues that "what we think of as 'non-Western' approaches to world politics may be suffused with 'Western' concepts and theories," thereby producing not something completely radically different from 'Western' IR, but something *similarly different*. This resonates on several levels, as the concept of subjunctivity speaks to this balance between similarity and difference, while the final projects demonstrate exactly how theorizing about fictional universes may not necessarily take us in direction that is completely unexpected. I would also add that the insistence on popular culture as a refraction instead of reflection or mirroring also echoes this 'similarly different' quality. All this to say, how popular culture and specifically science fiction, could better aid in our project of decentering IR is a thread that is worth further exploring.

Concluding With an Analogy

So far, I have argued that there is a lot of value in popular culture for teaching IR, by reviewing the qualities of science fiction and using examples from the fictional universe of *The Expanse*. A reason for why we might be underutilizing the pedagogical potential of popular culture and especially science fiction, is that we had been unintentionally ambiguous about what learning outcomes can be achieved by resorting to the medium. Using the parlance of pedagogy then, I had explained how science fiction, by its virtue of allowing us to think of both what the world might be realistically changed into and what it should be changed from—supported by a kind of subjunctivity that presents neither the impossible nor the possible—actuates analogical reasoning, a higher-order cognitive function and part of the 'analyze' category of the revised Blooms' taxonomy of learning objectives.

I had also mentioned that due to the convention of science fiction to slightly bend or refract rather than accurately mirror or reflect collective behavior in world politics, we cannot help but to make observations about our own world in a self-reflective metacognitive manner. This is actually captured in part by Delany (2012, 142) when he discusses the language of science fiction in relation to cognition:

> What science fiction can do, however, is portray a different, an imagined, a nonexistent institution that works much better than, or often much worse than, or in the most interesting cases just very differently from, an existing one. The object priority in the reading conventions—which must begin with a consideration of some real institutions simply to understand how the science-fictional one works at all—generates the criticism directly in the understanding (cognition) process itself.

In alluding to a kind of 'criticism,' Delany's observation speaks to how the process of making a fictional world critically legible ultimately indulges us in an assessment about our own existing condition. The Belters may not entirely resemble the down-trodden of contemporary global society, but the morphology in their physique still forces us to contemplate how discrimination really functions in our experiential reality; hence, the pivotal coexistence in science fiction of familiarity and difference or of reinforcing *and* transcending at the same time.

Technically, my argument is not IR-specific. After all, the pursuit of higher-order learning outcomes is generalizable across multiple disciplines. I do think, however, science

fiction could be a particularly helpful rejoinder to IR because 1) it is less likely to inadvertently *re-nationalize* efforts at decentering[13] and its ultimate move away from state-centrism (i.e. neither Mars nor Earth represent sovereign nation-states), and; 2) it reminds us that decentering IR may not mean a radical departure from the center, as captured by Bilgin's reference earlier about the potential for 'non-Western' ways of doing IR to represent an awkward space of the similar but different vis-à-vis 'Western' IR. Just like the decentering project then, perhaps a fundamental utility of science fiction includes nudging us out of the familiar rather than some wholesale reconceptualization of a thing that exists. On that note, I would like to end this article by sharing a dialogue in book nine (Corey 2021, 275) of *The Expanse*, between two characters alluding to an analogy regarding microwaves (and monkeys):[14]

> "you think you know something, right? Then it turns out you were only *used* to it. It does something, and it does something, and then after a while, you think that's what it does. Then it turns out there was this whole other thing maybe."
>
> "Using a microwave as a lamp, because it has a light in it," Jim said. He tried to remember where he'd heard that analogy.
>
> "Yeah, exactly," Alex said. "You thought you knew it, but you were only familiar with it."

[13] By 'decentering', I am mainly referring to calls for 'interrogating, disturbing, engaging, reframing, challenging, mocking, or even undoing mainstream, privileged ways of viewing the world' (Nayak and Selbin 2010, 8). According to Nayak and Selbin (2010, 4) there are four attributes of what they see as a 'centered' IR: 'first, IR focuses primarily on and legitimizes the actions and decisions of the US and the global North/West. Second, IR privileges certain political projects, such as neoliberal economic policies, state-centrism, and Northern/Western liberal democracy. Third, IR legitimizes the most privileged socio-political players and institutions, in both the Global North/West and the Global South, to produce knowledge and make decisions about the rest of the world, thus replicating or maintaining certain unequal power relationships. Finally, IR examines certain understandings of political concepts (such as sovereignty) and particular narratives that can elide, distort, or completely miss multiple ways of understanding and living in the world'.

[14] Ty Franck also discussed this analogy in our Zoom dialogue. He says that "We, in one of the books, we talk about monkeys with microwaves. You know that one monkey thinks the microwave is a light, because when you open it a light turns on, and another one thinks it's a weapon because we put your hand in there it burns, and another one thinks it's a cabinet for storing things, but none of those things are true, and that's because monkeys don't know about frozen burritos, so they don't know what a microwave is for."

References

BARRATT, BETHANY. 2012. *The Politics of Harry Potter*. New York: Palgrave Macmillan.

BILGIN, PINAR. 2008. "Thinking Past Western IR?" *Third World Quarterly* 29: 5-23.

BLANTON, ROBERT. G. 2013. "Zombies and International Relations: A Simple Guide for Bringing the Undead into Your Classroom." *International Studies Perspectives* 14: 1-13.

BLOOM, BENJAMIN S., AND DAVID R. KRATHWOHL. 1956. *Taxonomy of Educational Objectives: The Classification of Educational Goals, by a Committee of College and University Examiners. Handbook 1: Cognitive Domain.* New York: Longmans.

BOGGS, CARL AND TOM POLLARD. 2008. "The Imperial Warrior in Hollywood: Rambo and Beyond." *New Political Science* 30: 565-78.

BOULD, MARK AND SHERRYL VINT. 2009. "There is No Such Thing as Science Fiction." In *Reading Science Fiction*, edited by James Gunn, Marleen Barr, and Matthew Candelaria, 43-51. New York: Palgrave.

BUNGE, SILVIA A., CARTER WENDELKEN, DAVID BADRES, AND ANTHONY D. WAGNER. 2005. "Analogical Reasoning and Prefrontal Cortex: Evidence for Separable Retrieval and Integration Mechanisms." *Cerebral Cortex* 15: 239-49.

BUZAN, BARRY. 2010. "America in Space: The International Relations of *Star Trek* and *Battlestar Galactica.*" *Millennium* 39: 175-80.

BUZAN, BARRY AND LENE HANSEN. 2009. *The Evolution of International Security Studies*. Cambridge: Cambridge University Press.

CASO FEDERICA AND CAITLIN HAMILTON (EDITORS). 2015. *Popular Culture and World Politics: Theories, Methods, Pedagogies.* Bristol, UK: E-International Relations.

CHO, SOOHYUN, KEITH J. HOLYOAK, AND TYRONE D. CANNON. 2007. "Analogical Reasoning in Working Memory: Resources Shared Among Relational Integration, Interference Resolution, and Maintenance." *Memory & Cognition* 35: 1445-55.

CLAPTON, WILLIAM AND LAURA J. SHEPHERD. 2016. "Lessons from Westeros: Gender and Power in Game of Thrones." *Politics* 37: 5-18.

COLLEEN, G. JULIAN AND LORNA G. MOOR. 2019. "Human Genetic Adaptation to High Altitude: Evidence from the Andes." *Genes* 10: 1-21.

COREY, JAMES S. A. 2021. *Leviathan Falls*. New York: Orbit Books.

COREY, JAMES S. A. 2019. *Tiamat's Wrath*. New York: Orbit Books.

COREY, JAMES S. A. 2017. *Persepolis Rising.* New York: Orbit Books.

COREY, JAMES S. A. 2016. *Babylon's Ashes.* New York: Orbit Books.

COREY, JAMES S. A. 2015. *Nemesis Games.* New York: Orbit Books.

COREY, JAMES S. A. 2014. *Cibola Burn.* New York: Orbit Books.

COREY, JAMES S. A. 2013. *Abaddon's Gate*. New York: Orbit Books.

COREY, JAMES S. A. 2012. *Caliban's War.* New York: Orbit Books.

COREY, JAMES S. A. 2011. *Leviathan Wakes.* New York: Orbit Books.

CRILLEY, RHYS. 2021. "Where We At? New Directions for Research on Popular Culture and World Politics." *International Studies Review* 23: 164–80.

DELANY, SAMUEL R. 1977. *The Jewel-Hinged Jaw: Notes on the Language of Science Fiction* Elizabethtown, New York: Dragon Press.

DELANY, SAMUEL R. 2012. *Starboard Wine: More Notes on the Language of Science Fiction*. Middletown, Connecticut: Wesleyan University Press.

DIXIT, PRIYA. 2012. "Relating to Difference: Aliens and Alienness in "Doctor Who" and International Relations." *International Studies Perspectives* 13: 289-306.

DYSON, STEPHEN BENEDICT. 2015. *Otherworldly Politics: The International Relations of Star Trek, Game of Thrones, and Battlestar Galactica*. Baltimore: Johns Hopkins University Press.

ENGERT, STEFRAN AND ALEXANDER SPENCER. 2009. "International Relations at the Movies: Teaching and Learning about International Politics through Film." *Perspectives* 17: 83-103.

FURMAN, DANIEL, J. AND PAUL MUSGRAVE. 2017. "Synthetic Experiences: How Popular Culture Matters for Images of International Relations." *International Studies Quarterly* 61: 503–16.

GENTNER, DEDRE, AND LINSEY A. SMITH. 2012. "Analogical Reasoning." In *Encyclopedia of Human Behavior*, 2nd Ed., edited by Vilayanur S. Ramachandran, 130–36. Oxford, UK: Elsevier.

GERAGHTY, LINCOLN. 2008. "A Truly American Enterprise: Star Trek's Post-9/11 Politics," In *New Boundaries in Political Science Fiction*, edited by Donald M. Hassler and Clyde Wilcox, 157-66. Columbia: University of South Carolina Press.

GIBERT, MARIE V. 2015. "Using Elements of Popular Culture to Teach Africa's International Relations." *Politics* 36: 495-507.

GONZALEZ, GEORGE A. 2017. *The Absolute and Star Trek*. Cham: Palgrave Macmillan.

GOULART, WOODY AND WESLEY Y. JOE. 2008. "Inverted Perspectives on Politics and Morality in Battlestar Galactica," In *New Boundaries in Political Science Fiction*, edited by Donald M. Hassler and Clyde Wilcox, 179-97. Columbia: University of South Carolina Press.

HAMILTON, MARK D. 2009. “Poli Sci-Fi 101: Lessons from Science Fiction Television for Global and Outer Space Politics,” In *Securing Outer Space*, edited by Natalie Bormann and Michael Sheehan, 205-20. Oxon: Routledge.

HANNAH, ERIN AND RORDEN WILKINSON. 2014. “Zombies and IR: A Critical Reading.” *Politics* 36: 5-18.

INAYATULLAH, NAEEM. 2022. *Pedagogy as Encounter: Beyond the Teaching Imperative*. Lanham: Rowman & Littlefield.

IRISH, ADAM, NICOLE SHERMAN, AND LEVI WATTS. 2022. “Targaryen Thought Experiments: Do Science Fiction and Fantasy Examples Aid or Obfuscate Student Learning?” *International Studies Perspectives*. Accessed October 1, 2022. doi.org/10.1093/isp/ekab016.

KHONG, YUEN FOONG. 1992. *Analogies at War*: *Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*. Princeton, New Jersey: Princeton University Press.

KIERSEY, NICHOLAS J. AND IVER B. NEUMANN (EDITORS). 2013. *Battlestar Galactica and International Relations*. Abingdon: Routledge.

KRATHWOHL, DAVID R. 2002. “A Revision of Bloom’s Taxonomy: An Overview.” *Theory into Practice* 41: 212-18.

KRAWCZYK, DANIEL C., ROBERT G. MORRISON, INDRE VISKONTAS, KEITH J HOLYOAK, TIFFANY W. CHOW, MARIO F. MENDEZ, BRUCE L. MILLER, AND BARBARA J. KNOWLTON. 2008. “Distraction During Relational Reasoning: The Role of Prefrontal Cortex in Interference Control.” *Neuropsychologia* 46: 2020–32.

LARSSON, SIMON AND MARKUS LUNDSTRÖM. 2020. “Anarchy in the Game of Thrones.” *Neohelicon* 47: 117-29.

MORRISON, ROBERT G., DANIEL C. KRAWCZYK, KEITH J. HOLYOAK, JOHN E. HUMMEL, TIFFANY W. CHOW, BRUCE L. MILLER, BARBARA J. KNOWLTON. 2004. “A Neurocomputational Model of Analogical Reasoning and its Breakdown in Frontotemporal Dementia.” *Journal of Cognitive Neuroscience* 16: 260–71.

MORRISSETTE, JASON J. 2014. “Zombies, International Relations, and the Production of Danger: Critical Security Studies versus the Living Dead.” *Studies in Popular Culture* 36: 1-27.

MUMFORD, ANDREW. 2015. “Parallels, Prescience and the Past: Analogical Reasoning and Contemporary International Politics.” *International Politics* 52: 1-19.

NAYAK, MEGHANA AND ERIC SELBIN. 2010. *Decentering IR*. New York: Zed Books.

NEUMANN, IVER B. AND DANIEL H. NEXON. 2006. “Introduction: Harry Potter and the Study of World Politics.” In Harry Potter and International Relations, edited by Daniel H. Nexon and Iver B. Neumann, 1-23. Oxford, UK: Rowman & Littlefield.

NICHOLAS, JEFFERY L (EDITOR). 2022. *The Expanse and Philosophy: So Far Out into the Darkness*. New Jersey: John Wiley & Sons.

PALLAS, CHRISTOPHER AND CHARITY BUTCHER. 2017. "Using Dating as an Analogy to Teach IR Theory." *European Political Science* 16: 99-112.

RICHLAND, LINDSEY ENGLE AND NINA SIMMS. 2015. "Analogy, Higher Order Thinking, and Education." *WIREs Cognitive Science* 6: 177-192.

RIEDER, JOHN. 2010. "On Defining SF, or Not: Genre Theory, SF, and History." *Science Fiction Studies* 37: 191-209.

ROBERTS, ADAM. 2006. *The History of Science Fiction*. Houndmills: Palgrave Macmillan.

RUPERT, J. L. AND P. W. HOCHACHKA. 2001. "Genetic Approaches to Understanding Human Adaptation to Altitude in the Andes." *Journal of Experimental Biology* 204: 3151–160.

RUSS, JOANNA. 1995. *To Write Like a Woman: Essays in Feminism and Science Fiction.* Bloomington: Indiana University Press.

SACHLEBEN, MARK. 2014. *World Politics on Screen: Understanding International Relations through Popular Culture*. Lexington: University Press of Kentucky.

SCHELLING, THOMAS. 1960. Strategy of Conflict. Cambridge, Mass.: Harvard University Press.

TURZI, MARIANO. 2022. *The International Politics of Superheroes*. Lanham: Rowman & Littlefield.

VISKONTAS, INDRE V., ROBERT G. MORRISON, KEITH J. HOLYOAK, JOHN E. HUMMEL, BARBARA J. KNOWLTON. 2004. "Relational Integration, Inhibition and Analogical Reasoning in Older Adults." *Psychology and Aging* 19: 581–91.

WALTZ, JAMES A., BARBARA J. KNOWLTON, KEITH J. HOLYOAK, KYLE B. BOONE, FRED S. MISHKIN, MARCIA DE MENEZES SANTOS, CARMEN R. THOMAS, AND BRUCE L. MILLER. 1999. "A System for Relational Reasoning in Human Prefrontal Cortex." *Psychological Science* 10:119–25.

WEBER, CYNTHIA. 2001. "The Highs and Lows of Teaching IR Theory: Using Popular Films for Theoretical Critique." *International Studies Perspectives* 2: 281–87.

WELDES, JUTTA. 1999. "Going Cultural: Star Trek, State Action, and Popular Culture." *Millennium* 28: 117–34.

YOUNG, LAURA D. AND ÑUSTA CARRANZA KO. 2019. *Game of Thrones and the Theories of International Relations.* Lanham: Rowman & Littlefield.