Learning an Inclusive Blue Humanities: Oceania and Academia through the Lens of Cinema

James L. Smith 1,* and Steve Mentz 2

1 School of English and Digital Humanities, University College Cork, T12 K8AF Cork, Ireland
2 Department of English, St. John’s University, New York, NY 11439, USA; mentzs@stjohns.edu

* Correspondence: james.smith@ucc.ie

Received: 12 February 2020; Accepted: 20 July 2020; Published: 22 July 2020

Abstract: Hollywood films such as Pixar’s Moana (2016) and Warner Brothers’ Aquaman (2018) have drawn on the aesthetics and stories of the island cultures of Oceania to inform their narratives. In doing so, these works have both succeeded and failed to respect and engage with oceanic cultural knowledge, providing a cultural vehicle to expand communication, while also exploiting Oceanic culture for financial gain. Cultural tropes and stereotypes pose a heavy intellectual burden that neither film fully shoulders, nor are the complexities of their content acknowledged. Moana sought to enlarge the franchise of the “Disney Princess” genre, but could not avoid issues of cultural appropriation and tokenism becoming entangled with an ongoing process of engagement. Moana’s desire to represent the cultural memory of Oceania raises questions, but while Pixar presents digital fantasy, Aquaman hides its global ambitions beneath star Jason Momoa’s broad shoulders. If the blue humanities is to follow the seminal postcolonial scholarship of Tongan and Fijian cultural theorist Epeli Hau‘ofa by exploring a counter-hegemonic narrative in scholarly treatment of the global oceans, then how can it respond with respect? This risk applies equally to academic literary inquiry, with a more inclusive mode of receptive and plural blue humanities as an emerging response.

Keywords: blue humanities; Oceania; First Peoples; film studies; post-colonial theory; reflection

1. Introduction

The blue humanities as a critical practice, especially as written by white scholars from the global north, runs an ongoing risk of being co-opted by imperial maritime histories, racializing ideologies, and the interests of capitalism. Oceanic criticism also has ongoing successes and mutually beneficial engagements with multiple other discourses. We propose that confronting habits of appropriation represents an essential task for this mode of scholarship moving forward. We also propose that the process of confronting one’s own internalized hypocrisies, dichotomies, and habits of thought to see a world that is more nuanced than imagined is, in itself, a productive endeavor for the blue humanities. The essential work will seek to create respectful engagements with many kinds of oceanic cultures, and to repeatedly re-evaluate its own praxis. ¹ To take up these questions, the authors—two white Anglophone blue humanities scholars whose primary training was in premodern English and European literatures—address in this article two popular films that adapt Indigenous cultural imagery and stories. The goal is to take lessons for a more inclusive set of behaviors within blue humanities scholarship.

We ask ourselves how to move beyond a Western “turn to the sea” that overlooks those who have already long inhabited oceanic spaces, and how to avoid the repetition of these habits in scholarship.

¹ For a guide to how this dialogue might and should take place through the lens of the material turn and its assumptions, see (Rosiek et al. 2019).
We treat two big-budget American films, *Aquaman* (2018) and *Moana* (2016), as microcosms for problematic practices and habits of thought within mainstream Western cultures. Our project asks how attention to Indigenous Oceanic voices can help us reread and re-imagine the problematic cultural fantasies of the global north. Our stated goal is not to undertake film criticism, which lies outside of our expertise, but to seek correlations between patterns in the production of Hollywood blockbusters and our own ongoing blue humanities scholarship. By focusing on mass-market films, we deliberately choose collaborative and public art forms that, even if they do not fully succeed in moving beyond familiar capitalist patterns of appropriation, do attempt to listen to Oceanic voices. Both the films and our own scholarly practices attempt in different, but potentially interacting ways, to make oceanic spaces legible, and to uncover multiple ways in which the great waters engage with human bodies and cultural legacies.

We begin with resonant advice from the distinguished Māori scholar Alice Te Punga Somerville:

> I want to ask whether Ocean Studies might be better understood as if it were itself an ocean: without a singular starting point or origin; endlessly circulating. Not beyond genealogy, because nothing is, but possessed of a genealogy that is impossibly and beautifully wide. I attempt to sketch the ocean—and Ocean Studies—from the perspective of those who have not needed a ‘turn to the sea’ because we were already there. (Te Punga Somerville 2017, p. 28).

We take Te Punga Somerville’s mandate to require us, as blue humanities critics, to re-draw oceanic boundaries and concerns. We must constantly forget how to navigate, because the tools of navigation were born in an age of exploitation. Popular films make useful texts for this project because they so overtly attempt to transform the vast ocean into a Western cultural playground. They imagine a world of open spaces and capacious cohabitation, but chart a familiar course through long-ingrained practices. We will argue that attention to figurations of the ocean, even in these relatively un-self-conscious texts, can help us move toward a blue humanities criticism that aspires to global reach and critical generosity. This essay aims to be part of a long process of learning to inhabit pluralistic and inclusive blue humanities.

A necessary component of our efforts at respectful knowledge sharing in ocean studies will be to recognize the limits of our own expertise and to listen to a diversity of oceanic knowledge from beyond the global north. We embrace multiplicity and refuse totality. In this respect, we recognize different patterns in current representations of global blue humanities. In capturing global oceans and universal Anthropocene challenges, it can be easy to assert inappropriate and unwelcome master narratives. To take an example from one of our own recent publications, claims about the changing “symbology” of ships on the “World Ocean” (Mentz 2015, p. 7) during the early modern period might have benefitted from considering the voyaging waka of Pacific Islanders. Other scholars, however, engage more directly with voices from Oceania (see DeLoughrey 2019; Shewry 2015). Mapping global blue humanities for the twenty-first century requires a deliberately inclusive scholarly apparatus, made up of a community of listeners and amplifiers, rather than talkers and totalizers. The mentality of a “sea of islands,” as noted by Tongan and Fijian cultural theorist Hau‘ofa (2019, pp. 31–32), famously contains neither centers nor peripheries, neither linear projections nor convenient overviews. The dynamics of reaching beyond one’s cultural limitations may appear familiar, but such interventions and critiques are challenging to implement fairly or equitably. Good intentions do not automatically lead to good results.

Popular culture can provide an effective lens for demonstrating pitfalls and possibilities for the blue humanities and its globalities. Rather than seeing the blue humanities as singularly global or globalized, we proffer a plurality, and we explore that plurality in the production of globally produced and marketed films. The film industry, however, tends to value inclusivity only insofar as it sees potential for new audiences and markets. Film companies engage consultants, directors, and actors to remedy their self-identified deficiencies in representation and historic racism. This practice highlights a conundrum: past representations—often featuring problematic depictions such as the racism of Disney’s infamous *Songs of the South* (1946)—remain bankable, and continue to have influence into the
twenty-first century. The value of these retrograde materials appears in the recent decision to flag, but not omit, problematic content in the Disney+ streaming service, while profiting from the vast (and often racist) back catalogue that made the service appealing in the first place.\(^2\) It is equally the case that Disney is not a monolithic construct, and its engagements with those that it depicts are more complex than may be initially apparent. Listening to the stories of these events in the words of those that experienced them can complicate the process.

Recent Hollywood films such as Warner Brothers’ *Aquaman* (2018) and Disney’s *Moana* (2016) have drawn on the aesthetics and stories of the cultures of Oceania to inform their mass-market narratives. These works have a complex relationship with oceanic cultural knowledge. Their commitments to diversity function as what Ahmed (2019, p. 117) terms “non-performative”, the process by which “discourse does not produce the effect that it names”. Cultural tropes and stereotypes pose a heavy intellectual burden that neither film fully shoulders. These films gesture toward Oceania and even engage with some of its voices, even though they also defer to the primary imperatives of the market. *Moana*’s desire to transform Indigenous culture into a version of Disney’s quasi-feminist revisionism does at least raise questions about cross-cultural justice, even if it shies away from some of the questions it raises. While *Moana* presents digital fantasy, *Aquaman*’s global ambitions peek out from the Pacific Islander actor Jason Momoa’s broad shoulders, even as his story appears in an American superhero frame populated by white characters. Setting out with money, power, and privilege wielded clumsily in the name of diversity may only burnish the mirror of Western self-regard.

The cultural imagery of Oceania in these films should trouble and challenge blue humanities scholars, particularly white scholars from the Anglophone core. Scholars who wish to follow Hau’ofa’s postcolonial vision may feel uncertain about how to explore this material with respect. *Moana* and *Aquaman* highlight the risks of appropriation and utilitarian repurposing of the narratives and experiences of first peoples, the theft of ideas and their repackaging. This risk applies to academic literary inquiry, as well as for-profit entertainment. Indigenous observers of these films are familiar with centuries of anthropological interventions in their cultures, seeking to fit their legacies into modes that are familiar and palatable to Europeans. Twenty-first-century cinema readily perpetuates these tendencies, even as it tries to transcend them.

This essay aims to provoke reflections about how the blue humanities as an emerging critical discourse shares traits with the global capitalist processes that produced *Aquaman* and *Moana*. We hope to show, in both the films, the developing critical mode’s complex combinations of success and failure, internal heterogeneity, and uneven self-awareness. We attempt, in these pages, to respond and listen to the scholarship of those who know the effects of exploitation and asymmetries of power best. We propose that more introspection and less intervention is needed if the blue humanities is to methodologically engage with the plurality of regions, such as Oceania. We seek an ever-broadening capacity to listen and adapt. The chief message of the climate crisis, globalization, and the political ecologies that dominate the discourse of blue humanities is that top down interventions and privileged empathy warp the world. The only solutions for scholarship, for the production of cultural narratives, and for the sharing and anti-racist levelling of discourse arrive when authors take a step back from critical inquiry and value what already exists, has already been said, and has already been critiqued. Everyone benefits from this openness.

### 2. Aquaman

#### 2.1. Bodies and Authenticity

With its 200 million USD budget and 1.1 billion USD global box office take, James Wan’s blockbuster *Aquaman* seems to focus less directly than *Moana* on the niceties of cultural appropriation. The film

\(^2\) See [https://time.com/5730892/disney-plus-content-warnings-racist-movies/](https://time.com/5730892/disney-plus-content-warnings-racist-movies/) (accessed on 28 November 2019).
adapts an American comic book series that debuted in 1941, featuring a culturally Anglo super-hero who rules beneath the waves. The transformation of Aquaman into a Pacific Islander relies largely on Hawai’ian-born actor Jason Momoa’s physical presence and Māori tattoos. There is little cultural depth to the figure’s Pacific-ness in the story, though the casting of Māori actor Temuera Morrison as Arthur/Aquaman’s father generates a subtle Oceanic sub-thread. The film’s primary plot, which Momoa’s character’s named “Arthur” emphasizes, recapitulates England’s Camelot master-narrative, in which the true-born prince proves himself by pulling a sword, or Neptune’s trident, out of a stone. The Anglo faces of Nicole Kidman in the part of Atlanna, Arthur’s mother, and Patrick Wilson, as Arthur’s half-brother and rival, reinforce the ways in which the water-world represents a pre-Civil Rights American fantasy of whiteness.

The relationship between Arthur and his father Thomas Currey, played by Pacific Islanders Momoa and Morrison, carves out a visible, if small, space of internal resistance to the Anglo-American master plot. Even though Arthur and Thomas Currey live on the rocky coast of Maine, a pocket of relative lack of ethnic diversity within the northeastern United States, their presences together voice a mostly unspoken Oceanic subtext. When father and son greet each other in an early scene in the film, the actors put their foreheads together and allow their breaths to mingle in a gesture the Māori call *hongi.* The undersea kingdom of Atlantis remains ruled by the Anglo bodies of Patrick Wilson and Nicole Kidman, and the two Māori actors appear geographically distant from the Pacific, but this subtle gesture toward Māori culture de-essentializes Pacific Islander identity and re-locates it in distant Maine. While many of the film’s global viewers may miss this allusion, and many others might also miss the gesture toward Temuera Morrison’s previous role as Māori Jake Heke, the violent and hard-drinking hero of *Once We Were Warriors* (1995), an Oceanic presence resides within the mass-market superhero movie.

Not all the ways in which the film uses Momoa’s Pacific Islander voice and body are equally open to Oceanic interpretations. The film’s first words, spoken by Momoa in voice over, cite their source as “Jules Verne,” a citation which Europeanizes the film via the French underwater modernist writer and progenitor of science fiction. *Aquaman* does have some deep-water charms, including a feminist twist on the siren/selkie myth that shows the Queen of the sea ultimately return to her human lover. However, the film’s Western representation of Pacific Islander culture as set dressing—a deeply-ingrained Hollywood habit—remains problematic. To interpret this film through a global blue humanities lens requires a double vision that can both perceive hints of Oceanic subtext and seek ways to resist or reimagine the Anglo-European master plot.

When Jason Momoa was cast in the lead role for *Aquaman,* the press treated his Pacific Islander heritage as evidence of Hollywood’s desire for more varied representation. In an interview with Black Entertainment Television, Momoa reports that the director, Zack Snyder, considered Momoa’s ancestry as important to the casting decision. “I want you to play Aquaman,” Momoa reports Snyder saying to him, “You’re half white, you’re half Polynesian. Obviously, the Polynesians have their own water gods. Why wouldn’t you take this [points to arm with tattoos] and put it all over.” For Momoa, and for the marketing arm of Warner Brothers, casting Momoa sounded like “kind of a neat perspective to go from two different worlds” (Barrow). The actor’s multi-racial heritage, and his prominent tattoos, serve in the film as visual symbols of a somewhat generic “Polynesian” identity. When Momoa and crew performed a version of the Māori haka during the movie’s Los Angeles premiere, the effect was part Hollywood extravaganza—Momoa carried a golden trident with him during the dance, and most of the dancers wore blue jeans—and part pride-filled performance inside the heart of a global cultural

---

3 On the origins of the *hongi,* see https://www.teara.govt.nz/en/artwork/41176/origin-of-the-hongi. Accessed 19 April 2020.

4 We thank one of our anonymous peer reviewers for suggesting this reading.

4 Interview written by Jerry L. Barrow. https://www.bet.com/celebrities/exclusives/aquaman-jason-momoa-entourage.html (accessed on 9 December 2019).
Watching the dance, like watching the multi-hour special effects extravaganza of Aquaman itself, contains moments that might make white blue humanities professors feel twinges of guilt at cultural appropriation. However, one useful critical project might be to surface and make more central the Oceania-themed elements of the film, while recognizing that these elements are slotted into an oceanic fantasy from a mid-century American white teenage-boys’ comic-book. Momoa’s arm tattoos and his Oceanic heritage are perfectly real, even if it is hard not to suspect that some video editing made him appear even more chiseled on the big screen.

While watching the movie, different Pacific Islander identities, including Hawai’ian and Māori in particular, blur together, in particular when viewed from the transatlantic North. Scholarship demands particularity and historical precision, as much as possible, but the entertainment industry, in twenty-first century Hollywood, relies on pushing emotional buttons more than historical accuracy. The mismatch between Momoa’s tattooed arms and the homogenized global culture of superhero movies asks blue humanities scholarship to perform two actions at once. Blue humanists need to disentangle the money-fantasies of global entertainment from the particular histories and prehistories that connect the Hawai’i of the United States to the Aotearoa of New Zealand. What the director Zack Snyder calls “Polynesian” should send a blue humanities scholar to the more careful writings of figures, such as the Samoan poet and writer Albert Wendt, as well as Epeli Hau‘ofa, to explore what both men also call “Oceania”. Te Punga Somerville (2017, p. 26) observes, “Oceania thus operates as a code word,” which includes not just the islands of the Pacific and their peoples, but also a “large and every-expanding body of scholarly, cultural, activist, and educational work.” Te Punga Somerville, who notes that the European “discoverer” Vasco Nuñez de Balboa’s naming of the Pacific as the “Mar del Sur” was itself “an act of imagination” (Te Punga Somerville 2017, p. 25), emphasizes that Pacific culture includes a wide plurality of perspectives, languages, cultures, and knowledges. It is hard to imagine how a scholar like Te Punga Somerville might react to big screen schlock like “Aquaman.” However, as this essay considers how popular movies can help guide white blue humanities scholars toward ethical engagement with Pacific Islanders studies, the distant echoes and potential connections between Momoa’s and Morrison’s presences within a mass-market blockbuster and the poly-cultural erudition toward which Te Punga Somerville gestures, seem both daunting and essential.

A representative figure who can help reimagine the history of collaborative contact between Anglophone intellectual culture and Oceania is, strange as the proposition may seem, the celebrated eighteenth-century Oceanic navigator Tupaia. The cross-cultural collaboration between Tupaia and Captain James Cook has, until fairly recently, been largely imagined as Cook the discoverer being aided by the Polynesian navigator. Recent work on Tupaia, and in particular the map he co-made, which now resides in the British Library, emphasizes what Ecstein and Schwarz (2019, p. 5) have called “a collaborative, cross-cultural process that by default involved at least two, if not more partners.” This collaboration thus represents the coming-together of a plurality of voices to produce a plurality of meanings. Originally from the island of Ra‘iatea, Tupaia joined the voyage of James Cook in 1769, and was with Cook for the “discovery” of New Zealand. The once-traditional view of their working relationship suggested that Tupaia’s language skills and navigational expertise supported the English expedition, but the indigenous navigator also represents a distinctive and independent way of knowing the ocean. The history of scholarship about Tupaia’s famous map of the islands surrounding Tahiti reveals the slow accommodation of Anglophone scholarship to the range of knowledge of Pacific Islander people. As Mack (2011, esp. pp. 80–91) observes in a recent analysis of Tupaia’s “chart,” mapping the ocean in Pacific context does not require objective measurements of space, but rather shows that from an Oceanic point of view “navigation is a complete, embodied, synaesthetic activity.” The long history of marginalizing Tupaia’s role in his collaboration with Cook can serve as a prod

---

5 The YouTube clip of the dance has been viewed more than 5.5 million times as of December 2019. https://www.youtube.com/watch?v=1vK166iSwQc (accessed on 9 December 2019).
to ensure that the contributions of Pacific Islanders to collaborative works such as *Aquaman* do not go unnoticed.

Mack extends his argument by suggesting that Cook and his sailors understood chart-making in a terrestrial context while Tupaia operated in an oceanic world (Mack 2011, p. 130). In fact, Tupaia’s chart may be best considered, as Mack demonstrates, as a cultural hybrid, bringing together Cook’s desire for a chart with the “more intense sensory experience” (Mack 2011, p. 130) of Pacific Islander way-finding. In this hybrid sense, the chart resembles *Aquaman* itself, though perhaps the map seems more dominated by the knowledges of Oceania, while the film may be considered primarily Western. When Te Punga Somerville (2012, p. 195) describes Cook’s ships as analogous to the modern “university … a constructed and mobile site for trade,” she emphasizes how the discourses of the modern university engage in “the histories, the relationships, the boundaries” that the ships of early contact first began. The big-budget Hollywood movie, itself a vast network of finances, distribution, discourse, and visual imagery, assumes a place in the pattern of cultural exchange that Te Punga Somerville elaborates. Momoa’s performance as Aquaman, with its narrative echoes of the story of England’s King Arthur combined with its Pacific Islander paternity in the relationship with Morrison, represents a further stage in Tupaia’s making his oceanic knowledge legible, by adapting European forms to communicate with European audiences. The map becomes a movie, and in so doing, it loses some, but perhaps not all, of its oceanic qualities.

2.2. The Geometry of Ocean

In the opening voice-over of *Aquaman*, Jason Momoa quotes a peculiarly abstract statement from the French novelist Jules Verne: “Put two ships on the open sea, without wind and tide, and at last they will come together.” Verne’s original statement goes on to elaborate a theory of dramatic narrative: “Throw two planets into space, and they will fall one on the other. Place two enemies in the midst of a crowd, and they will inevitably meet; it is a fatality, a question of time; that is all.” The full quotation, from *A Floating City* (French 1871, English 1874), clarifies that the writer is thinking about dramatic necessity in storytelling, in this case, the appearance on the passenger Liner *Great Eastern* of a former romantic partner of one of the novel’s main characters (Verne 1875, Ch. 16). The truncated version of the passage voiced by Momoa’s Arthur, however, implies that the “inevitability” of contact emerges as a feature of the ocean’s vast horizontal surface. In its treatment of the ocean as an infinite flatness, the voice-over avoids reckoning with the depth that, in Verne’s most famous maritime novel, placed his protagonists *Twenty Thousand Leagues Under the Sea*. As voiced in the film, Verne treats the ocean as a flat surface on which an ocean liner floats in *A Floating City*. However, blue humanities scholars know, as does Captain Nemo, that most of the ocean lies beneath, harder to access, but teeming with life.

The paradox of the enigmatic voice-over, which gestures toward maritime expansiveness, but overlooks the third dimension that provides the ocean most of its volume, poses a structural challenge to blue humanities scholars in coming to terms with Oceanic cultural knowledges. For many Anglophone and North Atlantic-centered scholars, it can be tempting to read the ocean as a trackless surface, awaiting the geometric and cartographic knowledge-structures that Captain Cook was hoping to provide to the Pacific islands that he visited in the eighteenth century. Opening one’s critical vision to a non-Western Pacific and to the embodied navigational modes represented by Tupaia and Pacific Islander cultures, however, can vastly increase the depth of the critical area one explores. As practiced in many Anglo-American contexts, the blue humanities risks performing a geometric oversimplification not unlike the film *Aquaman*’s use of Verne. A fuller and more complex view of oceanic depth awaits. The film *Aquaman* does not entirely overlook depth, and in fact, an entire undersea Kingdom of the Trench locates itself in the deep ocean, but the opening voice-over suggests

---

6 For another recent consideration of Tupaia, see (Thompson 2019, esp. pp. 80–91).
that the film-makers keep bringing the story back to European models and surface waters. One task of an inclusive blue humanities scholarship will be to expose and counter these Eurocentrizing efforts.

Contemporary blue humanities scholars have multiple conceptual resources to expand our visions. A recent example of UK-based theoretical scholarship by the cultural geographers Phil Steinberg and Kimberly Peters shows how considering a deeper and more expansive ocean can expand our horizons through purely intellectual means. In their most recent of four collaborative essays on oceanic ontologies, “The ocean in excess: Towards a more-than-wet ontology,” Steinberg and Peters (2019) examine how the ocean exceeds mere wetness. They suggest that the consideration of solid water at high altitudes and at the poles, as well as the massive amounts of water vapor in the atmosphere, reveal the error of thinking of “the ocean” as a purely liquid object. “The ocean is not an entity,” they write, “it is an extension” (Steinberg and Peters 2019, p. 295, their emphasis). Like the water column opening up beneath Momoa’s quotation from Verne, these critics come to embrace a vaster hydrosphere, “perpetually in mutation and . . . always exceeding the ocean’s geographic boundaries” (Steinberg and Peters 2019, p. 297). The missing piece of their ontological puzzle, however, is indigeneity. While their essay provides an engaging interpretation of Yann Martel’s novel Life of Pi, with its poetic evocations of the vastness of the Pacific, their work lacks direct engagement with Pacific cultures and waters. Theoretical work speaks compellingly, but must also engage with the physical “experience” of the oceanic encounter (see Mentz 2019).

Another visceral and intimate supplement to Steinberg and Peters’ theoretical extension of oceanic thinking appears in the work of surf-epistemologist Karin Animoto Ingersoll, in her book Waves of Knowing: A Seascape Epistemology (Ingersoll 2016). “When I enter the ocean, my indigenous identity emerges,” she writes, “I become a historical being riding waves, running as a liquid mass, pulled up from the deep and thrown forward with a deafening roar” (Ingersoll 2016, p. 1). Although she is herself also part Chinese and has no “legal documentation of my Hawaiian blood” (Ingersoll 2016, p. 2), she accepts the oral history of her mother’s family and theorizes herself as Hawaiian, in order to “pull indigenous peoples away from the binary oppositions between the ‘colonizer’ and the ‘colonized’” (Ingersoll 2016, p. 3). Ingersoll’s pedagogical and critical project re-imagines Pacific waves as sites of immersion and knowledge. Engaging with Māori poet Robert Sullivan among other contemporary Pacific Islander writers, she envisions an intertwining of human and ocean. “Attempting to articulate our relationships with nature, with the ocean,” she writes, “is to be human” (Ingersoll 2016, p. 184). Oceanic practices, including Ingersoll’s surfing, Tupaia’s wayfaring, Sullivan’s poetry, and Te Punga Somerville’s literary criticism, as well as such non-Pacific engagements as Serpil Oppermann’s exploration (Oppermann 2019) of Mediterranean Sea cultures, enable human bodies to craft global oceanic identities. Not all of these critical modes speak equally to the mass-market film Aquaman, but the culturally expansive blue humanities that they collectively imagine provides a rich context in which to read global culture and Hollywood blockbusters.

3. Moana

3.1. Tangled Agencies and Identities

Disney has long translated European folklore into the larger-than-life prism of Hollywood cinema. The core principles of the “Disney Princess” franchise, dating back to 1937 and Snow White, rest on the fundamental archetypes of the fairy tale. The risk of the genre is that when the princess appears in Middle Eastern, East Asian, or Oceanic contexts, the established brand and its internal logic—culture, gender, cosmology, values, mores—morph and distort to maintain the European (or American imagining of European) fairy tale. Despite this influence, drawing useful analogies between the act of filmmaking and that of scholarship cannot rely on monolithic constructions of identity. Disney is internally heterogeneous, just as all peoples, scholars and cultures are co-composed by a variety of synergistic or conflicting influences. Navigating the complex whorls of identity and action inherent in both the genre of the Disney Princess and the act of blue humanities writing is never
complete. The result of scholarship, like that of princess films seeking to enlarge and better their global storytelling, is incremental and riddled with success and failure, both small and large. The process remains crucial, and its forward momentum essential.

Snow White and the Seven Dwarfs (1937), Cinderella (1950) and Sleeping Beauty (1959) set the tone for the Disney princess, and it is certainly true that their lucrative imprint must endure for the franchise to appeal. This does not rule out change. The same might be said of academic norms: scholarship reaches its current position as a result of a history of slowly adapting hegemonic foundations. Attempts to update the franchise and bring it into alignment with the twenty-first century can seem, at face value, to be re-skinnings of the original archetypes that Walt Disney established nearly a century ago. Changes are slow, often glib, and prone to superficiality, but Moana and Snow White are profoundly different expressions of a genre in transition. In the case of Moana, it is certainly true that the oceans of Oceania carry a chill of enchanted Northern climes, its deities are tinged with the magical sensibilities of the American-inflected European West, and its characters struggle to avoid falling back into well-established tropes and idioms. There is a lesson in the film to be learned about majoritarian storytelling and cultural hegemony, but also about space for a plurality of agencies acting together.

Popular culture juggernauts such as Disney often serve as worst-practice case studies for academic discourse, but also hint at the possibility for differential and fine-grained evolution and change. Mass-market fictions represent dark mirrors of the university, which also organizes itself through the logics of commodification and neoliberalism, but it is equally true that both institutions give voice to more than one narrator. Capital shapes and directs the structures and agencies of both. Anjirbag (2018, p. 1) proposes that the structure of normativity is so inherent in Disney that it colors all attempts at diversity. The result identified by Yoshinaga (2019, pp. 190–91) is the emergence of a dysfunctional system of “uneven, neocolonial production relations”. Yoshinaga sees a disjoint between the “(largely) non-Native Disney story team members employed as the film’s artistic managers and professionals who enjoyed relatively high occupational status and job stability; and, on the other hand, Pacific Islander cultural workers hired as short-term, contingent labor”. The result is “a political authority and creative autonomy gap that ultimately constrained the animation’s narrative power” (Yoshinaga 2019, p. 191). The inequalities of both the blue humanities and the genre of the Disney princess cannot be overlooked, but are not the whole picture.

Asymmetry of narrative power, economic power, and political power shaped Moana into something that pulls in multiple directions: meeting expectations and making bank, but also reflecting the stories of Oceania. The 1990s phase of the so-called “Disney Renaissance” saw a rhetorical commitment to confronting the lack of diversity and the problematic history of race, racism and ethnic cleansing that had dominated both American and Disney history. This phase led to changes in representation which led to Moana, but its legacy has never been without tokenism or partial commitment. Once again, the same could very much be said of processes within the blue humanities: much to critique, but also no simple answers. As Anjirbag (2018, pp. 1–2) makes clear, Disney films can never be understood without their underlying normativities:

[W]hen considering the legacy of depictions of racial and ethnic diversity in Disney animated film, a retrospective view makes clear that in many ways the multiculturalism represented in the corporation’s films is indicative of and reinforces the hegemonic culture within which Disney as a corporation is firmly positioned: American, Caucasian, cis-gendered, straight, Anglo, Christian, able-bodied, etc. This is especially seen in how coloniality becomes embedded in animated depictions of other cultures despite Disney’s reported efforts to tell more authentic stories from other cultures.

Change and progress cannot be a free pass, when much is at stake and much remains toxic in the present. Legal scholar Moana Jackson has argued that racialized profiles of Pacific Islanders through notions such as the “warrior” society are harmful and restrictive. Rather than assuming an identity for Islander culture and defining its essential traits, white writers (and scholars) from the global north should instead hear, acknowledge, echo, and cite acts of self-determination and
remediation. Part of this process requires moving beyond what Jackson (2019, p. 100) describes as the “safe” discourse of “language, music, art and custom” that Indigenous people are “permitted to define and inhabit”. From a grounding in legal scholarship and practice and the history of colonization, Jackson demonstrates how settler colonialism has shaped the bodies, cultures, and beliefs of Oceania.

The harm caused by preconceived and deeply codified notions of identity continues to repeat ad nauseam, even in acts of expression and respect. European identity, folklore, fairytale, capitalism, racism and suppression are all part of the same political ecology. Miyashiro (2019) has tied the cultural and race-making foundations of the imagined “medieval” in Oceania to the settler colonial origins of global capitalism from the very beginning. Miyashiro (2019, p. 7) argues that “sovereignty and capitalism in the larger context of settler colonial erasure of the native become entwined with the concept of periodization”. The all-encompassing embrace of Disney’s commercialization of culture—both the romantic European mythmaking embedded in the Princess franchise and the structural racism that it encapsulates—are all part of the story that Disney tells, both to itself and to its viewers. *Moana*, at its worst, feeds into colonization of the mind and of identity, which Jackson (2019, p. 100) identifies as the greatest and most harmful fiction of them all. Miyashiro’s arguments (Jackson 2019) make it clear that the medieval themes of Disney’s princess film genealogy are fundamental to this process. They are part of a wider complex of colonial slow violence in Oceania, identified by Otto Heim as “a series of calamities converging on the destruction of island homes, forced migration and lasting damage to physical and spiritual health” (Heim 2018, p. 132). Once again, the same is true of academia, built in its current iteration from the same foundations. The story, however, changes with the times and is never static. Nothing is static in an entangled web of political ecologies and cultural connections.

### 3.2. Voyages for Identities

At first glance, the consultation process for *Moana* supports Jackson’s argument. Disney spins a tale about the advice and support of Indigenous collaborators, but the corporation created the final film without their input, consent or ability to intervene. The experience of consulting for *Moana* took place within the “safe” domain of cultural production, and yet served as a vehicle for more than its receptacle might suggest. The cultural dialogue and remediation could not escape the corporate frame through which it was conducted. Hereniko (2019, p. 2), a story and cultural consultant for the film, describes the journey of the two directors, Ron Clements and John Musker, to Fiji, Samoa, and Tahiti, to listen to those whose cultures they wished to represent. They formed an “Oceania Story Trust” to act as an advisory committee for the film. It seemed that the studio understood that this story was not entirely theirs to tell. This research and engagement resulted in many authentic cultural details in the film, including respect for the ocean, the use of double-hulled canoes, the belief that the land is female, family totems and relationships, and so on. Hereniko feels, however, that Disney only heeded the advice of their advisors when it suited them, making their own narrative decisions and reworking many elements of what they learnt to suit their own priorities. Particularly egregious was the transformation of Maui from supernatural hero to sidekick, comic relief, and buffoon. The domestication of the demigod leads to fair but scathing conclusions:

> Disney’s efforts to reach out to cultural experts from the Pacific resulted in many authentic moments in its film *Moana*. When a major film studio becomes aware that its reasons for disregarding native advice is more to do with a possible diminishing of profits from ticket sales, it should stop and seriously consider finding an appropriate solution. (Hereniko 2019, p. 3).

Respectful representation can be heard in the voices that resound through the film, from Auli’i Cravalho (the voice of Moana) and Dwayne Johnson (the voice of Maui) to actors Rachel House (Moana’s grandmother) Temuera Morrison (Moana’s father), Oscar Knightley (a fisherman), Jemaine Clement (Tamatoa the giant treasure-hoarding crab), the composer Opetaia Foa’i and the band Te Vaka, as well as The Pasifika Voices Choir under the direction of Igelese Ete. The input and engagement of
the Trust resulted in an infinitely richer, better, more engaging and complex film, as did its diverse cast. These successes are part of the same film that committed many omissions and erasures, and did not discharge its duty to the communities it represented. Moana is both of these phenomena, and many more, rolled into one. In 2016, Chamoru scholar and poet Craig Santos Perez encapsulated the dry humor of the situation with a satirical piece entitled “An Open Letter from Two Oceanic Story Trust Polynesians”. The piece contains the ironic aphorisms “Disney is simply a hapless victim of our Polynesian spell”, “…that’s why the motto of Poly Face LLC is: ‘Consult us before you insult us’” and “We like to think about our collaboration with Disney as expressing native ‘agency.’ And our exceptional agency will lead directly to the ‘sovereignty’ of our Polynesian nation. You’re welcome”. The contradictory and occasionally farcical nature of the arrangement is abundantly clear to those in Oceania engaging with it.

The same can be said in academia. As a result of the profusion of blue humanities writing across the oceans of the globe, scholarship has discovered a plurality of voices that exists side-by-side with daily acts of privileged appropriation and the sidelining of subaltern voices. The internal contradictions and problematics of the arrangement are much commented upon, and not lost on the scholarly community. Embracing post-colonial notions of authority, motion, intellectual inquiry, space, and place highlights the ambivalent nature of the process. The oceans of the world are places that have served as vehicles of travel for colonial exploitation and human suffering, but they also tell a plurality of stories. The medium of blue storytelling transfers knowledge two ways. The oceans have been at the forefront of commodious new narratives—many of which are discussed in this collection—from Nigerian-American writer Nnedi Okorafor’s eco-sci-fi Afrofuturist Lagoon (2014) to Dominican author and singer-songwriter Rita Indiana’s Caribbean blend of voodoo, oceanography and time travel in Tentacle (2015). By learning to let the ocean of stories, ideas, and perspectives wash over, and through our scholarships, blue humanists from a plurality of perspectives, languages, communities, and cultures can share oceanic space. A capacious Hau’ofa-esque notion of the sea as home encourages us not to intervene or alter, but instead to react and respond. Ocean literatures have been at the forefront of many globalizing trends, historically and still today. Learning from these authors and their thought-worlds should be reactive and not active, additive and not incisive.

Anjirbag (2018, p. 13) proposes that “Disney might be firmly positioned as a powerful stakeholder within the Western hegemonic mediasphere, but that does not mean that the films it produces are easily positioned or interpreted within a wider, global cultural context.” The same could be said of blue humanities discourse: even if the field of study engaged with is global, the root structures of academia are rooted in normative academic culture. The very acts that seek to represent, engage, and remediate the Pacific connect to the capitalist flows, global crises, and Anthropocene disruptions. As Yoshinaga (2019, p. 203) describes the matter, “Disney’s hiring and IP practices seem to reflect careful calculations of how to benefit from a global division of labor: specifically, the knowledge economy’s endless factory of mass-designed, fantasy-narrative production”. Tamaira and Fonoti (2018) identify problems in search of solutions that, in turn, generate more problems. Disney is too caught up in a cycle of globalist cause and effect to be a wholly positive actor:

It is highly likely that at some point in time the millions of pounds of plastic products that have been manufactured as part of the Moana merchandizing campaign—such as Moana and Māui dolls, Moana-themed Lego sets, jewelry, and so forth—will likely end up littering the very ocean on which the film is based, adding to what has been termed a “plastic Paradise” (see Pyrek 2016). (Tamaira and Fonoti 2018, pp. 304–5).

Tamaira and Fonoti see the film not only for its cynicism, but also for what it attempted and partially achieved. Their perspective—which also seems to present a useful lesson for academia—is

7 See https://craignsantosperez.wordpress.com/2016/10/15/an-open-letter-from-two-oceanic-story-trust-polynesians/ (accessed on 17 April 2020).
that genuine anti-racist and decolonial actions taken to address issues of representation and diversity often fail, because of a variety of errors and half-measures—and yet, these efforts must continue. They are the process of a seesawing pendulum of racism and anti-racism recently outlined by Kendi (2019). Inaction remains racist by default, since it rests on the endurance of racist structures that themselves rest on a hierarchy of worth placing white and colonizing bodies, ideas and actions at the top. Actions taken to reduce structural discrimination and embedded inequality are anti-racist, even if they are incomplete. There is hope, even in imperfect beginnings: “Moana may not be perfect—what film is?” Taimara and Fonoti conclude, “but it cannot be denied that it was made with a deep sense of responsibility, thought, and care” (Tamaira and Fonoti 2018, p. 318).

The consultation process reveals that initial respect for the dreams and knowledge of others is at best incomplete without lasting symmetrical engagement and a world of many centers, but that engagement and growth is possible. The recognition of the film’s imperfections and partial failures, but also its successes, leads to the crucial bridge between the world of Hollywood and the actions of blue humanities scholars. Taimara and Fonoti draw in the work of Hau’ofa in their summary of Moana, providing a guiding connection between filmic and academic practice:

In ‘Our Sea of Islands,’ Hau’ofa wrote, ‘The world of Oceania is not small; it is huge and growing bigger everyday’ (Hau’ofa 1994, p. 151). I propose that Moana serves as a contemporary wa’a (sailing vessel) that enlarges [Indigenous] presence in the world by carrying our stories, cultures, values, traditions, and even our languages beyond the reefs of our home shores into the global domain. Of course, such voyages are not without considerable risk. What we can only ever hope for when setting out for new horizons are favorable winds, calm seas, and the skills to navigate the way ahead. (Tamaira and Fonoti 2018, p. 322).

Moana is a vehicle of islander culture and ideas, brought to the wider world through the vehicle of Disney and its multinational apparatus. Baker et al. (2016, p. 49) make the point that films and creative productions about voyaging in the vaka or canoe are themselves “a vaka that crosses oceans to bring the voices of the Pacific to the centres of power and global consumption, combining disciplinary perspectives and activating social and institutional connections”. They too look to Hau’ofa for the renewed enlargement of culture and identity of Oceania on the world stage, transported by creative output. This message includes unwelcome truths, such as the pollution of the oceans and the slow harm done from a distance. This is part of a creative vision. It is in this message—culture and identity as a message of identity from Oceania—that the blue humanities stand to learn the most. It too carries the ideas and legacies of those it discusses using a wide array of disciplines and practices, and has an obligation to be a self-reflexive voyager. The messages carried from Oceania speak of climate crisis, pollution and harmful global supply chains, but are also a conduit of a path ahead.

Only by listening to the self-identification and self-narration of those breaking free of stifling and subtly violent discourse and acknowledging acts of cultural resilience and autonomy can this cycle end. Disney, and too often academic scholarship, comes on the tail end of centuries of structural exploitations. Islanders have a vision of something new and different. Kamaná (2019, p. 145) discusses pulakaumaka, a word in the Hawai’ian language for a “constant all-powerful vision”. The word describes infatuations, loves, life-long passions, and enmities alike. The pulakaumaka—the deeply felt and productive vision, obsessions, and fixations—of the people of Oceania looks to the future. In Kamaná’s case, her vision and life’s work aim to revive and teach the Ólelo Hawai’i (Hawai’ian language). For the consultants of Moana, their aim was to be represented faithfully and with respect. Moving beyond this, however, the true representation of the film outlasted its release, evolving in 2018 when a version of the film was
made available to school children in the Hawai’ian language.8 The film is part of many webs of action, reaction and influence, but it is also part of the creative lives of those it represents.

4. Oceania and Academia

A key element in creating a global and multicultural blue humanities scholarship lies in listening to, and engaging with, those whose stories have been ignored. In the mostly terrestrial context of eco-studies today, one notable trend that the blue humanities would do well to follow is the rising visibility and influence of Indigenous Studies. Edited collections, such as Neyooxet Greymorning’s Being Indigenous (Greymorning 2019), provide a path to be respectfully heeded and followed. The blue is never far from the picture painted by its subjectivities, scholarship, and identities. Another influential example is the work of Kyle Whyte, environmental activist and professor of philosophy, exploring the analogies between settler colonialism and environmental injustice. Whyte’s analysis particularly focuses on the violence done to ideas of collective cultural identity: “settler colonialism commits environmental injustice through strategically undermining Indigenous collective continuance” (Whyte 2018, p. 126). Violence done by settler cultures to indigenous collectives, including human communities, nonhuman ecosystems, and ideas of cultural “continuance,” represent important elements of the lasting consequences of settler colonialism. When adapting the ideas of Whyte and other scholars to consider Indigenous ideas about the ocean, the massive geographic and historical range of Pacific Islander cultures and communities beckons to scholars from the global north. Opening ourselves and our scholarship to this ocean of ideas can help reduce our reliance on dominant power narratives. To respond empathetically and respectfully may not be enough, but at least it enables a start. Integrating into our own critical practices the works and wisdom of Indigenous writers and activists such as Te Punga Somerville, Jackson, Ingersoll, Hau’ofa, Sullivan, Perez and others represents a necessary first step. Responding to these voices can also enable the academic mainstream to absorb valuable perspectives into our discourses—not to mention teaching ourselves that the analytical modes and networks that place books with brand-name Anglophone university presses may not be the only markers of value. Building global blue humanities will require time, patience, and a willingness to cede control of the centers of the discourses in which we participate.

Our project asks that we build global critical oceanic discourses—the academic equivalents of more self-aware and polyvocal versions of Aquaman or Moana—without the solipsistic self-referentiality and inconsistent motivations of these films. It remains all too easy to talk of decolonization and centering whiteness, and yet words without commitment to structural change remain empty. This article draws on the words and perspectives of scholars of color and of Oceania. We have attempted to use these scholars’ works to provide perspective on the structures that caused Disney and Warner Brothers to go awry in their films. Moana remains an unqualified commercial and critical success, so there is no doubt that speaking the words and drawing on the ideas of Oceania has power and impact. Even Aquaman, though not as widely successful, reveals a broad interest in engaging with the cultures of Oceania. Like the producers of Hollywood films, it can be easy for academics to focus just on aesthetics and novelty, and this impulse is easy to indulge when cocooned by privilege. Academic discourses, however, should endeavor to be self-reflective and change ourselves through attention to other voices. No one act is the end of the process, but ongoing engagement in good faith is a blue humanities sine qua non.

The structures of academic culture provide the (modest) megaphone of peer-reviewed publication as a kind of counterpart to the much greater powers of the vast creative, commercial, marketing, and managerial resources of the silver screen. We academics can recognize our own blindnesses and work to counteract them. Without parity of esteem and parity of representation, without focusing on the unequal structures behind the intervention, this power may still become exploitative and generate

---

8 See https://www.hawaii.edu/news/2018/11/27/moana-olelo-hawaii-to-schools/ (accessed on 27 March 2020).
the success of the privileged at the expense of those being represented. Blue humanities scholarship should treat Oceanic cultural materials not as lacunae in need of filling, but as a plenum of stories, lives, ideas and cultures. Academics sometimes speak of the value of slow scholarship (O’Dair 2008), free of the desperate instrumentalism of neoliberal capitalism. Something analogous might be said about quiet scholarship, which listens before it speaks, and perhaps also of plural scholarship, attentive to discourses that can sometimes appear secondary. In the lull that precedes interpretation, other voices will emerge, already speaking and already complete. This essay aims to draw parallels between the problematics of popular culture and academic culture, and to imagine an emergent and receptive mode of blue writing.

Author Contributions: The writing, editing, and conceptualization of this article was performed jointly by J.L.S. and S.M. Both authors have read and agreed to the published version of the manuscript.

Funding: James L. Smith would like to acknowledge that this article was completed during a 2018–20 Irish Research Council Government of Ireland Postdoctoral Fellowship Award. Steve Mentz received no external funding, but would like to acknowledge the support of St. John’s University in New York.

Acknowledgments: The authors acknowledge the suggestions and inspiration of the editors of this special issue, Alexandra Campbell and Michael Paye. They also gratefully appreciate the labor and valuable input provided by the two anonymous reviewers of the article.

Conflicts of Interest: The authors declare no conflict of interest.

References

Ahmed, Sarah. 2012. On Being Included: Racism and Diversity in Intellectual Life. Durham: Duke University Press.

Anjirbag, Michelle. 2018. Mulan and Moana: Embedded Colonality and the Search for Authenticity in Disney Animated Film. Social Sciences 7: 230. [CrossRef]

Baker, Tammy Hai‘i’Opua, Sharon Mazer, and Diana Looser. 2016. ‘The Vessel Will Embrace Us’: Contemporary Pacific voyaging in Oceanic theatre. Performance Research 21: 40–49. [CrossRef]

DeLoughrey, Elizabeth. 2019. Toward a Critical Ocean Studies for the Anthropocene. English Language Notes 57: 21–36. [CrossRef]

Ecstein, Lars, and Anja Schwarz. 2019. The Making of Tupaia’s Map. The Journal of Pacific History 54: 1–95. [CrossRef]

Greymorning, Neyooxet, ed. 2019. Being Indigenous: Perspectives on Activism, Culture, Language and Identity. Abingdon: Routledge.

Hau’ofa, Epeli. 2008. We Are the Ocean: Selected Works. Honolulu: University of Hawai’i Press.

Heim, Otto. 2018. How (Not) to Globalize Oceania: Ecology and Politics in Contemporary Pacific Island Performance Arts. Commonwealth Essays and Studies 41: 131–45. [CrossRef]

Hereniko, Vilsoni. 2019. Authenticity in Cinema: Notes from the Pacific Islands. Journal de La Société Des Océanistes 148: 65–72. [CrossRef]

Ingersoll, Karin Animoto. 2016. Waves of Knowing: A Seascape Epistemology. Durham: Duke University Press.

Jackson, Moana. 2019. Colonization as Myth-Making: A Case Study in Aotearoa. In Being Indigenous: Perspectives on Activism, Culture, Language and Identity. Edited by Neyooxet Greymorning. Abingdon: Routledge, pp. 89–101.

Kamanā, Kauanoe. 2019. Reflections and Feelings deriving from a pulakaumaka within my heart. In Being Indigenous: Perspectives on Activism, Culture, Language and Identity. Edited by Neyooxet Greymorning. Abingdon: Routledge, pp. 145–55.

Kendi, Ibrahim X. 2019. How to Be an Antiracist. New York: Penguin Random House.

Mack, John. 2011. The Sea: A Cultural History. London: Reaktion Books.

Mentz, Steve. 2015. Shipwreck Modernity: Ecologies of Globalization, 1550–1719. Minneapolis: University of Minnesota Press.

Mentz, Steve. 2019. Experience Is Better than Knowledge: Premodern Ocean Science and the Blue Humanities. Configurations 27: 433–42. [CrossRef]

Miyashiro, Adam. 2019. “Our Deeper Past”: Race, Settler Colonialism, and Medieval Heritage Politics. Literature Compass 16: 1–11. [CrossRef]
O’Dair, Sharon. 2008. Slow Shakespeare: An Eco-Critique of ‘Method’ in Early Modern Literary Studies. In *Early Modern Ecostudies*. Edited by Thomas Hallock, Ivo Kamps and Karen Raber. London: Palgrave, pp. 11–30.

Oppermann, Serpil. 2019. Storied Seas and Living Metaphors in the Blue Humanities. *Configurations* 27: 443–61. [CrossRef]

Rosiek, Jerry Lee, Jimmy Snyder, and Scott L. Pratt. 2019. The New Materialisms and Indigenous Theories of Non-Human Agency: Making the Case for Respectful Anti-Colonial Engagement. *Qualitative Inquiry* 26: 331–346. [CrossRef]

Shewry, Teresa. 2015. *Hope at Sea: Possible Ecologies in Oceanic Literature*. Minneapolis: University of Minnesota Press.

Steinberg, Philip, and Kimberley Peters. 2019. The Ocean in Excess: Towards a More-than-Wet Ontology. *Dialogues in Human Geography* 9: 293–307.

Tamaira, A. Mārata Ketekiri, and Dionne Fonoti. 2018. Beyond Paradise? Retelling Pacific Stories in Disney’s *Moana*. *The Contemporary Pacific* 30: 297–327. [CrossRef]

Te Punga Somerville, Alice. 2012. *Once Were Pacific: Māori Connections to Oceania*. Minneapolis: University of Minnesota Press.

Te Punga Somerville, Alice. 2017. Where Oceans Come From. *Comparative Literature* 69: 25–31. [CrossRef]

Thompson, Christina. 2019. *Sea People: The Puzzle of Polynesia*. New York: Harper Collins.

Verne, Jules. 1875. *The Floating City and the Blockade Runners*. New York: Scribner, Armstrong, and Company.

Whyte, Kyle. 2018. Settler Colonialism, Ecology, and Environmental Injustice. *Environment and Society: Advances in Research* 9: 125–44. [CrossRef]

Yoshinaga, Ida. 2019. Disney’s *Moana*, the Colonial Screenplay, and Indigenous Labour Extraction in Hollywood Fantasy Films. *Narrative Culture* 6: 188–215. [CrossRef]

© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).