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Mission Statement

The mission of the *Journal of Multidisciplinary Research* is to promote excellence by providing a venue for academics, students, and practitioners to publish current and significant empirical and conceptual research in the arts; humanities; applied, natural, and social sciences; and other areas that tests, extends, or builds theory.

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Editorial

As we welcome 2021, hopefully a brighter and safer year than 2020, we can reminisce about the pandemic era. This brings to mind a line from a popular American Television show: “I wish there was a way to know you’re in the good old days, before you’ve actually left them.”

As we start our 13th year at the *Journal of Multidisciplinary Research* (JMR), we hope the best is yet to come.

We are also pleased to share that the JMR now is included in two major search services: (1) Library Hub Discover, which gathers the catalogues of major UK and Irish libraries, and (2) Gateway Bayern, which is the web portal of the *BibliotheksVerbund Bayern* (BVB, Bavarian Library Network). Both these additions mean the JMR is even more visible to readers around the world.

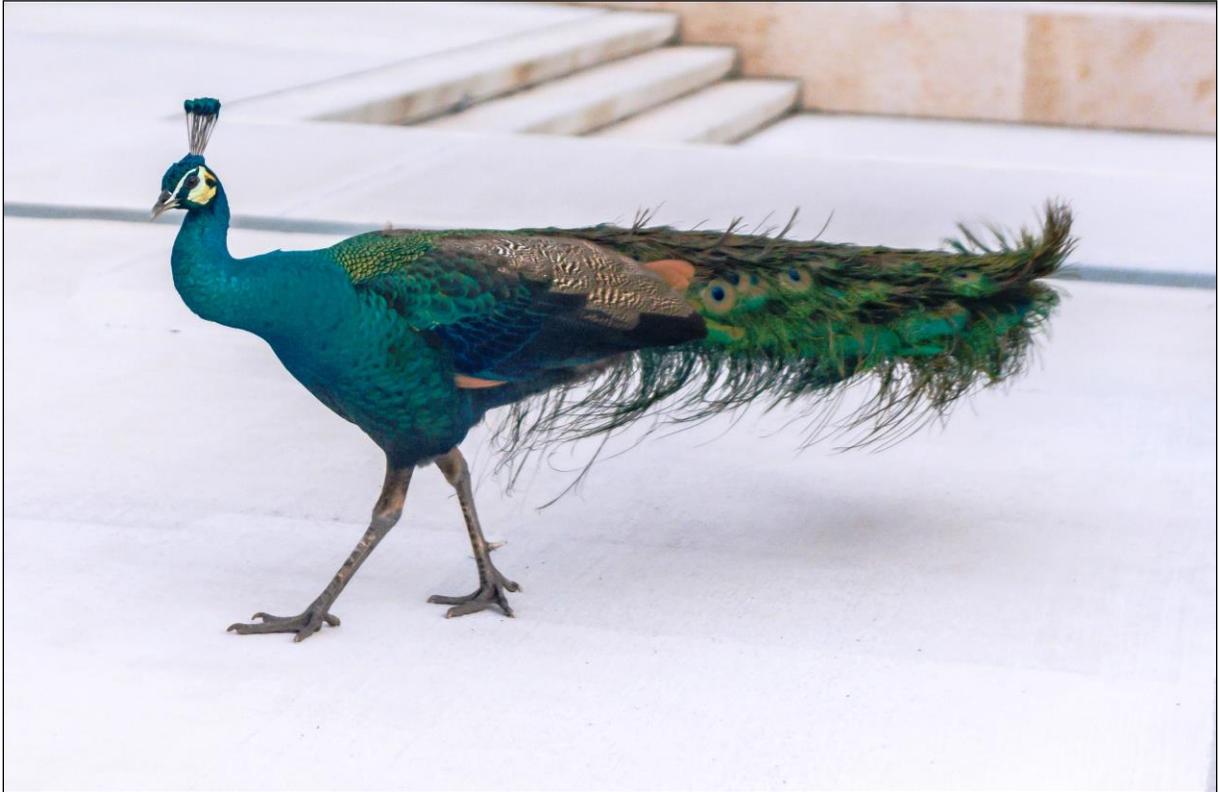
This Volume 13, Number 1, edition of the JMR, features five thought provoking collaborative research articles from around the world. An article from Yale University offers “an inquiry, case, and recommendations for a more adaptable relationship with nature focusing on human-wildlife (biodiversity) coexistence.” A collaborative article by international attorneys in Italy and the USA explores the legal issues arising out of surging disruptive technologies. An article from Hong Kong Baptist University is aimed at revealing the discrepancy in fighting tactics of Taekwondo athletes with three levels of expertise. A study from Eastern Florida State College reviews psychological, motivational, and contextual factors affecting student sport participation. Another interesting article from the University of Dallas discusses theology of symbolic communicative efficacy.

We also have an interesting student article from St. Thomas University in our “Student Corner,” reviewing investor psychology, behavioral biases, and the impact on financial decisions. In our “Life Forward” section, we feature an interesting interview with Luis Victoria, an attorney and a world Karate champion. In addition, we review the book *Blazing paddles: Your guide to forming a fun, fast dragon boat team* by Murphy, and a great marketing book *Marketing: Principles and practice: A management-oriented approach* by Hollensen & Opresnik.

As we start the year 2021, I wanted to share a quote by famed management guru Peter Drucker: “The best way to predict the future is to create it.”

Always forward,

Hagai Gringarten, Ph.D.
Publisher & Editor-in-Chief



“Pedro the Peacock struts at St. Thomas University, in Miami, Florida”
2021

Photography by Scott E. Gillig

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Educational Policy and Ethics for Human-Nature (Wildlife) Coexistence: An Inquiry, a Case, and Recommendations

Susan G. Clark
Yale University

Abstract

I offer an inquiry, case, and recommendations for a more adaptable relationship with nature focusing on human-wildlife (biodiversity) coexistence. The central concern before us presently is how to educate about the requisite attentiveness, thoughtfulness, and actions needed – both individually and collectively – to live and thrive harmoniously with nature. I recommend a two-part educational strategy and ethical stance. As I see it, wildlife is a “referent” or concept that we use when talking about nature, often without knowing we are doing so. Human-wildlife coexistence is of mushrooming concern throughout most of the world, including in and around the U.S. National Parks. This is especially so in the Greater Yellowstone Ecosystem (GYE), U.S.A, the case that I use in this essay. To understand the challenge and options we face, we need to clearly diagnose human, nature, and wildlife problems at multiple, interconnected levels (i.e., philosophic to practical). Problems all flow from our current harmful beliefs and behavior toward nature and wildlife. In this essay, I inquire into our present “frame of mind,” education, and policy about our institutionalized relationship with wildlife (nature, biodiversity), specifically in the GYE case. I maintain that a successful approach to coexistence is one based on a philosophy of “action competence” mixed with “ethical pragmatism” achievable through education and follow on action. Policy development can help as it is a form of social education. The approach I recommend can bring us to a new holistic relationship with the wonders of life (nature, biodiversity, wildlife) with which we share this planet. In the end, I call for us to be successful in supporting the great enterprise of life on Earth and at the same time living for a human flourishing well into the future.

Keywords: human-wildlife coexistence, nature, biodiversity, education policy, competence, ethics, pragmatism, Yellowstone

Introduction

Enlightenment is man's [*sic*] release from his self-incurred tutelage. Tutelage is man's inability to make use of this understanding without direction from another. Self-incurred is this tutelage when its cause lies not in lack of reason but in lack of resolution and courage to use it without direction from another. *Sapere aude* – 'Have the courage to use your own reason' – that is the motto of the Enlightenment.

Immanuel Kant, 1784 (Castree, 2014, p. 283)

Human-wildlife coexistence is of mushrooming concern as we are destroying biodiversity at alarming rates worldwide (IPBES, 2019; Knight, 2000; United Nations, 2019). The anticipated consequences of biodiversity loss would be catastrophic for the human enterprise (World Wildlife Report, 2018; Filho et al., 2020). The problem is evident in myriad concrete cases of destruction of biodiversity and through other widely publicized examples (e.g., Organisation for Economic Cooperation and Development, 2018; Marien, 2019). Among the more familiar causes of destruction of plants, animals, and their habitats are a large and growing human population, rising livestock numbers, expanding economies and international trade, and spreading infrastructures and incursions upon wildlands (Chris, 2019). These trends and conditions speak to our harmful impacts on planetary systems (e.g., we are in the Anthropocene; Lynch & Veland, 2019).

In this essay, following the introduction, methods, and the case, I first inquire into the coexistence problem as a crisis, using the Yellowstone case in part. Second, I look at coexistence philosophically, practically, and education-wise. My focus here is on wildlife as a stand-in, a referent for nature in the largest sense. Finally, I offer recommendations, a way forward toward coexistence by calling for a new educational and policy approach in five short parts. I offer a new educational strategy. The coexistence issue is really much more profound than the conventional, everyday view of environmental relations now permits. This essay seeks to encourage the needed reconfiguration of human-nature interactions. The engagement I am inviting should be among our highest-priority obligations.

Methods

My inquiry offers a diagnosis of human-nature problems that largely stem from our current harmful beliefs and behavior toward wildlife and the natural world. I use the terms wildlife and biodiversity interchangeably. Successfully addressing our present unsustainable human-wildlife relationship invites a deep level of analysis – both philosophic and practical – about the coexistence problem, its causes, and likely future for wildlife and humans. It also invites practical responses equal to the challenges we face. My analysis here draws on the published literature and examples. My essay is largely conceptual and ethical, yet pragmatic. My approach is at this foundational level – philosophic – the place where problem rests (McDougal, 1992-93; Lynn 2006; Clark 2020a; 2021).

I draw on a great many authors and colleagues for this essay, especially the philosophers Michael Bonnett and David Bohm, and discussions with colleagues Tim Terway (2018), Gao Yufang (2016, 2018), Richard Wallace (2016), and others too numerous to list here. I rely primarily on Bonnett and selected others in this essay (e.g., Lasswell & McDougal 1992). My experience includes concern on the central subject matters of this essay over my professional career. In terms of the case, I have lived in the GYE, U.S.A., a landscape of global significance

for more than 50 years. I have worked on scores of wildlife species and diverse human behavioral and policy projects, ranging from single species to the entire GYE region (e.g., Clark, 2008; 2021). I go well beyond accepted convention in this essay – our everyday thinking, understanding, and dialogue about coexistence. I delve into key foundational issues of coexistence that are well outside of what education and public policy permit currently.

An Overview of Human–Wildlife Coexistence

Currently, our relationship with wildlife (biodiversity) is not sustainable as data on extinctions shows. As we take stock of the present situation and look to the future of the environment, we must be willing to question the status quo, current trends, and the conditions behind them, which I do in this essay. Finally, we do not yet have the kind of public consciousness, conversation, or education that I am calling for to best address the coexistence problem in the common interest. To get that consciousness, dialogue, and practice, we must become action oriented and pragmatically ethical in addressing problems. This is the route to learning how to coexist with wildlife and nature for the benefit and enjoyment of all people, well into the future.

A Case – the Greater Yellowstone Ecosystem, U.S.A.

I use the Greater Yellowstone Ecosystem (GYE) to examine ongoing human-wildlife coexistence problems in this essay. The GYE encompasses nearly 35,000 square miles of temperate habitat in Wyoming, Montana, and Idaho, U.S.A. (National Geographic Society, 2016; Quamen & Wilkinson, 2016). It includes three National Park units (Yellowstone National Park [YNP], Grand Teton National Park, and the John D. Rockefeller Memorial Parkway), four national wildlife refuges, parts of six national forests, and the Wind River Indian Reservation (Marcus et al., 2012), as well as other public and private lands. This region is one of the most famous scenic lands in North America and the world. It presents us with its breathtaking diversity of landscapes and wildlife. Human activities are placing ever more pressure on the region’s species’ populations, communities, and the environment (Wenk, 2017; Holloway, 2018). This is due to people coming into direct conflict with one another regarding appropriate rules for human behavior, recreational uses, and our responsibilities to wildlife and nature (Wilkinson, 2016). People, not wildlife, are the cause of coexistence problems – the ongoing decline of wildlife populations presently underway. The conflict that exists is among people who cannot agree or regulate their harmful behavior, individually or collectively, in the common interest. Common interests are those that the world community widely shares. Special interests are demands that specific groups make for their own benefit, sometimes at the expense of the common interest for all. The problem is not with wildlife, but with humans.

Instead of achieving the coexistence that official policy and documents say we humans want, we humans are producing a situation wherein wildlife and habitats are diminishing at an alarming rate. Coexistence problems are growing despite, for example, Teton County, Wyoming (WY), formally declaring its goal as stewardship of wildlife, natural resources, and scenery (Teton County, WY, 2012). Yet, human behaviors in the region continue to harm wildlife habitats, stress animals, and disrupt critical migration routes. The list goes on and on. A growing number of people and organizations in the GYE and beyond recognize the coexistence problem, its philosophic and practical foundation, and its unsustainability (Clark, 1999). We must act quickly and responsibly if we are to find a working formula for human-wildlife coexistence.

The Issue – Coexistence

The factual record on coexistence problems is very clear (e.g., Wallace-Wells, 2019). Yet, the label, “human-wildlife coexistence” is a highly problematic expression (e.g., Nyhus, 2016). It is open to a variety of interpretations. I examine these multiple interpretations” that are also open to internal contradictions. Nevertheless, it is clear that human-wildlife coexistence is becoming a key concern in local, regional, national, international debates on how we should live. It is also clear that there is a real possibility for educational and policy advances for improved human-wildlife coexistence.

We could be using a different kind of interspecies interaction than the one now in currency – one that uses action competence and ethical pragmatism as a guide (see Bonnet, 2004, 2012, 2015 and below). There are two ways to respond to this increasingly serious human-caused problem with wildlife, which is really a conflict or difference among people over what exactly the problem is, who is responsible, and what to do about the problem. First is “environmentalism.” This typically calls for developing technical or engineering alternatives and attempting to modify the behavior of animals (and sometimes ourselves with, for example, roadway speed signs and bumps, removal of animals). This approach calls for changes in ways that have a small impact on our desired broader goals about our resource exploitation, recreational activities, suburban development, commodification, and other current elements of the so-called “good life.” Presently, society and many organizations are enthusiastically engaged and support technical and engineering approaches, such as taking down or putting up fences, building roadway crossings, over- and underpasses, and putting up road signs and reflectors. Currently, this is the dominant strategy for managing human-wildlife relations in the GYE – and all are activities that should continue. In the end, they are insufficient.

Second is “action competence” mixed with “ethical pragmatism.” This approach sees the coexistence (and conflict among humans) problem as evidence of a need to fundamentally change our underlying deep notions of the “good life” or put another way, to revisit and modify our understanding of ourselves in this wildlife- and wilderness-rich GYE place (i.e., our worldview, paradigm, formulas). In this view, nature commands our attention and begs us to ask basic questions about our relationship to wildlife and the greater ecosystem (nature), wherever that ecosystem may be. In order to engage in this way, we will need to try and educate ourselves across the spectrum of engagements we now have with plants, animals, and scenery in a way that allows us to find a new, reconfigured understanding of ourselves, our culture, and our practices on nature. This includes how we perceive ourselves and the central role we play in the GYE to which we currently adhere.

This requires all of us to be especially knowledgeable about ourselves and how our activities impact nature. This requires a kind of thoughtfulness at the individual level and also at the social level that goes well beyond every day, conventional practices (Arendt, 1971). The new reflectivity and follow-on action that this formula calls for can take us to a new relationship with wildlife and nature. As we go, we want to use the best technical or engineering alternatives to minimize human-caused problems for wildlife and to find new, more successful alternatives. GYE newspapers are replete with articles where people are engaging conventionally with whatever knowledge and skills they now possess to address obvious problems. However, at the same time, perhaps without knowing it, many environmentalist and citizens are implicitly trying to get to the fundamental issues at play that I explicitly raise while still promoting simple clear technical and

engineer responses (e.g., removing a fence blocking animal movements). In contrast, I maintain that perspectives, knowledge, and skills already exist for us to use now to accelerate our getting at the fundamental coexistence problems we collectively face. We who live in the GYE or are concerned about its future, or other regions with similar problems, could benefit from intentionally adding these action competence perspectives, knowledge, and skills on to our present thinking and work.

The Inquiry into Coexistence as a “Frame of Mind” and Practice

In this essay, I introduce the issue of human-wildlife coexistence as a “frame of mind” or “system of thought” (see Bonnett, 2002). I maintain that people now use the term “wildlife” as a referent for “nature,” however differently understood. Both terms – wildlife and nature – lay out a constellation of ideas (a semiotic complex) that constitutes our society’s current institutionalized outlook (doctrine, formula, story, worldview, paradigm) about the world and how we fit in (Sebeok, 2001; Gao, 2018; Henrich, 2020). Consequently, when we talk about wildlife, the subject needs little explanation in everyday, common sense (folk) ways of knowing and communicating. However, there is much more to the two terms (semiotic complexes, concepts) than convention permits or makes visible (Gao, 2018). Presently there are many individuals and groups engaged in human-wildlife coexistence problems. I want to encourage everyone’s good works promoting human-wildlife coexistence and at the same time invite them to go much deeper to the foundation of the coexistence problem as basis for improvements (as I elaborate below). To do so may require many of us to adjust and depart from convention and existing formulas and stories. Yet, as I argue, doing so holds the promise of successful coexistence. Five sections follow.

Coexistence as a “Frame of Mind”

First, let’s look at wildlife as nature. I need to offer a preliminary definition of *nature*. Wildlife is a referent or term (sign complex) that we typically use when talking about nature, often without knowing it (Castree, 2014). *Nature* has many senses or meanings. The idea of nature has a long history in which we have constructed or construed and interpreted it in a large variety of different contexts. For examples in the GYE, just look at letters to the editor in the *Jackson Hole News & Guide* to get a feel for the different meanings of nature that the public presently uses (e.g., Wilkinson, 2019). Some people see nature as all of the non-human world while others see nature as the entire physical world including humans. And still others see nature as an inherent power or force in the world, such as gravity. No doubt there are other understandings of what nature is. These views can and do conflict without people really knowing why.

Wildlife as Nature – In contrast to these conventional views, I denote *nature* as a self-originating (i.e., self-arising) material reality or kind of truth about the world that we individually and collectively experience. Nature seems to just exist, no matter what we think or do. Conventionally and in contrast, we use wildlife as a shorthand way of thinking and talking about nature and our presumed “right” relationship to it, often without being conscious of what we are doing. Wildlife and nature and our relationship to and responsibility for them are very contentious matters currently (e.g., in GYE, see Marsh, 2019).

Many people see that the world (nature) as *independent* of human agency, action, or will in our present age. Nature greatly affects us (e.g., in GYE, spend a hard, cold winter in Jackson Hole, WY, to find out for yourself). We can and do affect nature in many ways, too. Without doubt

we are a part of nature, not outside or independent of it as many people conventionally think (Harari, 2015). Nature includes the powers that sustain it and govern how it is structured and functions. Ecology is the study of that structure and process. Quite honestly nature does just fine without us. Nature is as it comes with no expiration date. Nature has the powers to maintain itself and is not a thing of which we are the authors. In fact, we humans are just living our lives, which is an exercise in biophysical maintenance and procreation and making meaning of nature and ourselves through shared culture (Taylor, 1989).

Nature has not ended, as some people suggest (e.g., McKibben 1989); neither are we in charge of what happens. We must not conflate nature with wilderness or the national parks, as we often do. However, the fact that we do not control nature and wildlife does not mean that we do not affect them through our actions. The species extinction crisis and other harmful regional and global changes (e.g., depletion of ocean fisheries, loss of topsoil, air and water pollution) are examples. In the GYE, human caused conflicts among people over animal migrations, winter habitat and disease, and other issues reflect what we conventionally think nature is and our relationship to it (Camenzind, 2017). It seems obvious to many of us that we need to rethink our understanding of and relationship to nature as it is now.

Foundational Questions

Next, let's turn to some influential views and foundational questions. The following questions may sound too philosophic for some readers, but they focus on the heart of the matter of human-nature interactions. There are other views about nature in addition to the ones I offered above that we need to consider. Some of these perspectives are deeply rooted in aspects of our current societal traditions and most people do not recognize this deep rootedness. Some definitions of nature, including the one I recommend, make great demands on our individual consciousnesses and our social organization. These demands require that we extend the depth of sympathy and empathy towards the flourishing of things (e.g., wildlife) beyond ourselves. At present, this is difficult for some (perhaps even most) people and our culture to think about, consider, or act on.

Ultimately, I argue, this needed extension can lead to a transformation of what we take ourselves to be in relation to nature. It will require a greatly heightened awareness that is not easy to do on one's own in the context of our society. Importantly, we know that all living beings are attempting to realize their own good in their *umwelt* (surround, world; Gao, 2018). Rationality requires that humans respect this fact in the same way it requires all of us to respect analogously other persons. It means extending respect to all living members of the biosphere.

Charles Taylor, the eminent Canadian philosopher, for example, argues that we must see ourselves as an equal member in life's panorama in the biosphere. We are equal and independent members with all other living entities in "the great community of life." Such a view does not sit well with the dominant beliefs of our current society (Buscher & Fletcher, 2016). Given present beliefs, it is difficult for some people to include other species in their ethics because doing so constitutes or requires a greatly different sense of ourselves. Taylor wants us to come to a view of our ecological location (our *umwelt*) in the world (Gao, 2018). To do so means we will have to change.

We need to think in new ways to achieve this relationship. Whatever else this new kind of thinking underscores, it clearly must be about our relationship with nature, including other life (wildlife). It is about the possibility of a new identity for ourselves. In the end, it is about a new kind of self-knowledge, a new way that we engage with nature and wildlife. Nature is a holistic

that sustains us and of which we are part, not separate from, as some people think. Saying such speaks to the sort of beings we are, as well as the sorts of beings we regard everything else (wildlife) to be (“the other”). Nature in this sense clearly defines our understanding of and our attitude towards the environment and wildlife.

As such, this understanding represents the most fundamental ethical considerations thereof. Essentially, this sense concerns human living, our practices and responsibilities, and our conceptions and values embedded in those practices. Consequently, these ethical considerations require us to reconsider the foundational metaphysics (ontological philosophic beliefs) underlining all our present attitudes. This view is about the set of fundamentally orienting motives that we draw on daily as we live our conventional lives. Fundamental concerns are our orienting motives for all we think, say, and do. Understanding our ethical dynamic is basic to understanding our behavior, what nature is, and our relationship to and responsibility for wildlife.

Understanding the “Order of Things”

What is the order of things in the GYE, to make a point for example? This is not a strange question but a profoundly practical one. People make many different claims about the order of things – the patterns in nature, the origin and causes of these patterns, and human relationships to them. Weather and climate are only two such examples. Perhaps what I said as an author above and below is not a clear, simple, logical claim right off to your reading (and philosophy)? Regardless, I, and professor and philosopher Charles Taylor (1989), both argue that we must value ourselves and know who we are in realistic terms if we want to connect with nature and other life meaningfully and sustainably.

Professor and historian Blom (2017) discusses the origin of our present view of the order of things through a history of the evolution of ideas (1560-1700) that laid the foundation for our in the world. The great philosopher Baruch de Espinoza clearly articulated our current view, perhaps for the first time. In the pre-modern era (1650-1750 or thereabouts), our understanding of the order of things evolved into a tightly bound view of ourselves in nature for the first time. This was because we perceived ourselves as an integral part of that order (nature). Before about 1560, Blom notes, we understood the order of things quite differently than today. We believed that a supernatural being set the order of things. With the crises situation we find ourselves in today, perhaps, it remains possible for some people to ignore our biological and evolutionary origins and how nature sustains us. In contrast, to me, this seems like a sense of things that is difficult to hold in the face of overwhelming evidence to the contrary about our evolutionary biological and cultural and role on the planet. I see us in the modern world desperately seeking a new holistic, integrated understanding – a sense of things. To put it another way, we humans at both individual and cultural levels are seeking a meaningful existence in a world rapidly and dramatically in flux and full of growing uncertainty.

What I mean with “good for us” is what is good for the “natural system,” including wildlife. I further argue that we don’t knowingly spoil the environment. The more removed from the environment we are, the less we viscerally understand the damage that is being wrought. We might “know” objectively that bad things are happening to the environment but the further we are from “nature,” the less we can understand what those bad things mean. Good actions benefit us, directly and indirectly. In contrast, when we remove ourselves from nature, as too many of us do, we can easily and unknowingly spoil the environment. The current record of our behavior toward nature

shows that we have alienated ourselves. I maintain that if we love (value) ourselves in a deep, genuine way, then we will love (value) that which we believe supports us, nature and its wildlife.

To me as an educator and change agent, I see the central task of future educating to be bringing about a new “frame of mind” (Clark, 2020a). A new frame of mind is imperative given our current predicament, both environmentally and culturally (see Wallace-Wells, 2019). This new frame of mind can reconnect people with their origins and what sustains them. Aldo Leopold (1949) wrote about the importance of making this connection. The practical question currently is how we reconnect to nature and wildlife, as it is abundantly clear we have lost this connection. We know that both human-centered and life-centered worldviews are two different approaches for reconnecting that we might work for. However, the question remains: What is to be the foundation for making the value and policy judgments needed for genuine human-wildlife coexistence to become a reality? (Clark, 2020a, 2019a).

I argue that we need a new kind of “attunement” to ourselves and the natural world. This attunement is essential to bring about a new frame of mind. “Attunement” is not about mysticism. Rather, we can find the kind of attunement we need in a wide range of everyday activities, including those that involve a kind of serious involvement with work and living, and connecting with the outdoors and with wildlife (Soga & Gaston, 2016). This new kind of attentiveness requires us to perceive things carefully, while putting aside the demands of self-interest so that we may become lost in the immediacy of the concerns before us, as detailed below.

Coexistence as “Education”

The central concern before us presently is how to educate about the attentiveness, thoughtfulness, and action that we need to conserve nature, wildlife, biodiversity – both individually and collectively as a society. This is about how, when, to whom, and by whom we educate. Individual education is vital, but so is policy, which I consider a form of social education.

Education – The Central Concern – First, I want to outline a few of the central educational issues affecting our potential to achieve human-wildlife coexistence. It is necessary to make several general points in a preliminary fashion because considering them can contribute to the goal of finding coexistence. First, we must look at the possibility that education can help us find coexistence. Education can actively promote positive attitudes and new patterns of behavior that reflect the actual requirements of achieving human-wildlife coexistence. We call the current, dominant educational outlook “environmentalism.” This conventional view prescribes learning about ecology and place (a situation) then, hopefully, beyond that, learning about the generalized, tangible, and doable actions that we can undertake to invoke change. Examples of a tangible action are taking down a fence that blocks wildlife movements, putting up speed limit signs on roads where collisions with wildlife are frequent, and building over- or underpasses for wildlife to safely cross roadways. There are organizations in Jackson Hole, WY, for example, that use this approach, including the Jackson Hole Wildlife Foundation, Jackson Hole Conservation Alliance, and the Greater Yellowstone Coalition. Government agencies take this approach too. These are important, but do not address fundamental problems. We need additional approaches to find human-wildlife coexistence.

Second, instead of laying out pre-formed standards (e.g., taking down a fence), I prefer the approach that assumes education can best further human-wildlife coexistence by encouraging people to explore and engage with environmental and wildlife issues in other ways. The educational outlook that I call for here is a kind of “action competence” combined with “ethical

pragmatism.” This approach encourages people to use their own rationality to look below the surface of human-caused conflicts to examine why these human problems occur in the first place. It also encourages finding out what to do about the deeper problems, especially the philosophic and cultural ones, in our society once we recognize them.

This educational approach encourages people to understand their own critical abilities, as well as their sense of self, nature, and wildlife. It asks people to make interpretations of human-wildlife coexistence in the context of their own first-hand experiences in the practical situations they know about. Organizations in Jackson Hole, WY that use this approach, albeit indirectly and minimally, include the Teton Science School and diverse other groups. The Northern Rockies Conservation Cooperative (NRCC) does so explicitly through its workshops, projects, curricula, diplomacy, public presentations, and publications. Actively educating in this way makes the NRCC unique in this regard in the GYE. Yet, we know that there are larger structural dimensions to our society (e.g., institutions, materialism, instrumentalization, neoliberal economics, scientific positivism, and separation of people from nature) that need attention, too.

A part of the “democratic character” movement in society today – “action competence” and “ethical pragmatism” – involves engaging people with real issues they can decide on and do something about. This approach does not inculcate some pre-established policy or procedure or technical content or formula for action. Instead, it encourages a kind of “rational critical attitude” and an enhanced self-awareness by fostering and teaching a form of “controlled problem solving,” a skill set that leads to solutions in local contexts (Clark, 2002). The NRCC board of directors and some members teach about this approach on a regular and part time basis in diverse college and university programs and through workshops in the region (Wallace, 2016).

Third, both of these approaches – (1) environmentalism, and (2) “action competence” with “ethical pragmatism” – are based on different problematic assumptions. We can classify these depending on how we understand human-wildlife coexistence. Let’s look at the two approaches and their assumptions. First, the “environmental approach” assumes a systematic action policy that is development by people who “know” and impose their view on those who don’t know about what is involved or what to do. Furthermore, it assumes that we can measure its results in terms of a specific action (e.g., how many miles of fence we have taken down). This approach and its underlying values are largely technical and economical. We often assume, therefore, that this approach is unproblematic (this is conventional thinking). It also assumes, first that the relevant knowledge is present and that only experts can hold this knowledge; second that the implications of that knowledge for the moral, social, and political structure of society are consistent with the *status quo*; third that this notion of “education” converges with “common sense and convention,” and fourth, that the public and our officials accept practical ways for achieving human-wildlife coexistence.

Problematic Assumptions – In contrast, the “democratic approach” – “action competence” mixed with the “ethical pragmatism” approach – assumes that rationality is sufficient for understanding human-wildlife coexistence issues, both fundamental and practical. It also assumes that history, precedent, and externally imposed policies or codes do not influence solutions; that the ethics (what is right, axiology) it generates will reflect a purpose, aspiration, and agreement; that the majority of the community will come to share it; and that the kind of knowledge and skill we need, especially the openness of personality and intellect and flexibility of thought, are present in in local contexts.

Practically and realistically, we know now that powerful exploitative and consumeristic motives that are antithetical to human-wildlife coexistence increasingly dominate our society.

Jackson Hole, WY, is the prime example of this dominant attitude at play in the Greater Yellowstone region. Growth in the built environment and human impacts on wildlife are evident everywhere over the last few decades. This behavior is unsustainable.

Moreover, there are significant non-rational aspects at play in the issue of human-wildlife coexistence. For example, generally speaking “adventure recreationists” and supporting businesses are just the most recent demographic worsening our exploitative and consumeristic behavior. Unregulated recreational activities are highly destructive to vulnerable wildlife and environments (Wilkinson, 2019). Various non-rational dimensions further include hedonistic identification and diverse self-interested emotional concerns, including social dimensions. These often manifest as hyper-individualism, a sense of entitlement, and little knowledge and/or regard for other life – wildlife and wild places (Wilkinson, 2019).

Both approaches to education – environmentalism and “action competence” with “ethical pragmatism” – are different ways to address the growing concern about human-wildlife coexistence. Each is differentially practical for promoting specific means and outcomes. At the root though, each approach raises issues about the content of our rationality, values, knowledge, and skills, among many other matters. And when we imagine human-wildlife coexistence as a policy and management consideration, we bring these issues into sharp relief.

Coexistence as “Policy”

As I noted earlier, recent papers and commentaries illustrate the fourth issue of the interpretation of the phrase “human-wildlife coexistence” (e.g., Primm, 2018). The broad appeal of the phrase is also its downfall. By seeming to combine the highly desirable goal of humans living in developed places like Jackson Hole, WY with the equally desired goal of wildlife and environmental conservation, this phrase is liable to divert attention from its highly problematic content when applied in practice.

Policy, Problems, and Alternatives – How are we to understand the human-nature problems that we face? Human-wildlife coexistence is something everyone can subscribe to, from high-level public and administrative officials to individual citizens (Wilkinson, 2019) to businesses (e.g., Chambers of Commerce). Officials and businesses try to create conditions for rapid economic growth. Meanwhile, most other people try to live in ways that meet their material and personal needs. However, simple questions can reveal the problems with the human goal of coexistence with wildlife and nature. For example, what is human-wildlife existence in actuality? At what level and over what spatial and temporal scales are we talking about? By asking these and other questions, we break down the consensus and reveal how empty the word symbol or the label “human-wildlife coexistence” really is (Gao, 2018).

We know that a word symbol or label carries many semantic connotations. Words also carry ethical dimensions (mostly unconscious and implicit) that need our attention. We need to unpack these three issues briefly. First, semantic considerations allow us to interpret the term in ways that are congenial to our present economy and living arrangements – *the status quo*. In doing so, we neglect the serious ecological concerns evident from our present harmful human actions. Second, ethical considerations depend on the rights and duties of humans to each other and to the rest of nature and wildlife. In this case, what is the foundation for any anthropocentric (human centered), bio-centric (nature centered), or other ethical basis? (Flores & Clark, 2001). The ethical dimension raises basic and fundamental issues about how we should ground ethics. Presently we are not in agreement in the GYE on this point. Third, knowledge is about what we need to know

to address the human-wildlife issue. These human dynamics are always involved in all human activity, including our current, very incomplete state of knowledge about them (including our self-awareness of them). It also includes our philosophic beliefs about “what is,” “reliable knowledge,” “right relations,” and more (Passmore, 1974; Bonnett, 2013).

The three concerns above represent very significant challenges for us in articulating human-wildlife coexistence as a policy and as a set of management actions. By this, I mean for finding a practical strategy or course of action using instrumental rationality in the service of a clear and valued pre-specified goal (this is what we are seeking to do now through planning and environmentalism). As such, how are we to judge what actions will positively contribute to human-wildlife coexistence? Even if the ends of any human-wildlife coexistence policy were clear and unproblematic, would we be in a position to judge how to move forward? How do we construct a policy and management actions in the Jackson Hole, WY and Greater Yellowstone Ecosystem contexts given the present situation? Currently it is impossible to avoid every action that might have detrimental effects on wildlife and the environment.

Problems in both the goal and means come to light once we try to act. For example, how are we to proceed in Jackson Hole and the GYE, areas strongly dominated by a culture that arguably uses motives, thinking, and actions to preclude any approach to coexistence issues that are genuinely open to a new understanding of our relationship to wildlife and nature? This is a cultural or constitutive problem of the first order (see Clark, 2019). In short, the present situation is a context and culture blindly committed to the *status quo*. To change goals and actions, we need to examine our everyday values and outlooks first. In doing so we will likely arrive at the conclusion that we need to significantly change our values and relationship to wildlife and nature at both individual and societal levels. This requires transformation.

Transformation – What Will it Take? What are the kinds of transformation needed in Jackson Hole, WY, for example, in terms of our motives, thinking, and actions? For example, what do we need to do to approximate coexistence in reality? I argue here that it requires getting over our lack of “internal” insight (self-awareness, blockages to high order reflection on such, and philosophic matters) about what we are doing now and why. Again, this is both an individual and societal concern. We need to get over our limited reflectivity (convention), current views of our capacities, the presumed nature of the problems as a struggle to render them “technical,” thus taking the “politics” out of the matter (Miller, 2005; Li 2007). At the same time, we cannot turn to some other in-place “eco-sympathetic” practice used elsewhere to provide us with local solutions. In reality, our culture is not devoid of the necessary intellectual foundation and knowledge to effectively articulate and address human-wildlife coexistence issues in places like Jackson Hole, WY and the GYE. We can see in our society today obvious trends where we are struggling to be in concert with nature and wildlife. We need to learn from those efforts to avoid repeating our problematic struggles.

Below, I will argue that an adequate response to the highly unsustainable predicament we are in requires a basic and foundational rethink – a cultural or constitutive transformation. Some people may call the kind of change I am promoting a metaphysical (reality) or ontological (truth) transformation. Regardless of the label, any transformation must arise because of our new understanding of the significance of the human-wildlife coexistence issue at hand (Kuhn, 1962; Guba, 1990; Brunner, 2006). Yet a practical question arises: Is there enough “space” (social, intellectual, pragmatic) in our culture in places like Jackson Hole, WY and the GYE and their institutions to come to the needed realization and policy discussion? We can see that the dilemma

is in our own metaphysical and ontological grounding that we must change from the current and dominant conventional views that are so destructive.

Our perspective or worldview determines what is possible and fitting for us to think and do and what is not. In short, our worldview is what helps us determine the “right relationship” with nature and wildlife. These basic, fundamental issues set our horizon and provide a framework (paradigm), so to speak, about our sense of what is real, what knowledge is, what is right, our sense of things, and what we see we should be doing, as noted above (Terway, 2018). I am arguing that through education and policy innovations we can make the needed changes or transformations to find coexistence, should we choose to do so. In essence the key question is this: What is the “frame of mind” or “system of thought” now absent that we need to guide our policy and living? The next section speaks to that question.

Coexistence as a “New Relationship”

How does it happen that a relatively small number of [people] ... have control over the behavior and destinies of the vast majority of people of the world? [Is] it ... because the majority have not known how, or have refused, to accept responsibility? ... [If so, according to John Dewey, this is a] failure ... that has delayed the development of democracy. (cited in Castree 2014, p. v)

The line of my inquiry thus far leads us to examine the possibility of a new approach (frame of mind or system of thought) to human–nature and wildlife interrelationship that is neither self-centered nor conventional. This new approach is about seeing a relationship with nature and wildlife that is oriented around human interests or wants while at the same time ultimately not destructive to other life forms, as is true now. This brings us to the subjects of our own attentiveness and ethics in our behavior.

Attentiveness and Ethics – Different people are differentially attentive to themselves and the world around them. Attentiveness is the exercise of patience that is determined to see things justly and the rejection of fantasy, self-delusion, and convention (Bonnett, 2015). Attentiveness typically focuses on the details of ordinary life, often the material and social parts, at least in a general way. Our conventional, dominant views seldom challenge this focus of attention. In contrast, the more attentive attitude that I am calling for expands conventional attentiveness to more centrally appreciate nonhuman life. This expansion is not about a “neo-romancing” of mind or merging with some vague sense of mystical nature. Quite the contrary. Attentiveness as I see it should involve a sense of the standards implicit in self-understanding and self-mastery, including active self-awareness and adult developmental growth (Kegan 1994?). Ultimately, attentiveness is about genuine mutual flourishing of self and community, nature, and wildlife, all at the same time in a reciprocal interrelationship to one another (Bonnett, 2012).

Concerning ethics, where do ethical standards come from? The standards I am referring to come out of one’s testing of one’s own actions against the internal good of an activity (outcomes) (Bonnett, 2012). By this, I mean the testing of one’s attentiveness and actions should rest on the actual mutual flourishing of self, nature, and wildlife. To be sure, this view of attentiveness and ethics is highly contested today in our materialistic, self-centered culture. People’s use of the GYE today well illustrates this fact. In such circles, individuals often actively reject the testing I am calling for. How is attentive (self-aware, reflective, insightful) the ideal of human-wildlife coexistence itself in GYE? What is self-understanding? What is self-mastery? What are internal

goods? What is worth doing? What are nature and wildlife in the first place? These subjects and questions are not presently part of conventional attention, certainly not in GYE, but they should be if we are to find education, policy, and management for coexistence.

One way to think about these questions is as part of a new paradigm (frame of mind, system of thought) for coexistence. Perhaps the needed new paradigm is already present and visible in the other kinds of close human interactions, such as the parent-child relationship. Ideally these kinds of relationships show a very high degree of intuitive sensitivity, which is a kind of attentiveness. Hopefully, we can widely foster such attentiveness and come to show a sensitive kind of reciprocity of actions, feelings, and satisfaction amongst humans and wildlife. If we take this kind of relationship, how can we transfer it to the world with nature in general and with wildlife in particular through education and policy. The basic question is: Will the expanded relationship capture the “right relationship” with nature and wildlife that is so desperately needed at present?

Take this example. Could any rancher in the GYE not say that his attentiveness and ethics in the running of his cattle ranch are adequate? Could he not claim he is constantly responsive to attending to what his cows need? And, because of this attentive relationship, could he not logically conclude that he has to kill predators and competitors? Greed and materialism need not be his motives since, it can be argued, they are not compatible with his flourishing or that of his animals. I argue that what we need is just a simple kind of appreciation, a simple kind of elegance of relationship between humans and wildlife. Ideally, it should be one of deep caring. Some people seem to show such a caring presently, but many do not (e.g., Robinson, 2017).

Demands from Nature – In considering all of the above, let me ask these questions: In what sense can nature make demands on us? Take the example of an adventure recreationist mountain biking or a person backcountry skiing or rafting. Why should a recreationist see herself as part of nature concerned with wildlife’s welfare when engaged in such exhilarating, fun, adventurous activities, whether experienced in emotional or ethical terms? Is such a person flourishing because she is financially, materially, or culturally so well off that she can afford such activities? Is that activity really part of a richly fulfilled life because she experiences and enjoys her own physicality riding her bike outdoors on a publicly owned forest with her friends on a nice day? Riding or skiing in or near critical wildlife winter range may be thrilling, to be sure, but there are consequences. Yet, if one stops and thinks, one can see that her culture and its institutions enable her to experience life as she does – to flourish as a human being in this way. In turn, that culture offers her a “prescribed” understanding and representation of her interconnectedness to nature and wildlife in the first place – the recreational life she is living out. The culturally prescribed frame gives her a way to make meaning for herself. In living that life, what does nature or wildlife demand of her, if anything?

Such questions raise other questions. Perhaps most salient: Is closeness to nature and wildlife an essential of the good life? For a few people, including the famous conservationist Aldo Leopold, the answer is “yes,” most definitely (Leopold, 1949). Yet many people today would say, “no.” Why should the adventure recreationist attune herself to nature and wildlife or assume an ethical stance about them as called for in this essay? These questions throw light on the meaning of life for her and her sense of self, placement in the world, and responsibility. The point here is what should a person’s relationship be with nature and wildlife? Is deep absorption in nature and knowing about wildlife a requirement? Again, the answer is often “no,” as the behavior of the adventure community illustrates. Clearly, whatever the relationship is with nature and wildlife, it is not an important part of many of our identity’s or self-knowledge. Simply put, the way we as individuals and as a society interpret nature and the presence of wildlife as a whole is in the end

about whether we humans see ourselves as apart from it all. Our degree of attentiveness and self-awareness about these matters tells us a lot about the sort of being human beings we are ethically. Is it possible to involve ourselves and our communities in critical reflection about our behavior and the need for a new relationship with nature?

The famous philosopher Martin Heidegger was right in saying that our idea of nature refines our understanding of and our attitude about the world, nature, and ourselves. Basically, that attitude tells us about our self-contours and what we can count as human flourishing. A question arises: What attitude or frame of mind do we need to flourish in a sustainable way with nature and wildlife in the GYE? These new attitudes or frame of mind are likely quite different from what we hold widely today, conventionally. This question gets directly at what we mean when we talk about genuine coexistence as an attitude or frame of mind. The answer for the recreationist and for the rest of us, is not simply an issue of her attitude or ours towards nature and wildlife. It is far more complex than that.

To get at a practical answer to the core question above is to go to the very most fundamental ethical (axiological), knowledge (epistemological), and metaphysical (ontological) considerations that we as humans existentially grapple with. Our responses to these questions are the very basis of our human being (Terway, 2018). They are foundational to all that we are, both in our mind and behaviorally (practicality), as these matters are concerned with human practices and the conception of values embedded or contained within them. Yet we seldom discuss these questions and our sense of self and behavior in personal or public life, either conventionally or functionally (see Lasswell & McDougal, 1992).

To gain the needed frame of mind on coexistence that I am arguing for, we must reconsider our present foundation – both philosophically and practically. Currently we express that foundation of our culture and individual identity in terms of our presumed separation from nature (our human attempt to master or control nature), our over-reliance on science (as positivism used as a rigid ideology that objectifies and externalizes problems), and neoliberalism (capitalism, materialism, markets, efficiency) that dominate our present culture. What I am calling for in this essay is not some abstract or obtuse inquiry with no consequences. I am calling for a new set of fundamentally orienting motives (grounding, pragmatic philosophies) for our own being and flourishing with nature. To achieve this will require us to build a new relationship to nature and wildlife.

Reciprocal Relations and Coexistence – We need new contours of understanding and real changes in our behavior if we are ever to live in coexistence with nature and wildlife. This new understanding and behavior require us to make deep connections with ourselves and nature. What I am calling for in this essay will challenge us to critically reexamine our current, unbridled, human-self-centered view of ourselves and the “right” uses of nature (e.g., the ethics of adventure biking and skiing in key wildlife habitat). Can we honestly ask such questions of ourselves now? Do we have the intellectual and developmental maturity and the cognitive resources to critique what we are doing at present and replace it with a warranted, new “right relationship” to nature and wildlife? Are we giving adequate attention to these matters currently in society and in GYE? Is there sufficient consciousness of these matters presently to permit us to work through our position in the greater scheme of things, in places like the GYE? For example, the idea of reality is itself a human-related notion. As such, things show up in our mind, but only in the space of our consciousness. The idea of a “greater ecosystem” in the Yellowstone country is also a human-generated notion. Thus, it is a good place to actively engage in attentiveness and ethics that I bring up in this essay.

Professor Freya Matthews (1994), an Australian environmental philosopher whose main work has been in the areas of ecological metaphysics, makes similar points to mine, as do many other authors. Matthews says that we can only connect in a rich emotional, imaginative, artistic, aesthetic, intellectual, and spiritual way with nature and wildlife through a deep exploration and reflection on what we humans are. Our culture that enables us to flourish as human beings presently should focus on that relationship, but it does not do so now, certainly not in the GYE. Perhaps people do not see that human flourishing requires a deep absorption with nature and other life forms (and consciousness as self-reflective individuals) in order to sustain flourishing over the long-term. I argue that in the long run, the change we need requires a connection that shows sympathy, empathy, and identification. Yet, presently this kind of consciousness and engagement is in little evidence (Lasswell, 1972).

Matthews goes on to say only through our awareness of our interconnectedness with nature and wildlife can we experience our own authentic presence in the world. Furthermore, she says such a view is a self-realizing system, a system that is internally connected in a deeper ecological way than convention presently allows. When she speaks of ecological, she means a system in which human individuals perceive themselves as part of a larger organic whole and in a relationship with all other parts (see Bohm, 1980, 1992; Selby 2007). Overall, as I see it, we are held to flourish only when we live in a way that sustains the ecosystem in which we help all others to flourish, whether other humans, nature, or wildlife. We have a long way to go to realize this behavior in GYE. Now is the time to begin.

What I am encouraging represents a certain critical attitude that is rare today. Such an attitude challenges our current conventional egocentric ideas and living. It asks us to examine our present-day unbridled self-centeredness, our focus on materialism, and our general disregard for nature and wildlife. It requires us to critically examine the consequences of our present conventional mindset as we live it out – individually and collectively. Convention presently ignores the way in which our reality shows us up to ourselves, also a human-related construct (Damasio, 2018). What I am talking about and calling for offers an alternative system of thought for us to use in contrast to the worldview now dominating our culture. If we take this call seriously, we can shift to a new frame of mind. Importantly, this requires a new kind of human consciousness.

Recommendations – Education for Coexistence

The ability of education to bring about actual human-wildlife coexistence requires a significant change in how we think about development, materialism, and human flourishing, whether in the GYE, or elsewhere. It also recognizes humankind's special place worldwide today (Lynch & Veland, 2019). The education that I am calling for runs counter to the core motives and values that many of us hold – the very motives and values that dominate our culture today. Those harmful motives are on the ascendancy in our society and globally, or so it appears, certainly in the GYE (see Marien, 2019). This bodes very poorly for the future of wildlife, biodiversity, and nature everywhere, including the GYE, unless we do something very soon. The way forward is through education. I offer a five-part educational approach.

A Way Forward

In education, if we are ever to enable people (and society) to address the issues raised because of our destructiveness, we must move beyond looking only at the symptoms of our

disruptive thought and behavior, both individually and collectively. We must move to a strategy of action competence mixed with pragmatism. Symptoms of human-caused problems are typically presented and masqueraded as causes (Clark, 2019b). For example, deer hit by cars on roads are not a “wildlife problem” but instead the consequence of the roads we built in the first place in deer winter habitat and high speeds we drive along those roads. Conventionally, we humans see roads or deer as the problem, not our thinking or our behavior that motivated the road in the first place. Too often, we externalize the problem, placing it “out there” on deer or roads. Why do we do this? Simply put, we tend to externalize our understanding of problems that make it appear problems are things that exist out there in the context. In contrast, our prevailing values and social/economic/political arrangement (the “inside of us”) determine what appears on our “radar” as problems (Clark, 2019a). Such arrangements direct our attention outward to things and away from our own problematic inward thinking and behavior. This problem – our thinking – is the gorilla in the room, so to speak. This is the major problem we face – one of falling into bounded, in-the-box ways of knowing and thinking about problems!

We have two options. First, we can proceed on the basis of easy assumptions about the goals of coexistence, as we are currently doing using environmentalism. This approach is deeply embedded in most environmental organizations and government agencies working in the GYE today (Cherney, 2011). We now see coexistence as though it were only a technical or engineering problem, an externalized kind of material problem, rather than a problem of human meaning in relationship with nature and other life. As well, we often see the coexistence problem as a policy or management problem of some kind, whose chief challenges are how to plan and implement our way out of the problem. This approach is limited as it does not allow us to get at the root of the problem – our own problematic thinking and actions. To address these, we should look at our basic motives inherent in our most fundamental way of thinking about ourselves in the world. This option encourages us to go deeply into fundamental philosophic matters and simultaneously undertake pragmatic work (see Bonnett, 2004, 2009, 2012, 2013, 2015; Terway, 2018). This option requires investigation that is presently discomfiting to many people, yet unavoidable if we really want to learn to live in a wildlife-rich place like the GYE. This approach invites us to take a deep dive into our own consciousness, an option in which we take the challenge as an educational and practical opportunity for ourselves. This educational option brings up issues of the quality of our existence. This quality comes to us in its reciprocal relation to our consciousness, our attentiveness, and our ethical relationship to nature and to wildlife.

A New Approach

Education can give us a new sense of self-in-nature (Sellers, 2000; Wallace, 2016). Education also can give us a new meaning and a new sense of responsibility to wildlife. Certainly, meaning takes place or emerges to us in the context of human consciousness, concerns, and practices. Our context and society condition our reality, both internal and external to the individual. Notions of care, sympathy, empathy, identification, and responsibility (attitudes that bring things close to each other) are only possible if our daily sensitivities operate or function as consciousness. We can educate ourselves to these matters as a new consciousness, if we so choose.

These are all subjects that education can attend to, individually, personally, and publicly. This education is the kind of consciousness about nature and wildlife that could define us. However, we need to change our present definitions to get to the new frame of reference. Thoughts

show up in our consciousness and in doing so, in one sense, become the things that we are (and our reality; Gao, 2018). They come to be within our own individual and cultural self-generated sense of significance. This process of awareness makes up our self-produced horizon of meaning and consciousness. In this sense, they are indelibly human constructions. How do we educate people in the GYE to enlarge their consciousnesses and come to see new needed actions for coexistence?

In thinking about education for this coexistence goal, I said that we need to recognize that all “things” (e.g., wildlife) are human-related, but that statement is only a partial truth. It implies that the Lamar Valley wolf’s existence is not purely a product of our mind or consciousness (Clark 2020b). Consciousness alone is not the author of all things (e.g., nature, wolves, forests). In fact, consciousness is nothing without the “things” it accounts for (i.e., the wolf, its environment, and what we call Yellowstone National Park). Real things make up consciousness as much as consciousness makes up things – it is complex. They are in a mutually constitutive relationship. Furthermore, consciousness does not offer an evaluation or give an ethical stance toward things. A key question arises: Are we presently educated to such an understanding of nature, wildlife, and ourselves? The answer is “NO.” Consequently, we need a new approach to education.

A New Consciousness

We need to educate about our own consciousness, among other things (Blake et al., 2000). Consciousness is the space where things “stand forth” with all their cultural significance. It is precisely the quality of this conscious space at any moment that is important to us – meaningful. We are not the author of these things, but only the “occasioner” of them. Only we can recognize or assign value to them (e.g., a wolf). And it is only those entities (e.g., a wolf) functioning at our level of consciousness that makes our thinking possible. For example, take that previously mentioned experience with nature – watching wild wolves in Lamar Valley (Clark 2020b). These things, this wolf watching example, stand forth and condition our consciousness. We can be deeply affected by the sheer drama of the otherness of non-human things (e.g., the majesty of the geology of the Teton Mountain Range). Yet somehow these things can appear inscrutable, unknowable. They simply stand forth and we bring our cultural significance to viewing them. This condition is the precise quality of conscious space in us at any moment. Do we want to achieve that kind of broad consciousness in the GYE, if we can? If yes, doing so requires education.

To re-emphasize, we are not the authors of “thingness,” but the occasioner of the thing (Bonnet, 2015). Things may seem to be independent of us and have intrinsic value (e.g., nature). This is true of thought functioning at a high level of consciousness, which can confer or recognize those values for us. As such, it is perfectly intelligible for us to explore some aspects of nature and wildlife and for them to deeply affect us. For many people, standing in the Lamar Valley of YNP watching nearby bison herds is such an experience. Consider the feelings of deep connectedness and respect that such a personal experience can invoke.

Based on Bonnet’s works, and those of others, our experiences and consciousnesses locate the essence of our presence in nature and our relationship with wildlife, wherever we are. It is the very event of being conscious at a high level that perhaps differs us from the people who exist in everyday perception and living. We cannot regard everyday living as an exercise in dealing with our consciousness. However, everyday living legitimizes the veiling of thought that often hides our own thought from ourselves. This is what Arendt (1971) calls “convention.” Consciousness involves opening up our responsiveness and responsibility to the things with which we share the

world. My argument in this essay roots human-wildlife coexistence in our consciousness. Truth as our awareness of things, disclosed to us and facilitated and expressed through language, is at the very heart of human consciousness. Our consciousness manifests and celebrates what is, as appended through our motives coming out of our evolutionary history. That history and set of predispositions are the context in the present (Geary, 2005). Ideally, our language is fitting to properly express this relationship, but often it is not (Gao, 2018). If not, then we must educate ourselves so that it does.

A New Direction

The above text offers a view of coexistence that lies – or should lie, at least – at the heart of human consciousness. In saying what I have thus far, I am reasserting a broader and more demanding conception of the contribution that attentiveness and curriculum should have to environmental education and policy as well as to our living most broadly. We can educate ourselves to such a view, if we so choose.

Coexistence is an attitude of mind that opens up our consciousness and can change our behavior. It is about letting wildlife be as they are and as they seek to safeguard themselves from us and our intrusions. This view is clearly a different conception of coexistence from our current dominant, conventional one that is about sustainable yields, population dynamics, carrying capacity, and harvest rates. The coexistence view I support is also different from our current dominant, conventional one about efficient markets, monetizing nature via “ecological services,” and the myth of unlimited growth (Buscher & Fletcher, 2016). The dominant, conventional way of thinking now in place sees wildlife as a material “resource” to have ready and on hand so that we can use it in our economy (e.g., ecotourism, photography, viewing). Instead, I argue that wildlife should be about our concern to let things be as they are in themselves. It should be about safeguarding, preserving, and conserving wildlife as other living beings deserving of consideration within our ethics and ethical lives. This is a very different sense of living in the GYE from the conventional, everyday view that we now hold. To bridge the gap between convention and what I recommend requires education, but not any kind of education.

Education can give us a kind of mental resource, a kind of consciousness and mindset of connectedness to other living entities. Such resources are now absent in some individuals and the body politic in the GYE. Because of that absence, we are denying the opportunity of our own flourishing. We can educate ourselves to a whole new kind of existence or frame of mind, if we want. This new frame of mind is one that sees human-wildlife coexistence as an attitude of mind and under our control. It seeks openness to as many facets and significances of nature and wildlife as possible. It involves a deep kind of *simpatico* with non-human life of the planet. Such is a necessity, if we are to flourish. This is our educational imperative, and it is urgently needed now.

An Educational Strategy

In the case of the GYE, we need a strategy to move us toward coexistence well beyond what we are doing now. The Northern Rockies Conservation Cooperative (NRCC) based in Jackson, WY is one leading organization allied to various educational philosophies and practices. There are many individuals and organizations presently looking at the GYE as a “learning environment” (e.g., Marsh, 2014; Wallace, 2016). Certainly, all of us need to assess our current educational practices and make recommendations for a better future. The GYE is an opportunity

to produce a unique, exciting, highly varied, and internationally-recognized model for nature-based educational programming (see Wallace, 2016).

The GYE is a natural laboratory for the study of environmental and conservation problems. Basic biophysical research has been ongoing for decades in the GYE. The NPS and numerous other federal agencies and nongovernmental organizations sponsor and implement educational programs in the region. Educational programs now target varied audiences and address an enormous diversity of topics, although ecological subjects are most common (see Wallace, 2016). It is not clear what the cumulative impact or potential may be of including the kind of moral education I call for in the GYE. My hope is that it promotes the new consciousness or relationship to nature that we so desperately need if we are to achieve goals of coexistence.

In my work with Richard Wallace and others through the NRCC, we are assaying the GYE's educational landscape, including programs that a representative sample of organizations of different types and orientations run. Because the national parks and other public lands drive visitation to the GYE, agency interpretive programs are central to understanding the overall educational landscape. The goal of our work is to assess the GYE as an educational landscape, using a vision of education that reflects the interdisciplinary, applied theory and methods of the field of environmental studies, as well as the philosophic and practical approach that I present here with the hope of giving students to tools to address complex conservation problems. Wallace and I are looking for opportunities to encourage education that attends to many of the issues I address in this essay, particularly education that promotes action competence mixed with ethical pragmatism.

The NRCC is the only organization in the GYE working to educate about action competence mixed with ethical pragmatism, explicitly and as described in this essay. The NRCC seeks to educate about realistic, practical problem solving, rapid co-learning, networking, and shared experiences and lessons. As such, the NRCC is a prototype that is about action through education to encourage the view of human-nature (wildlife) called for in this essay. This focus requires we humans to be especially insightful and thoughtful about ourselves and our activities in relation to nature and wildlife.

Conclusion

I hardly need to say that in an educational context, our aspirations to promote human-wildlife (nature) coexistence as a frame of mind require much of us. It requires that we find a kind of receptive and responsive relationship to the other life with which we share the planet. I argue that we need a new relationship with that non-human life that is constitutive of authentic human consciousness. We must locate ourselves in a particular way in life and in terms of planet-wide process and history. This is true in the GYE case too. We must never lose our connectedness and sense of intimacy with wildlife, nature, and all life. Much of what I am calling for in this essay falls well outside what is formally taught in our conventional curriculum in colleges and universities and in our society for responsible adulthood – action competence mixed with ethical pragmatism. In the end, I am recommending for us to be successful in the great enterprise of life and living for human flourishing in places like the Greater Yellowstone Ecosystem and throughout the world.

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I owe a huge debt of gratitude to a great many people. My colleagues, especially Gao Yufang, Tim Terway, and Richard Wallace, are among them. I have had many colleagues in the GYE, locally, nationally, and internationally over the decades. Too many to name individually, they have been helpful to my thinking and work. I cannot communicate how important they all have been to me. The writings of Bonnett, Castree, Quay and Seaman, Bohm, Selby, and many others are vitally important to my education. My colleagues at the Northern Rockies Conservation Cooperative, Wyoming, and its supporters, including Peyton Curlee, Avana Andrade, Cathy Patrick, the Board of Directors, and associates provided diverse working options and support. Finally, but not last, my many students and colleagues at various universities, including Yale University, have been especially helpful over decades. I benefitted from critical review by Anna Redside, Nicole Natrass, Peggy de Pasquale, and Ben Williamson.

References

- Ardent, H. (1971). *Life of the mind*. New York: Harcourt.
- Blake, N., Smeyers, P., Smith, R., & Standish, P. (2000). *Education in an age of nihilism: Education and moral standards*. New York: Routledge.
- Blom, P. (2017). *Nature's mutiny: How the Little Ice Age of the long seventeenth century transformed the west and shaped the present*. New York: W.W. Norton.
- Bohm, D. (1980). *Wholeness and the implicate order*. New York: Routledge.
- Bohm, D. (1992). *Thought as a system* (transcription of a seminar held in Ojai, California, from 31 November to 2 December 1990). New York: Routledge.
- Bonnett, M. (2002). Education for sustainability as a frame of mind. *Environmental Education Research*, 8(1), 9-20.
- Bonnett, M. (2004). *Retrieving nature: Education for a post-humanist age*. New York: Blackwell.
- Bonnett, M. (2009). Systemic wisdom, the 'selving' of nature, and knowledge transformation: Education for the 'greater whole.' *Studies in Philosophic Education*, 28, 39-49.
- Bonnett, M. (2012). Environmental concern, moral education, and our place in nature. *Journal of Moral Education and Environmental Concern*, 41(3), 285-300. <https://doi.org/10.1080/03057240.2012.691643>
- Bonnett, M. (2013). Normalizing catastrophe: Sustainability and scientism. *Environmental Education Research*, 19(2), 187-197. <https://doi.org/10.1080/13504622.2012.753414>
- Bonnett, M. (2015). The powers that be: Environmental education and the transcendent. *Policy Futures in Education*, 13(1), 42-56. <https://doi.org/10.1177/1478210314566730>
- Brunner, R. D. (2006, February). A paradigm for practice. *Policy Sciences*, 39(2), 135-167. <https://doi.org/10.1007/s11077-006-9012-9>
- Buscher, B., & Fletcher, R. (2016). Accumulation by conservation. *New Political Economy*, 20(2), 273-298. <https://doi.org/10.1080/13563467.2014.923824>
- Camenzind, F. J. (2017, August 14). Franz Camenzind pens "wild ideas." *Mountain Journal*. <https://mountainjournal.org/american-conservation-history-flows-through-greater-yellowstone>
- Castree, N. (2014). *Making sense of nature*. New York, NY: Routledge.
- Cherney, D. N. (2011). *Environmental saviors? The effectiveness of nonprofit organizations in Greater Yellowstone* (Ph.D. dissertation). Boulder, CO: University of Colorado at Boulder.
- Clark, S. G. (2002). *The policy process: A practical guide for natural resource professionals*. New Haven, CT: Yale University Press.

- Clark, S. G. (2008). *Ensuring Greater Yellowstone's future: Choices for leaders and citizens*. New Haven, CT: Yale University Press.
- Clark, S. G. (2019a, in review). Signals from Yellowstone's future: A case for a new conservation paradigm. Submitted to University Press.
- Clark, S. G. (2019b). Pathologies of knowing (epistemology) and practice (pragmatics): How to recognize and avoid them in conservation, society, and pedagogy. *Journal Multidisciplinary Research*, 11(1), 5-29. [http://www.jmrpublication.org/Portals/JMR/Documents/JMR%2011\(1\)%20Spring%202019%20Internet.pdf](http://www.jmrpublication.org/Portals/JMR/Documents/JMR%2011(1)%20Spring%202019%20Internet.pdf)
- Clark, S. G. (2020a). My standpoint and work as a university professor and pragmatic, applied change agent. *Journal Multidisciplinary Research*, 12(1), 5-31. <http://www.jmrpublication.org/portals/jmr/Issues/JMR12.pdf>
- Clark, S. G. (2020b). Making better sense of wolves. In D. Smith et al. (Eds.), *Wolves of Yellowstone* (pp. 277-279). Chicago, IL: University of Chicago Press.
- Clark, S. G. (2021, in press). *Yellowstone's survival and our call to action: Making the case for a new ecosystem conservations story*. London, UK: Anthem Press.
- Clark, T. W. (1999). Interdisciplinary problem solving: Next steps in the Greater Yellowstone Ecosystem. *Policy Sciences*, 32, 393-414. <https://doi.org/10.1023/A:1004717427462>
- Damasio, A. (2018). *The strange order of things: Life, feeling, and the making of cultures*. New York: Random House.
- Filho, W. L., et al. (2020). Heading towards an unsustainable world: Some of the implications of not achieving the SDGs. *Discover Sustainability*, 1(2), 1-45.
- Flores, A., & Clark, S. G. (2001). Finding common ground in biological conservation: Beyond the anthropocentric vs. biocentric controversy. In S. G. Clark, et al. (Eds.), *Species and ecosystem conservation: An interdisciplinary approach* (pp. 241-252). Bulletin 105, 1-276. New Haven, CT: Yale University, School of Forestry and Environmental Studies.
- Gao, Y. (2016). An annotated bibliography of human-wildlife conflict. New Haven, CT: School of Forestry & Environmental Studies, Yale University. Unpublished.
- Gao, Y. (2018). Combined anthropology/forestry & environmental studies. (Unpublished doctoral degree program qualifying examination). New Haven, CT: Yale University Graduate School.
- Geary, D. C. (2005). *The origin of mind: Evolution of brain, cognition, and general intelligence*. Washington, DC: American Psychological Association.
- Guba, E. G., ed. (1990). *The paradigm dialogue*. London, UK: Sage.
- Harari, Y. N. (2015). *Sapiens: A brief history of humankind*. New York: HarperCollins.
- Henrich, J. (2020). *The WEIRDest people in the world: How the west became psychology peculiar and particularly prosperous*. New York: Farrar, Straus, and Giroux.
- Holloway, M. (2018, November 15). Your children's Yellowstone will be radically different. *The New York Times*. <https://www.nytimes.com/interactive/2018/11/15/climate/yellowstone-global-warming.html>
- IPBES (Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services). (2019, May). *Global assessment report on biodiversity and ecosystem services*. Paris, France, and Bonn, Germany: United Nations Environmental Programme. <https://ipbes.net/global-assessment>
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard Business Press.

- Knight, J. (2000). *Natural enemies: People-wildlife conflicts in anthropological perspective*. Abingdon, UK: Routledge.
- Kuhn, T. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Lasswell, H. D. (1972). Future systems of identity in the world community. In C. E. Black, & R. A. Falk (Eds.), *The future of the international legal order* (vol 4. pp. 3-31). Princeton, NJ: Princeton University Press.
- Lasswell, H. D., & McDougal, M. S. (1992). *Jurisprudence for a free society: Studies in law, science, and policy*. New Haven, CT: New Haven Press.
- Leopold, A. (1949). *A sand county almanac*. New York: Ballantine Books.
- Li, T. M. (2007). *The will to improve: Governmentality, development, and the practice of politics*. Durham, NC: Duke University Press.
- Lynch, A. H., & S. Veland. (2019). *Urgency in the anthropocene*. Boston: MIT Press.
- Lynn, W. S. (2006). Between science and ethics: What science and the scientific method can and cannot contribute to conservation and sustainability. In D, Lavigne (Ed.), *Gaining ground: In pursuit of ecological sustainability* (pp. 191-205). Limerick, Ireland: University of Limerick.
- Marcus, W. A., Mecham, J. E., Rodman, A. W., & Steingisser, A. Y. (2012). *Atlas of Yellowstone*. Berkeley, CA: University of California Press.
- Marien, M. (2019). Top 25 recent online reports on global environmental emergency. *Cadamus*, 4(1), 101-138,
- Marsh, S. (2014). *A hunger for high country; One woman's journey to the wild in Yellowstone country*. Corvallis, OR: Oregon State University Press.
- Marsh, S. (2019, January 17). Earth to Greater Yellowstone: Taking note of the wondrous planet we call home. *Mountain Journal*. <https://mountainjournal.org/earth-to-the-greater-yellowstone-ecosystem>
- Matthews, F. (1994). *The ecological self*. London, UK: Routledge.
- McDougal, M. S. (1992-93). Legal basis for securing the integrity of the earth-space environment. *Journal of Natural Resources and Environmental Law*, 8, 177-207.
- McKibben, B. (1989). *The end of nature*. New York: Anchor Books.
- Miller, D. (2005). *Materiality*. Durham, NC: Duke University Press.
- National Geographic Society. (2016). Yellowstone: The battle for the American West. *National Geographic*, 229(5), 1-172.
- Nyhus, P. J. (2016). Human-wildlife conflict and coexistence. *Annual Review of Environment and Resources*, 41, 143-171. <https://doi.org/10.1146/annurev-environ-110615-085634>
- Organisation for Economic Cooperation and Development. (2018). *Annual report*. Paris, France: Author.
- Passmore, J. (1974). *Man's responsibility for nature*. New York: Charles Scriber's Sons.
- Primm, S. (2018). Field notes from twenty years of living into a story of grizzly reconnection In L. Miller, L. Excell, & C. Smart (Eds.). *Reimagining a place for the wild* (pp. 31-39). Salt Lake City, UT: University of Utah Press.
- Quamen, D., & Wilkinson, T. (2016.) *A journey through America's heart: Yellowstone*. Washington, DC: National Geographic Partners.
- Robertson, L. (2017). Wyoming Untrapped. wyominguntrapped.org/team-member/lisa-robertson
- Sebeok, T. A. (2001). *Signs: An introduction to semiotics*. Toronto, Canada: University of Toronto Press.

- Selby, D. (2007). Reaching into the holomovement: A Bohmian perspective on social learning for sustainability. In A. E. J. Wals (Ed.), *Social learning toward a sustainable world* (pp. 165-180). Utrecht, Netherlands: Wageningen Academic Publishers.
- Sellars, W. (2000). *Empiricism and the philosophy of mind*. Cambridge, MA: Harvard University Press.
- Soga, M., & Gaston, K. J. (2016). Extinction of experience: The loss of human-nature interactions. *Frontiers in Ecology*, 16(4), 222-230.
- Taylor, C. (1989). *Sources of the self: The making of the modern identity*. Cambridge, MA: Harvard University Press.
- Teton County, Wyoming. (2012). Teton County, Wyoming, Comprehensive Plan. Jackson, WY. <https://www.tetoncountywy.gov/722/Comprehensive-Plan>
- Terway, T. M. (2018). *Sustained in significance with(out) context and ourselves: Expert environmental knowledge and 'social-ecological systems'* (Ph.D. dissertation). New Haven, CT: Yale University.
- United Nations. (2019). Nature's dangerous decline 'unprecedented'; species extinction rates 'accelerating.' Media Release. www.iphes.net/news/Media-Release-Global-Assessment
- Wallace, R. L. (2016, Winter). Changing the human-wildlife dynamic. Interview. *Ursinus College Magazine*. <https://www.ursinus.edu/live/news/2000-changing-the-human-wildlife-dynamic/uc-magazine/templates/news.php>.
- Wallace-Wells, D. (2019). *The uninhabitable earth: Life after warming*. New York: Duggan Books.
- Wenk, D. (2017, December 18). Wenk: Tell people what they need to hear, not what they want to hear. *Mountain Journal*. <https://mountainjournal.org/wildlife-in-yellowstone-at-a-crossroad>
- White, P. J. (2016). *Can't chew the leather anymore: Musing on wildlife conservation in Yellowstone from a broken-down biologist*. Mammoth, WY: The Yellowstone Center for Resources, Yellowstone National Park.
- Wilkinson, T. (2016, May 11). Y'stone golden age may soon be history. *Jackson Hole Nes & Guide*, 5.
- Wilkinson, T. (2017, October 5). The big picture: Thinking about Greater Yellowstone's elephants in the room. *Mountain Journal*. <https://mountainjournal.org/blind-spots-killing-greater-yellowstone>
- Wilkinson, T. (2019, March 6). Can greater Yellowstone's wildlife survive industrial strength recreation? *Mountain Journal*. <https://mountainjournal.org/can-wildlife-survive-industrial-strength-recreation>
- World Wildlife Fund International. (2018). *Living planet report*. Washington, DC: Author.

About the Author

Susan Clark is the Joseph F. Cullman 3rd professor (adjunct) of wildlife ecology and policy sciences in the School of Forestry and Environmental Studies and fellow in the Institution for Social and Policy Studies, Yale University. She has worked in the Greater Yellowstone Ecosystem for more than 50 years. She received her Ph.D. from the University of Wisconsin-Madison in 1973. Her interests include conservation biology, organization theory and management, natural resources policy, leadership, governance (ordinary and constitutive), interdisciplinary problem solving, education, and the policy sciences. In general terms, she seeks to contribute to the integration of

morals, science (in the broadest sense), and policy. Her moral value is that of an individual in a democratic society in which she has grown up and to which she is loyal: the dignity of the human personality in a free society. Science as she refers to it here is the free use of reason on human experience, a broader definition than most people consider. Science is useful to generate insight, improve judgment, and upgrade decision-making. She invites whatever collaboration there can be on the part of all people who are benevolently disposed toward her aims or toward her. Her skill is analysis and creative, disciplined criticism. She seeks to be an integrator of knowledge and action, thereby helping herself and others solve problems practically. In meeting problems, she seeks to elicit and give effect to all the rationality those individuals and groups are capable of giving at the time on whatever issue that is before them. The trend of our time is for integration and collaboration in problem solving. The approach that she uses is the “interdisciplinary approach” or the “policy sciences.” Representative activities include improving large carnivore conservation in Rocky Mountains of United States and Canada and an analysis of large-scale management and policy. In 2007, she and colleagues wrote *Other Voices, Other Ways, Better Practices: Bridging Local and Professional Environmental Knowledge*. She has written about 400 papers, monographs, and a dozen books. She has received numerous awards, including the Outstanding Contribution Award from the U.S. Fish and Wildlife Service, Presidential Award from the Chicago Zoological Society, Denver Zoological Foundation Conservation Award, and Best Teacher award from Yale students.

Discussion Questions

1. What is the Greater Yellowstone Ecosystem?
2. What is our current relationship with nature and wildlife in that ecosystem and overall worldwide?
3. What should our coexistence relationship and policy be, and why?

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“Adansonia madagascariensis – Baobab – Tree of Life Blossom”
2020

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New 'Corpus Juris' from Artificial Intelligence

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Abstract¹

This article explores the legal issues arising out of surging disruptive technologies.

After a general overview of disruptive technologies at large, this article addresses one specific technology – “3D printing” – and conducts a survey of how two sets of legal rules – Product Liability and Intellectual Property – may be suitable to apply to this selected technology. The article then extends scrutiny to attempted personalization of Artificial Intelligence and attribution of liabilities to “learning machines.”

The central point of this article is to survey possible transnational effects of disruptive technologies on normative systems, like creation of customary commercial law and automation of justice.

Based upon the findings of this survey, the article lays down a proposed template chart of implementing international regulation by survey of impacts and analyses how duties of prevention, due diligence, and cooperation may be imposed upon the nations.

Finally, the article addresses possible impacts, domestic and international, over the institutions of the judiciary, the legal profession, and professional ethics.

The conclusion is that international regulation of disruptive technologies is possible if the established fundamental principles of law are passed on to new generations by the old ones who have knowledge and proficiency of the very technologies that threaten the established principles.

¹ Editor’s Note: The format for this article is in accordance with standards for legal writing, not for the American Psychological Association.

Keywords: Artificial Intelligence, 3D-Printing, International Lawmaking/Harm Prevention, Judiciary, Legal Profession, Future perspectives

Preamble – A Silent Tide

Disruptive technologies are pervading the world, invisible, unnoticed, and the areas affected by the changes are almost countless.

The revolution tends to be noticed mostly regionally, but its risks are global and virtually all areas of society are affected.

Platform Services collect and use data through Internet connections to provide underlying services.² Computer platforms use links with other connected devices to facilitate transactions or services between individuals.³ Emerging new technologies are so differentiated and pervade so many areas of today's living that they do not even have a single common name.

The term 'Internet of Things' (IoT) is commonly used,⁴ but it covers only limited areas of application, mostly products pertaining to the concept of 'smart home,' smart appliances and the like.

The IoT name is also used for 'wearables,'⁵ connected cars (Uber, Lyft), Smart Cities,⁶ but also in important social areas like healthcare,⁷ and under this label, the term 'shared economy' also is used.⁸

IoT comprises areas of social life and business that are global, spreading its application and effects to international levels, beyond local.

In the food distribution and retail, for example, WalMart has implemented blockchain platforms for verifying and tracking the produce sold by them from the place of origin to the WalMart retail store.⁹

Another term frequently used as blanket cover of disruptive technologies is Artificial Intelligence (AI), but again this term properly relates to machines capable of 'self-learning' and 'self-determining.' AI, however, is one technology with the most important possible consequences for the world at large.

² Andrew M. Danas, 'Disruptive Technologies and business models: Emerging regulatory issues from the sharing economy' (2018) 10/3 *Journal of Multidisciplinary Research*, 45.

³ Ibid.

⁴ The credit for inventing the name is shared by Kevin Ashton and Prof. Doctor Henning Kagermann. See, among many others <<https://iot-analytics.com/internet-of-things-definition/>> <<https://dataflog.com/read/where-does-the-internet-of-things-come-from/524>> and <<https://www.linkedin.com/pulse/digital-transformation-manufacturing-industries-prof-dr-gaddam/>> accessed 4 May 2020.

⁵ Devices installed with sensors and software, which collect data and information about the users, for later extracting insights about the user.

⁶ Monitoring pollution, traffic congestion, shortage of energy supplies, finding free available parking slots, detecting meter tampering issues, general malfunctions and any installation issues in the electricity system, and the like.

⁷ The collected data helping personalized analysis of individuals' health and providing tailored strategies to combat illnesses.

⁸ Danas (n. 3).

⁹ See <www.forbes.com/sites/rogeraitken/2017/12/14/ibm-walmart-launching-blockchain-food-safety-alliance-in-china-with-fortune-500s-jd-com/#6831b3797d9c> accessed 4 May 2020.

Part 1 – Beyond IoT

Beyond their mundane applications, disruptive technologies have made developments of major magnitude and with transboundary reach.

The first coming to mind is *cryptocurrencies*, best known by their most famous names *Bitcoin* and *Ethereum*.

Being established privately and in most cases without the coverage of conventional money (legal tenders), *cryptocurrencies* invite intuitive thoughts of Government regulation, a theme too wide for this article.

A next best example is *ship automation*. Marine engineering, coupled with computer sciences and Artificial Intelligence, has reached advanced stages of designing and building ships capable to navigate and maneuver without a crew and even without remote control by humans.

One essay can be singled out for the complete summation of the technical and legal issues at large. It was co-authored by Daniel Ben-Ari, Yael Frish, Adam Lazovski, Uriel Eldan, & Dov Greenbaum under the title '*Danger, Will Robinson? Artificial Intelligence in the Practice of Law: An Analysis and Proof of Concept Experiment*.'¹⁰

After describing the disruptive technologies at large and Artificial Intelligence in particular, the Authors address the legal implications, beginning from 'market failure' (legal systems grown overloaded), 'market size' also overgrown, more funding for legal startups and tech resources, more data and search engines available, etcetera.

The authors then predict consequences on Judges and 'Physical Courts,' due to algorithms making possible automation of justice, and on lawyers, who may even disappear in some areas of the law. Law Schools would also change for the changed nature of the legal services and of the technical resources required of the lawyers, such as discovery, research, compliance, document generation and analysis. In short, all legal analysis would change.

In conclusion open questions remain on what will happen, but with an optimistic note: that the disruptive technologies will help overcome the overloads of justice and help funding a more efficient and creative legal profession.

Yet, the opening line of the essay is a quote from Elon Musk: 'Artificial intelligence is our biggest existential threat.'¹¹

Other studies and tests are so advanced that international organizations are now paying close attention.

The IMO (International Maritime Organization) is leading with a serious 'scoping exercise' on Maritime Autonomous Surface Ships (MASS).¹²

¹⁰ Daniel Ben-Ari and others, 'Danger, Will Robinson? Artificial Intelligence in the Practice of Law: An Analysis and Proof of Concept Experiment' (2017) 23/2 Richmond Journal of Law & Technology <http://jolt.richmond.edu/index.php/volume23_issue2_greenbaum/> accessed 30 April 2020.

¹¹ <www.bbc.com/news/technology/30290540> accessed on 4 May 2020.

¹² <www.imo.org/en/MediaCentre/HotTopics/Pages/Autonomous-shipping.aspx> accessed 4 May 2020.

The IMO study is expected to bring adjustments and changes to many international regulations¹³ and Conventions.¹⁴ The United Nations itself has paid attention. See the notes of the Economic Commission for Europe, Inland Transport Committee¹⁵ and the 2018 edition of UNCTAD's Review of Maritime Transport.¹⁶

Our essay attempts a deeper look at how the existing legal systems, laws, regulations and principles are affected, now and in future, by the ever-mounting tide of technologies, with particular attention to effects on international laws and legal systems.

We will check how the existing laws and systems may still apply to the new technologies and their revolutions, or whether new laws and systems are needed if the existing systems become inefficient or even disappear.

Before dealing with issues of a wider scope, it will help taking a close look at one specific technology that has a highest potential of disruption at local and international level.

We have selected, for a deeper treatment, the 3D Remote Printing. After a reality check of this technology we will flow into issues of transnational regulation of similar technologies and finally to the ultimate goal of this article: a possible new world of law and legal profession.

Part 2 – 3D Remote Print

2 – What is and How it Works

3D printing allows to create three dimensional solid objects of virtually any shape from a digital model (the computer aided design model). Successive layers of material are laid down and this is why it is also called additive manufacturing.¹⁷

The precision, repeatability, and material range have increased to the point to predict that by the end of the decade, additive manufacturing 'will no longer be considered a 'niche' technology, but a viable tool in the broader mix of manufacturing technologies'¹⁸

¹³ E.g. Safety and maritime security (SOLAS 1974); collision regulations (COLREG 1972); loading and stability (Load Lines 1966); training of seafarers and fishers (STCW 1978, STCW-F 1995); search and rescue (SAR 1979); tonnage measurement (Tonnage Convention 1969); safe containers (CSC 1972); and special trade passenger ship instruments (SPACE STP 1973, STP 1971).

¹⁴ Among the major ones are Convention on Oil Pollution (OPRC 1990), Carriage Of Hazardous Substances (HNS 1996), and Salvage (1989).

¹⁵ Economic Commission for Europe, 'Autonomous shipping in inland navigation: Concepts, opportunities and challenges' paper ECE/TRANS/SC.3/WP.3/2018/1 <www.unece.org/fileadmin/DAM/trans/doc/2018/sc3wp3/ECE-TRANS-SC3-WP3-2018-01e.pdf> accessed 5 May 2020.

¹⁶ United Nation Conference on Trade and Development, 'Digitalization set to revolutionize shipping – new United Nations report' (Press Release 3 October 2018) <<https://unctad.org/en/pages/PressRelease.aspx?OriginalVersionID=472>> accessed 5 May 2020.

¹⁷ Sabrie Soloman, *Additive Manufacturing -3D Printing & Design: - The 4th Industrial Revolution* (Khanna Book Publishing) 258, 259.

¹⁸ Michael Petch, *100 3D Printing experts predicts the future of 3D printing in 2030*, <<https://3dprintingindustry.com/news/100-3d-printing-experts-predict-the-future-of-3d-printing-in-2030-167623/>> accessed 5 May 2020.

The uses of '3D printing' are almost countless. From little toys to ladies' garments, from shoes to cakes and food, '3D printing' surprises us with production of large ship's propellers, even houses and artificial components of underwater reefs.

The famous Italian pasta producer Barilla developed its own proprietary pasta printer.¹⁹ Chanel created 3D Printed Mascara Brush and 3D Printed Watches.²⁰

Nike started a 3D shoe prototype called Vaporfly with the help of the 2018 Berlin Marathon winner,²¹ soon followed by Adidas and New Balance.²²

In China, the construction company HuaShang Tengda printed by 3D a house that can withstand an 8.0 earthquake,²³ while in Mexico World's First Community of 3D Printed Homes is set to House Mexico's Poorest Families.²⁴

3D printing is not even shy of science fiction. In 2018 NASA was running a 3D printing competition to design 3D homes on Mars.²⁵

However, small 3D printers are available for anyone to take home, being, to say the least, affordable to all at an ALDI UK price of only Lst. 249.99.²⁶

One beneficial utilization of 3D Printing is in the medical field.

A blog of the Federal Drug Administration titled '3D Printing of Medical Devices' informs that 'Medical devices produced by 3D printing include orthopedic and cranial implants, surgical instruments, dental restorations such as crowns, and external prosthetics,'²⁷ proudly showing a picture of models of brain, blood vessel and surgical guide made by remote printing.

FDA is now carefully following 3D Printing for its benefic uses, including its contribution to help in the shortcomings of COVID 19 supplies,²⁸ and is checking the possible serious side effects. Both issues may span across the borders.

First, the medical object printed remotely may have defects that would cause injures or damages. An article on the University of Illinois Journal of Law, Technology and Policy warns about possible product liability from medical products and organs printed remotely.²⁹

¹⁹ <<https://3dprint.com/196681/barilla-3d-print-pasta-winners/>> accessed 4 May 2020.

²⁰ <https://all3dp.com/chanel-creates-first-3d-printed-mascara-brush-better-application/?utm_source=push> <<https://www.wired.co.uk/article/chanel-boy-friend-skeleton-calibre-3-watch>> accessed 4 May 2020.

²¹ <<https://3dprintingindustry.com/news/nikes-3d-printed-elite-shoe-preparing-for-a-wider-release-142527>> accessed 4 May 2020.

²² <<https://digital.hbs.edu/platform-rctom/submission/the-future-at-nike-3d-printing-customized-shoes-at-home>> accessed 4 May 2020.

²³ <<https://inhabitat.com/3d-printed-house-in-china-can-withstand-an-8-0-earthquake>> accessed 4 May 2020.

²⁴ <www.goodnewsnetwork.org/worlds-first-community-of-3d-printed-houses> accessed 4 May 2020.

²⁵ <<https://qz.com/1352914/nasa-is-running-a-3d-printing-competition-to-design-homes-on-mars>> accessed 4 May 2020.

²⁶ <www.aldi.co.uk/3d-printer> accessed 4 May 2020.

²⁷ <www.fda.gov/medical-devices/products-and-medical-procedures/3d-printing-medical-devices> accessed 4 May 2020.

²⁸ See the blog of BBC 'www.bbc.com/news/health-52201696' accessed 4 May 2020.

²⁹ Michael H. Parka, 'For a new Heart, just click print: the effect on medical and products liability from 3D printed organs' (2015) University of Illinois Journal of Law, Technology and Policy, 187.

A more recent article in the *Journal of the Kansas Bar Association* goes further, asking the question '3D Printing and Why Lawyers Should Care.'³⁰

After a preamble on the background of the technology, the Author explains how 3D Printing may produce product liabilities and require regulation in the areas of Aviation, Automotive, Health Care, Construction, Fashion and others.

Our article chooses to focus on two areas of the effects of 3D Printing that are most relevant to the theme of the publication: Product Liability and Intellectual Property.

Before moving into that, there have been two situations that actually happened, worth a short passing note: the remote fabrication of firearms and of a suicide device.

2.1 – 3D-Made Firearms

A 25-year-old Texas libertarian fabricated by means of 3D printing a plastic gun that fired with precision and without counter-effects. He then made blueprints of his CAD design and posted it on his Website.

The transborder implications are evident.

The U.S. Department of State ordered him to take the blueprints out, under a little-known statute, the International Trade in Arms Regulation (ITAR). The libertarian resisted in court on the grounds of violation of both his Second and First amendment constitutional rights, and eventually the Department offered a quiet settlement.³¹

Subsequently, a non-profit organization that designed 3D print firearms and an Association that promoted the right to keep and bear arms, brought action against the U.S. Department of State asking for an injunction against enforcement of a pre-publication approval requirement for technical data published on the Internet. For reasons of balance of harm and public interest, the Court denied the injunction.³²

2.2 – 3D Euthanasia

Then, on another note, an Australian Euthanasia advocate, Philip Nitschke, created a suicide machine that is 3D-printed, allowing users to administer their own death.

The machine is 3D fabricated in the shape of a coffin (even disposable at job done). By pressing a button inside the pod, liquid nitrogen flows into the machine, causing death in minutes, previous painless anesthesia caused by the gas itself, an unregulated substance that can be easily purchased.

The expected legal consequences, especially at international level, are easy to imagine.

The CAD blueprint may be disseminated online from one country where euthanasia is legal and received and used for distant production in a country where it is illegal.

How could printing and using this device be prevented and who could possibly be prosecuted and where? Could there be creation of transboundary crime, like anti-trust actions committed abroad having consequences in the jurisdiction?

³⁰ Bob Lambrechts, '3D Printing and why lawyers should care' (2019) 88/2 *Journal of the Kansas Bar Association* 28.

³¹ <www.wired.com/story/a-landmark-legal-shift-opens-pandoras-box-for-diy-guns> accessed 4 May 2020.

³² *Defence Distributed v. United States Department of State* 838 F.3d 451, (5th Cir. 2015).

We are now ready to address the two classic areas of the law mentioned before: Product Liability and Intellectual Property.

2.3 – Product Liability Issues of 3D Printing

3D printing could have relevant transnational issues in the areas of product liability, as its other name, ‘remote manufacturing,’ readily suggests.

There is no uniform legal treatment at domestic level of nations, let alone international.

In fact, product liability laws vary from nation to nation, although, by way of great generalization, the liabilities for manufacturing and distributing defective products, or dangerous products, or both, are broadly found worldwide.³³

For instance, in the EU, the Product Liability Directive (85/374/EEC)³⁴ introduced a uniform system of no-fault liability for producer of defective products marketed in the European Economic Area and the General Product Safety Directive (2001/95/EC)³⁵ extended the scope of liability to agricultural and fishery products.

In the United States, there is no Federal law of product liability, but on October 13, 1979, the U.S. Department of Commerce, through its Task Force on Product Liability and Accident Compensation, issued the Model Uniform Product Liability Act,³⁶ adopted in some but not all States.³⁷

The different laws of the nations show significant differences in the ways the tort of product liability is treated, for example in determining who is responsible for product liability, whether liability is strict or by negligence, and how the factors that determine liability are defined and applied.

2.3.1 – Factor 1: Who is the Producer?

Under the UK Consumer Protection Act,³⁸ the ‘producer’ of the product is the party primary responsible for product liability.

A party may be considered a ‘producer’ by placing a trademark label on its product, thus holding itself as the manufacturer (the so-called ‘own brander’). Likewise, a distributor may also be deemed a ‘producer’ failing to disclose the identity of the party from which the product was acquired.³⁹

³³ See e.g. Israel (March 1980, based on an early proposed draft of the Directive), Brazil (September 1990), Peru (November 1991), Australia (July 1992), Russia (February 1992), Switzerland (December 1992), Argentina (October 1993), Japan (June 1994), Taiwan (June 1994), Malaysia (August 1999), South Korea (January 2000), Thailand (December 2007), and South Africa (April 2009).

³⁴ Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L 210.

³⁵ Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety [2001] OJ L 11.

³⁶ 44 Federal Regulation 62,714 (1979).

³⁷ David Frisch, *Lawrence’s Anderson on the UCC West* (3rd ed Thomson Reuter 2013) vol 3 § 2-313:29 mentioning Arkansas, Kansas, Louisiana, North Carolina, Connecticut and Ohio.

³⁸ Consumer Protection Act, 1987.

³⁹ Rod Freeman, Sarah-Jane Dobson and Carol Roberts, ‘Product liability in the United Kingdom (25 October 2018) <www.lexology.com/library/detail.aspx?q=43717760-3790-4979-8002-352c5f84b5> accessed 4 May 2020.

The importer of a product manufactured outside the European Union (and arguably at the end of Brexit, manufactured outside the United Kingdom) will also be considered a producer.⁴⁰

In the United States, the *Restatement (Second) of Torts* is followed, attaching liability to any person ‘engaged in the business of selling products for use or consumption’⁴¹ The *Restatement (Third) of Torts: Products Liability* established the ‘casual’ or ‘occasional seller’ exception, stating that strict liability ‘applies only to manufacturers and other commercial sellers and distributors who are engaged in the business of selling or otherwise distributing the type of product that harmed the plaintiff.’⁴²

The Internet blog by Herbert Smith Freehills supplies more practical list of possible parties responsible.⁴³

- the manufacturer or supplier of the 3D printer;
- the manufacturer or supplier of the 3D printing material (essentially, the ‘ink’ in the printer);
- the printer’s owner;
- the person who designed or sold the original object upon which a 3D printing design is based;
- the person who created or shared the CAD blueprint of the object;
- the person who created the object using the printer; and
- the person who sold the 3D-printed object.

It is plainly evident that any or all of these prospective responsible parties may be located in different nations in different parts of the world, with the consequence that it will be difficult to pinpoint one or all the possible parties liable, assuming that a valid jurisdiction can be established. It would be just as difficult, if not more, to determine where any of the possible parties have ‘minimum contacts’ for personal jurisdiction.

2.3.2 – Factor 2: What Is a ‘Product’ for the Purposes of Product Liability for Defective Object?

Under U.S. law, namely *the Restatement (Third) of Torts, Products Liability*, a ‘product’ is considered to be a piece of tangible personal property, distributed commercially, expected to reach, as it ultimately does, the user or consumer without substantial change.⁴⁴

The CAD rendering for the object may arguably be considered a product, although no definite case law is available. There are precedents, however, holding that the computer code ‘such as a 3D printing CAD blueprint’ is not a product.⁴⁵

⁴⁰ Legal 500, ‘United Kingdom: Product Liability’ <www.legal500.com/guides/chapter/united-kingdom-product-liability/> accessed 4 May 2020.

⁴¹ Joseph G. Falcone, Laura Paliani, Tony Dempster, Emerging legal issues in 3D printing and product liability, Law (2016) <www.lawjournalnewsletters.com/sites/lawjournalnewsletters/2016/09/01/emerging-legal-issues-in-3d-printing-and-product-liability-2/?slreturn=20180715070801> accessed 5 May 2020.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid. citing to *United States v. Aleynikov* 676 F.3d 71, 76 (2d Cir. 2012).

On the same line, other cases decided that a CAD blueprint for '3D printing' may be considered not a tangible piece of property, but rather intangible content.⁴⁶

Finally, the CAD rendering may undergo substantial change when converted into an object, thus it may not be considered a 'product' itself.⁴⁷

In the UK, the term 'product' is limited to tangible movable items, thus it would not include CAD renderings for 3D-printed objects.⁴⁸

2.3.3 – The Effects

Under the existing general rules of product liability, '3D printing' may have significant effects on claims for manufacturing defect, design defects, warning of defects, all in turn requiring new judicial and legislative approaches to address issues.

However, a number of issues remain not clear, as highlighted on 7 May 2018 by the European Commission.⁴⁹

2.4 – 3D Printing and IP

Unlawful uses of 3D printing are also able to infringe the (already existing) intellectual property rights, such as copyright, design, patents, and trademarks.

To copy an object protected by IP rights without permission amounts to an intellectual property rights infringement.

The method by which the infringing item is produced does not affect the applicability of IP law. Trademarks are infringed if an item is 3D printed with a third party's trademark exactly as it would have been hand-manufactured and the same applies to patent or designs or copyrighted item.

As long as the 3D printed item is produced for commercial purposes, the IP protection can be granted by the existing law. Similarly, the 3D printing process need a CAD (computer-aided design) file which, as long as IT contains something artistic or creative, is able to be protected by copyright.

However, in a number of jurisdictions, IP protection is subject to private and non-commercial and fair use exception with the consequence that if items are being produced for non-commercial purposes by individuals for personal use, they may not be considered infringing.

Will the users be removed from any form of liability? This issue seems relevant. The availability of 3D printers to private consumers or hobbyists has the potential to proliferate infringements 'away from control in the future.'⁵⁰

⁴⁶ Ibid. citing to *Winter v. G.P. Putnam's Sons* 938 F.2d 1033, 1036 (9th Cir. 1991), and *Sanders v. Acclaim Entm't Inc.*, 188 F. Supp. 2d 1264, 1277-79 (D. Colo. 2002).

⁴⁷ Ibid., citing to *K-Mart Corp. v. Midcon Realty Grp. Of Conn., Ltd.*, 489 F. Supp. 813 (D. Conn. 1980) (architect's design not subject to product liability law).

⁴⁸ Ibid.

⁴⁹ European Commission, 'Evaluation of Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products' (Commission Staff Working document 7.5.2018) <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018SC0157&from=EN>> accessed 4 May 2020.

⁵⁰ John Hornick, '3D printing away from control' (2014) *Intellectual Property Magazine* 26.

Will the existing IP rights laws be able to grant protection of **private use** of 3D printers or their protection will become *de facto* ineffective?

Just like the product liability issues, the answer seems not to be so straightforward and certain once it comes to private use of technology. A ‘reworking of the law’⁵¹ seems to be a good start but the adoption and implementation of new business models could be a more efficient ‘way forward.’⁵²

2.4.1 – IP and Artificial Intelligence

In past decades, copyright in computer-generated works was less controversial because machines were just considered tools such as brushes or pens.

The framework now has changed drastically because AI is able to produce articles, novels, music, photos, video games, artworks, generate 3D printing, and develop inventions without the involvement of any human person.

Algorithms allow machines to (i) learn from inputs found on-line or received by the programmers, (ii) analyze and elaborate inputs, and (iii) generate completely new works by neural network processes like the human ones.

In 2017, Yale Professor Shlomit Yanisky-Ravid published an intriguing essay on IP protection of works generated by machines,⁵³ with reference to a computer project launched one year before by ING and the J. Walter Thompson agency in Amsterdam, along with Microsoft, TU Delft, Mauritshuis, and Rembrandthuis.⁵⁴

The 2016 project was composed of a team of data scientists, engineers, and art historians who analyzed Rembrandt’s painting techniques, style and subject matter, and transferred that knowledge to a software program that could generate a new work using the latest in 3D printing technology.

The ‘Next Rembrandt’ was a computer-generated 3-D printed painting consisting of more than 148 million pixels and created using deep learning algorithms and facial recognition techniques, based on 168,263 painting fragments from Rembrandt’s works.⁵⁵

Noting that the established principle of authorship is seriously challenged by artificial intelligence, the essay of Professor Yanisky-Ravid wondered whether we may continue to consider machines as mere tools when *de facto* they are becoming creators.

The essay proposed ‘the adoption of a new model of accountability for works generated by AI systems: the AI Work Made for Hire (WMFH) model, which views the AI system as a creative employee or independent contractor of the user. Under this proposed model, ownership, control, and

⁵¹ Dinusha Mendis, ‘The Clone Wars’: Episode 1 - the Rise of 3D Printing and Its Implications for Intellectual Property Law - Learning Lessons from the Past? [2013] *European Intellectual Property Review* 155, 168.

⁵² Dinusha Mendis, ‘The Clone Wars’: Episode 1 - the Rise of 3D Printing and Its Implications for Intellectual Property Law - Learning Lessons from the Past? [2013] *European Intellectual Property Review* 155, 168.

⁵³ Shlomit Yanisky Ravid, ‘Generating Rembrandt: Artificial Intelligence, copyright, and accountability in the 3A Era – The human like authors are already here – A new model’ [2017] *Michigan State Law Review* 659, available <https://ir.lawnet.fordham.edu/faculty_scholarship/956> accessed 30 April 2020.

⁵⁴ Steve Schlackman, ‘Who holds the Copyright in AI Created Art’ <<https://alj.artpreneur.com/the-next-rembrandt-who-holds-the-copyright-in-computer-generated-art/>> accessed 4 May 2020.

⁵⁵ <<https://thenextrembrandt.pr.co/130454-the-next-rembrandt>> accessed 27 April 2020.

responsibility would be imposed on the humans or legal entities that use AI systems and enjoy its benefits.⁵⁶

The essay does not stop there but adds a notation of wider scope:

‘Since AI systems are copyrightable algorithms, the Article reflects on the accountability for AI systems in other legal regimes, such as tort or criminal law and in various industries using these systems.’⁵⁷

But beyond the proposals of Professor Yanisky-Ravid, the question remains who is the legitimate owner of the copyright in this new piece? The software programmers? Nobody? Answers could be many as the legislative IP panorama is territorially fragmented.

To just give some examples, in the UK the author of computer-generated literary, dramatic, musical or artistic work shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.⁵⁸ Conclusions could however be different in other countries.

The U.S. copyright law only protects ‘the fruits of intellectual labor’ that ‘are founded in the creative powers of the mind.’⁵⁹ The U.S. Copyright office refuses ‘to register a claim if it determines that a human being did not create the work.’⁶⁰ This attitude is based on the rationale that works produced by machine or mere mechanical process ‘operate randomly or automatically without any creative input or intervention from a human author.’⁶¹

It is self-evident that there are no straightforward solutions.

If ownership is given to the AI programmer as a reward and incentive for her/his effort and investment, why the programmer would be rewarded for the final output created by the AI? Furthermore, if copyright is not attributed to the programmer, which could be his or her incentive?

According to the resolution adopted by the International Association for the Protection of Intellectual Property (AIPPI) during the World Congress held in London in September 2019, AI generated works should be eligible for protection by copyright only where there is human intervention in the creation of the work and if other protection requirements are met.⁶² However, it has been concluded that ‘AI generated works may be eligible for protection through a related right, even where there is no human intervention.’⁶³

Doubts could be raised also in the patent field. Inventorship has always been recognized to humans and not to machines. But who is inventor of a ‘patent protected invention’ created by AI intelligence? In 2019, a great challenge arose to the above widely recognized position when the

⁵⁶ Yanisky Ravid (n 53).

⁵⁷ Ibid.

⁵⁸ Section 9 (3), Copyright, Designs and Patents Act.

⁵⁹ *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.* 499 US 340 (1991).

⁶⁰ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884) quoted by U.S. Copyright Office, *Compendium of US Copyright Office Practices*, ‘Copyrightable Authorship: What Can Be Registered’ (2014) <www.copyright.gov/comp3/cover.html> accessed 30 April 2020.

⁶¹ Ryan E. Long, ‘Artificial Intelligence Art- Who owns the copyright’ (2018) The Center for internet and society <<https://cyberlaw.stanford.edu/blog/2018/05/artificial-intelligence-art-who-owns-copyright-0>> 23 April 2020.

⁶² Jan Bernd Nordemann, ‘AIPPI: No copyright protection for AI works without human input, but related rights remain’ (2019 Kluwer Copyright Blog) <http://copyrightblog.kluweriplaw.com/2019/11/21/aippi-no-copyright-protection-for-ai-works-without-human-input-but-related-rights-remain/?doing_wp_cron=1588233876.4784700870513916015625> accessed on 30 April 2020.

⁶³ Ibid.

Artificial Inventor Project team submitted two patent applications at EU and UK level⁶⁴ indicating as inventor DABUS (a type of AI connectionist).⁶⁵

Both the European Patent Office (EPO)⁶⁶ and the UK IP Office⁶⁷ rejected these applications on the grounds that the inventor designated in the application had to be a human being and not a machine.⁶⁸ The international standard of inventorship continues to be associated to natural persons. AI systems or machines cannot have rights that come from being an inventor such as the right to be mentioned as the inventor or to be designated as an inventor in the patent application.⁶⁹

Part 3 – On to Personhood

3.1 – Machine Learning

Granting IP protection to art created not by a human but by a machine is a small step to a giant leap: the ‘machine learning,’ or ‘self-learning/self-determining’ machines or, as many like to call them, robots or robotic machines.

It is difficult to give a simple and precise description of Machine Learning, because, in spite of the intuitive assessment, the concept is made of many expanded components: the machine has the capacity of doing research, observing the world external to it by using sensors, storing the data so acquired, then of processing them and reaching conclusions by itself, ultimately of taking actions autonomously based upon the experience so acquired.

In fact, even the Government Authorities that got involved with the issue had a hard time finding and using a clear-cut definition.

A Study of October 2016 made by the EU Directorate-General For Internal Policies proposed the following definition:

‘a robot, in the broad sense, should fulfil several conditions, and consist of a physical machine which is aware of and able to act upon its surroundings and which can make decisions. Only some robots may also have the ability to learn, communicate and interact, and may even have a degree of autonomy.’⁷⁰

⁶⁴ Patent applications EP 18 275 163 and EP 18 275 174 filed with the EPO and GB1816909.4 and GB1818161.0 filed with the UK Patent Office.

⁶⁵ Ryan Abbot, ‘The Artificial Inventor Project’ (2019) 6.
<www.wipo.int/wipo_magazine/en/2019/06/article_0002.html
> accessed 22 April 2020.

⁶⁶ EPO decision of 27 January 2020 on EP 18 275 163 and EPO decision of 27 January 2020 on EP 18 275 174.

⁶⁷ UK Intellectual Property Office, Decision No. BL O/741/19 issued 04 December 2019.

⁶⁸ www.epo.org/news-issues/news/2020/20200128.html

⁶⁹ EPO Decision of 27 January 2020 on EP 18 275 163 and EPO Decision of 27 January 2020 on EP 18 275 174.

⁷⁰ EU Directorate-General For Internal Policies, ‘European Civil Law Rules in Robotics’ (2016 Study for the Jury Committee) <[www.europarl.europa.eu/RegData/etudes/STUD/2016/571379/IPOL_STU\(2016\)571379_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/571379/IPOL_STU(2016)571379_EN.pdf)> accessed 5 May 2020.

3.2 – From Machine to Person

The Study⁷¹ is worth even more attention for it added scrutiny of the recommendations of the JURI Committee on civil law rules on Artificial Intelligence.⁷²

On 31 May 2016, the JURI group delivered a draft report that included a motion for a European Parliament resolution, which was to create a new category of individuals, specifically for robots: electronic persons.

The Study takes a negative stance to the Resolution, explaining the reasons given.

Paragraph 31(f) called upon the European Commission to explore the legal consequences of ‘creating a specific legal status for robots, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons with specific rights and obligations, including that of making good any damage they may cause [to third parties], and applying electronic personality to cases where robots make smart autonomous decisions or otherwise interact with third parties.’⁷³

The Study concluded that the idea of autonomous robots having a legal personality should be disregarded, for the idea is as unhelpful as it is inappropriate,⁷⁴ giving well-argued reasons:

‘Doing so risks not only assigning rights and obligations to what is just a tool, but also tearing down the boundaries between man and machine, blurring the lines between the living and the inert, the human and the inhuman.

Assigning person status to a non-living, non-conscious entity would therefore be an error since, in the end, humankind would likely be demoted to the rank of a machine.

Robots should serve humanity and should have no other role, except in the realms of science-fiction.’⁷⁵

Among mounting criticism,⁷⁶ the Resolution was never adopted, and the idea appears to be dead. A recent Study by the Panel for the Future of Science and Technology of the European Parliamentary Research Service issued in March 2020 at Section 2.2.4, reports without negative comments the mounting criticism.⁷⁷

3.3 – Of Machines and Torts

⁷¹ Ibid.

⁷² Ibid. Referring to Initiative – Article 46 of the EP’s Rules of procedure. The JURI Committee had set up a working group already in 2015 for drawing ‘European’ civil law rules and that, on 31 May 2016 the group delivered a draft report.

⁷³ EU Directorate-General for Internal Policies, ‘European Civil Law Rules in Robotics’ (2016 Study for the Jury Committee) <[www.europarl.europa.eu/RegData/etudes/STUD/2016/571379/IPOL_STU\(2016\)571379_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/571379/IPOL_STU(2016)571379_EN.pdf)> accessed 5 May 2020.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Janosch Delcker, ‘Europe Divided over Robot ‘Personhood’ (2018) Politico <www.politico.eu/article/europe-divided-over-robot-ai-artificial-intelligence-personhood/> and ‘Open Letter to the European Commission on the Artificial Intelligence and Robotics’ <<http://www.robotics-openletter.eu/>> accessed 6 May 2020.

⁷⁷ European Parliamentary Research Service, ‘The ethics of artificial intelligence: Issues and initiatives.’ (2020) <[www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU\(2020\)634452_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU(2020)634452_EN.pdf)> accessed 6 May 2020.

Regardless of issues of ‘status,’ there is a general consensus that the law should be adjusted to address issues of ‘civil liability’ of intelligent machines.

What if an ‘intelligent machine’ commits ‘insider trading,’ a tort that carries also a criminal sanction, not only in the United States?

Scholarly ideas have focused, correctly, on how could damages may be recovered and from whom. In fact, the major problems with ‘personalization’ of machines is that machines do not have money in bank accounts (may we add sarcastically, not yet?) that tort victims may attach for enforcement.

Many scholarly exercises focus on attaching compulsory insurance to Artificial Intelligence machines, the most common idea being some form of mandatory insurance for strict liability.

But also, on contractual liability, intelligent machines may be able to engage in negotiations and to conclude contracts, once again autonomously. This means that the machines may also be able to set contractual rules, and eventually standard contractual rules.

The conclusion, at this point, is that machines, either by themselves or as instruments of a ‘human agent,’ have the capacity and propensity to affect the law of torts, contract and of rulemaking at international level, beyond local effects. Indeed, it may be difficult to determine what is ‘local’ for an ‘agent’ that is electronic and remotely controlled by a ‘human agent.’

Part 4 – The Transboundary Effect

Having established that AI may have legal consequences across the borders of nations, questions arise whether there are legal remedies and where they could be enforced.

The study of transnational law unfolds in two disciplines: the *jurisdiction to prescribe* and the *jurisdiction to adjudicate*, the first dealing with the substantive law that should apply to human actions and disputes, the second with the way the disputes are resolved. We may call the first ‘substantive law’ and the second ‘procedural law.’

Both disciplines rest on a common basic predicate: the locality of sovereignty.

International law is the will of the Sovereign to waive its powers delegating them to a wider system by international Conventions, which become the supreme law of the land. The result is the creation of:

- worldwide substantive laws, like the ones on Civil Aviation, Salvage at Sea and the like, and of
 - procedural laws, like the New York Convention on Arbitration.
- Artificial Intelligence has the propensity to affect both.

By causing changes in the domestic legal systems, Artificial Intelligence may change the way the international community will perceive common values in need of protection, by-passing the principle of locality. The analysis that follows is therefore applicable both ay domestic and international level.

The international as well as the domestic communities may control the negative effects of Artificial Intelligence by implementing those four components of any kind of lawmaking:

prevention, impact, due diligence, and cooperation.

4.1 – Prevention

The International Law Commission of the United Nation submitted to the General Assembly Draft Articles on Prevention of Transboundary Harm from Hazardous Activities.⁷⁸

The Articles apply to ‘activities not prohibited by international law which involve a risk of causing significant transboundary harm through their physical consequences’⁷⁹ and their scope is to make it mandatory for ‘the State of origin to take all appropriate measures to prevent significant transboundary harm or at any event to minimize the risk thereof.’⁸⁰

The rules are mostly seen as instruments for environmental protection, but in fact the rules apply to any transboundary harm of a ‘physical’ nature.

The Commentary to Article 1 clarifies that the significant trans-boundary harm must have been caused by the ‘physical consequences’ of activities,’ and adds that ‘It was agreed by the Commission that [...], it should exclude transboundary harm which may be caused by State policies in monetary, socio- economic or similar fields.’⁸¹

Therefore, physical harm caused transnationally by 3D Printing seems to fall squarely within the provision of the Articles, except that, again, it may be difficult to establish which is the ‘State of Origin’ of the act of 3D Printing, therefore, what State is responsible for taking preventive measures.

Also, as seen before, there may be acts, not only by 3D Printing, but that may also cause ‘significant transboundary damages’ that are not physical, such as violation of Intellectual Property, Antitrust laws and so on.

It seems to be desirable that International Institutions work at expanding the scope of the Articles, to include all significant harms not connected with physical actions.

4.2 – Impact

‘Transboundary Consequences’ are a synonym of ‘Impact.’ The scope of the “United Nations Articles” is to prevent impact, a word that deserves attention beyond the intuitive meaning.

A good reference for assessing the meaning and scope of the word ‘impact’ is the *International Association for Impact Assessment* (IAIA), organized in 1980 to bring together researchers, practitioners, and users of various types of impact assessment from all parts of the world, with more than 1,700 members from 120 nations, representing many disciplines and professions.⁸²

In the words of the IAIA, ‘impact assessment, simply defined, is the process of identifying the future consequences of a current or proposed action, aimed at generating informed decision-making regarding policies, programs, plans and projects, and advocates its expanded use for the betterment of society and the environment.’⁸³

⁷⁸ International Law Commission of the United Nations ‘Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries’ (2001) 2 Yearbook of the International Law Commission, <https://legal.un.org/ilc/texts/instruments/english/commentaries/9_7_2001.pdf> accessed 6 May 2020 (‘ILC Articles’).

⁷⁹ ILC Articles, art. 1.

⁸⁰ ILC Articles, art. 3.

⁸¹ ILC Articles, commentary (16).

⁸² <www.iaia.org/about.php> accessed 5 May 2020.

⁸³ Ibid.

The IAIA reaches beyond the environmental issues that have been the most common use of the assessment rules. The IAIA principles and practice are indeed valuable for any transboundary event, like the ones we are dealing with in this article.

The Introduction to the IAIA's Strategic Plan 2019-2020 - 2021 confirms that AIA's purpose is 'the betterment of society through the encouragement of improved policymaking processes concerning the analysis of the future consequences of present decisions.'⁸⁴

Along with this mission statement, we find a remarkable essay by Professor Tseming Yang titled '*The Emergence of the Environmental Impact Assessment Duty as a Global Legal Norm and General Principle of Law.*'⁸⁵

Professor Yang took inspiration from a global survey of legal principles by Rudolf Schlesinger published in the *American Journal of International Law* half a century ago. The objective of the survey was the identification of a 'common core' of legal norms among the family of nations, in order to produce global principles of law.

Regretting that its ultimate goal was never realized, in spite of the initial enthusiasm, the essay describes the process, methodology and results of the survey, that is, the Environmental Impact norm having been so widely adopted to become a General Principles of Law for international environmental law.

The essay then draws the conclusion that the EIA should be a model for the creation of 'general principles of law recognized by civilized nations,'⁸⁶ beyond the limited area of environmental law.

From the mission of the IAIA and the inspired conclusions of Professor Tang we can make a progress in our analysis of the legal consequences of Artificial Intelligence at large.

The impact of Artificial Intelligence should be measured by addressing the effects of all AI actions as violations of 'general principles of law recognized by civilized nations,'⁸⁷ and not just as physical and visible events.

Naturally these general principles must exist and be individuated, or otherwise must be made afresh, which takes us to the next step, the question whether there are norms appropriate and efficient for issues of Artificial Intelligence, and more specifically of international application.

⁸⁴ <www.iaia.org/downloads/Strategicplansummary.pdf> accessed 5 May 2020.

⁸⁵ (2019) 70 *Hastings Law Journal* 525 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3202454> accessed 5 May 2020.

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*

Part 5 – Of Normative Systems

The answer is a qualified yes. At least at domestic levels, many nations and multinational entities like the European Union, have rules on IoT and related technologies.⁸⁸

Not much is found at international level, at least not a full body of laws specific to IoT and Artificial Intelligence.

In fact, an essay has noted that ‘cyberspace incidents are not controlled by effective and specific treaty-based rules because states and nonstate actors tend not to regulate their behavior to take advantage of such situations.’⁸⁹

Another essay⁹⁰ has added a very interesting ontology point of view: the American Uniform Commercial Code (UCC) is a normative system that may be used as successful model for regulating issues of e-commerce.

‘The UCC’ reads the essay ‘was derived from the Law Merchant and Lex Mercatoria, codifications of actual practice rather than normative codes drafted by inexperienced legislators.’⁹¹

5.1 – A New Customary Legal System?

It follows that all disruptive technologies used in the world of trade and commerce are natural candidates for the creation of a cyber customary law. In fact, international regulation of disruptive technologies could be achieved in only two ways: either International Conventions or creation of rules of custom.

The world of trade and commerce has an impeccable track record for creating customary rules.

The INCOTERMS and the Uniform Custom and Practice for Documentary Credit (UCP 600) are among the most successful stories of customary law. Unlike International Conventions, not even statutory law, the international community is using the collections of rules that the ICC made and has kept them ever since virtually unchallenged.

The pedigree of customary law goes back to the *Lex Mercatoria* of the Middle Ages, one more reason for being optimistic about the possibility that Artificial Intelligence at large will, in time, brew its own customary rules, that the ICC may once again celebrate.

Lex Mercatoria actually seems to have grown out of its own ‘tribunals,’ the famous ‘piepowder’ adjudicators,⁹² and this is a reminder that the Artificial Intelligence would have the capacity of programming mechanisms of dispute resolution that would operate automatically, like the very machines self-learning and self-deciding that will be sitting in the metaphorical virtual benches set up by the cyber society.

⁸⁸ See e.g. (2018) 3/3 *Journal of Multidisciplinary Research*, Special Issue: The Internet of Things.

⁸⁹ Akiko Takano, ‘Due Diligence Obligations and Transboundary Environmental Harm: Cybersecurity Applications’ (2018) *MDPI Open Access Journal* <www.mdpi.com/2075-471X/7/4/36/pdf> accessed 5 May 2020 citing Andrea Zimmermann ‘International law and Cyber Space’ (2014) *European Society of International Law (ESIL) Reflection 3*: 1–6.

⁹⁰ John Bagby, Tracy Mullen, ‘The Legal ontology of sales law application to ecommerce’ (2007) 15 *Artificial Intelligence and Law* 155 <<https://doi.org/10.1007/s10506-007-9027-3>> accessed 30 April 2020.

⁹¹ *Ibid.*, 1.

⁹² See, e.g., Charles Gross, ‘The Court of Piepoweder’ (1906) 20/2 *The Quarterly Journal of Economics* 231-249.

This scenario, not impossible, would by-pass the traditional legal system, creating a ‘Jus Mercatorium’ administered by a new ‘Curia Mercatoria,’ independent from constitutionally empowered institutions.

Does it mean that Artificial Intelligence may eventually phase out not only the substantive law but also the constitutionally empowered Judiciary?

5.2 – A Contagion: Automatic Institutional Justice

Once again, this showing of aggressive expansion of Artificial Intelligence may tempt a cautionary positive answer that few examples, not well known, may support.

In August 2018, the Government of the European Republic of Estonia engaged its Chief Data Officer, Mr. Ott Velsberg, to create artificial intelligence and machine learning services for Estonia’s 1.3 million citizens.

Among the many projects of Mr. Velsberg, there is one to create a ‘robot judge’ to adjudicate small claims disputes under €7,000.00 for the purpose of clearing backlog of cases. The project is still in its infancy, a pilot test focusing on contract disputes. The parties would upload briefs, documents, and information, and the ‘robo-judge’ will issue its decision automatically, without human intervention. However, an appeal to a ‘human’ Judge is still secured.⁹³

If you are still skeptic or sarcastic, you may want to know that the same thing is happening in China.

Visit a Canada blog entitled ‘*Robot justice: China’s use of Internet courts,*’ reading:

In December 2019, China has announced that millions of legal cases are now being decided by ‘Internet courts’ that do not require citizens to appear in court. The ‘smart court’ includes non-human judges, powered by artificial intelligence (AI) and allows participants to register their cases online and resolve their matters via a digital court hearing.

The Chinese Internet courts handle a variety of disputes, which include intellectual property, e-commerce, financial disputes related to online conduct, loans acquired or performed online, domain name issues, property and civil rights cases involving the Internet, product liability arising from online purchases and certain administrative disputes.

In Beijing, the average duration of a case is 40 days; the average dispositive hearing lasts 37 minutes; almost 80 per cent of the litigants before the Chinese Internet courts are individuals, and 20 per cent corporate entities; and 98 per cent of the rulings have been accepted without appeal.⁹⁴

⁹³ <www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so> accessed 6 May 2020.

⁹⁴ Tara Vasdani, ‘Robot Justice: China’s use of Internet Courts’ <www.thelawyersdaily.ca/articles/17741/robot-justice-china-s-use-of-internet-courts> accessed 4 May 2020.

5.3 – And Even Automatic Justice May Not Be Enough

In 2007, Professor Thomas Schultz published an essay, at one time ingenious and provocative. The proffered idea was that the Internet may promote ‘private spheres of normativity’ that the Author considers as private legal systems more so than the Lex Mercatoria.

The idea was not imagination but came out of critical analysis of the ‘user policies’ of E-Bay that include a self-sufficient dispute resolution mechanism. The Author saw this mechanism as a ‘normative system,’ looking at least likely to a law.⁹⁵

Professor Mark Verstraete, in an essay disagreeing on smart contract as alternative to traditional contract law,⁹⁶ and Professor Barak D. Richman, disapproving calling the private adjudication systems as law, instead of litigation cost economizers⁹⁷ as we should call them, supplied a bland criticism of Professor Schultz’s idea.

Nevertheless, private adjudication systems keep existing and blooming.

Part 6 – International Regulation

6.1 – Mission Impossible?

The eluding nature of the everchanging disruptive technologies seems to suggest a qualified positive answer.

Each technology needs to receive regulation specific to the needs it is used for and the persons, assets and interests that may be affected by the specific technology. For example, intellectual property should receive specific IP rules, Anti-trust likewise, and so on.

The problem with international regulation is that the realities of the various Nations may and do vary in terms of society, economy, traditions, cultures, public policies and so on, to the extent that any attempt of establishing ‘uniform’ regulations may be, to say the least, difficult.

In particular, the level of technical advancement and adaptation to advanced technologies varies from nation to nation. We find a negative note about how ‘*AI can stop the shifting of manufacturing to the developing economies by eliminating their ‘cheap labor’ comparative advantage. Where such shifting of manufacturing still occurs due to other cost savings, investment strategies, or business goals, foreign investors’ use of AI in the Third World may ‘ghetto’ the native work force while fortifying the host country’s ‘privileged few’ - those who are chosen to share in the knowledge base of foreign technology producers.*’⁹⁸

The essay goes on adding a touching literary note:

⁹⁵ Thomas Schultz, ‘Private Legal Systems: what cyberspace might teach legal theorists’ (2007) 10 YALE Journal Law & Technology 151.

⁹⁶ Mark Verstraete, ‘The Stakes of smart contracts’ (2019) 50 Loyola University Chicago Law Journal 743 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3178393> accessed 5 May 2020.

⁹⁷ Barak D Richman, ‘Norms and Law: Putting the Horse Before the Cart’ (2012) 62 Duke Law Journal available at <<https://ssrn.com/abstract=2189490>> accessed on 12 April 2020.

⁹⁸ Wendy N. Duong, ‘Ghetto’ing workers with hi-tech: exploring regulatory solutions for the effect of artificial intelligence on ‘third world’ foreign direct investment’ (2008) 22 Temple International & Comparative Law Journal 63.

*The poet-philosopher Paul Valery has exclaimed that the human race now lives under a 'regime of surprise' Meaning that '[t]omorrow's society will consist solely of the extremely rich and robots [. . .]. The rest of us will all have perished in the dark alleys of the global economy!'*⁹⁹

*Her gloomy vision is exactly the reason why any regulatory solutions for the future must be based on the individual and humanism as the foundation of law, just as Paul Valery has stated: 'The value of the person remains ultimately the essential foundation of every material creation and organization.'*¹⁰⁰

Here is where our positive answer to the 'mission impossible' question becomes 'qualified.'

6.2 – A 'Uniform Qualified' Regulation Is Possible

A mission of finding a worldwide uniform regulation may be possible by aiming at the proper target: 'The value of the person,' and aiming at the proper solution: 'the individual and humanism as the foundation of law,' by implementing a transnational system of assessment of transboundary impacts from which to forge international consensus.

6.2.1 – By Assessing General Principles of Law

The United Nations are already working at this goal, though not with a specific reference to Artificial Intelligence.

At the Seventy-first Session of the International Law Commission held at Geneva, 29 April–7 June and 8 July–9 August 2019, the Special Rapporteur, Marcelo Vázquez-Bermúdez, presented the 'First Report on General Principles of Law.'¹⁰¹

The Commission was and is studying how to identify 'General Principles of Law' as 'recognized' by 'civilized nations' as already found in part by the International Court of Justice, in National Legal Systems and in the international legal system.

This road seems to be in good hands and may be expanded into investigation of how the new world of disruptive technologies should be monitored and adjusted for compliance with general principles of law.

6.2.2 – By Establishing Positive Obligations for the Nations

The essay of Akiko Takano mentioned above¹⁰² supplies an in-depth commentary on the responsibilities of Nations to prevent transboundary harm caused by nonstate actors, drawing from the obligations of due diligence with regard to transboundary harm in international water law and their possible application to cybersecurity.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Marcelo Vázquez-Bermúdez, United Nations Report of the International Law Commission A/CN.4/732<<https://legal.un.org/docs/?symbol=A/CN.4/732>>accessed 5 May 2020.

¹⁰² Takano (n 89).

The essay reminds us that, together with the sovereign powers on the nations' own resources, responsibilities come along with duties to ensure that activities within the nations' jurisdiction do not cause harm to the environment of other Nations.

6.2.3 – Due Diligence

Compliance of this 'do not harm' principle is an obligation of due diligence, whose features may be difficult to identify, yet recognized authoritatively in the works of the International Court of Justice,¹⁰³ the Stockholm and Rio Declarations and the Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities.¹⁰⁴

Professor Takano goes on to say that the Nations must establish domestic and transboundary procedures in order to meet their due diligence obligations, and that this scheme is applicable also in the cyberspace. In fact, recent National practices found customary international law as being applicable, in principle, to cyberspace with some adaptation to the specific characteristics of cyberspace, still lacking a major intergovernmental governance structure.

The essay then draws the conclusion that the Nations may be imposed duties of 'cyber-diligence' to take preventive action by sharing information and security and analyzes how these obligations may be extended to non-state actors and whether in that case the nations may have an 'absolute obligation.'¹⁰⁵

6.2.4 – Cooperation

Takano's essay concludes that there is on an obligation of cooperation among Nations, beyond that of due diligence, cyberspace being global thus requiring a global regime.¹⁰⁶

Another recent valuable essay by Professor Neil Craik, published by Cambridge University Press for the British Institute of International and Comparative Law, takes over the theme of international cooperation.¹⁰⁷

The Author correctly argues that the duty of cooperation cannot be ignored because the duty of prevention alone, without notice and consultation, would be undermined,¹⁰⁸ and supplies ample material on procedures of cooperation, like timing of notifications,¹⁰⁹ duty to give reasons¹¹⁰ and remedies for breach.¹¹¹

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Neil Craik, 'The duty to cooperate in the customary law of environmental impact assessment' (2019) British Institute for British Institute of International and Comparative Law <www.cambridge.org/core/services/aop-cambridgecore/content/view/AB1F146A96DB6DAE9B38DE669E20ADCE/S0020589319000459a.pdf/duty_to_cooperate_in_the_customary_law_of_environmental_impact_assessment.pdf> accessed 5 May 2020.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Ibid.

6.2.5 – Conclusions on International Regulations

Linking these essays with the idea proposed by Professor Yang and the global survey of legal principles published by Rudolf Schlesinger,¹¹² we have identification of ‘common core’ global principles of law and a system to protect and enforce them, all applied to Artificial Intelligence.

Most of all, the 2001 Draft Articles on Prevention of Transboundary Harm from Hazardous Activities¹¹³ keeps being a landmark of reference for any attempt to draw international regulatory schemes of Artificial Intelligence.

The draft has specific mention of the duties of due diligence,¹¹⁴ cooperation,¹¹⁵ emergency procedures,¹¹⁶ all dealt with abundance of explanation.

Part 7 – Artificial Intelligence and the Legal Systems

No matter how many different types of legal systems exist around the world, Artificial Intelligence appears to be able to penetrate them all.

If we may classify the systems in two large generic groups, we have democratic and non-democratic systems. The damages and disruption of Artificial Intelligence being used by or taking control of non-democratic systems are terrifying and way beyond the scope of this article.

Let us examine what could happen to democratic systems fallen under the influence of Artificial Intelligence.

7.1 – The Judiciary

Paradigmatically, democratic legal systems are based on the balance of three ‘powers’: Legislative, Executive and Judiciary. All three make law their own way and Artificial Intelligence would interfere with each power in a different way. To stay within the stream of this article, we address the Judicial power only.

The reason is that the Judicial power is the one with the ultimate power to say what the Law is. The famous American Supreme Court case *Marbury v Madison* is the quintessence of any democratic legal system.¹¹⁷

It follows that the Artificial Intelligence may become the ultimate maker of the law by grabbing control of the Supreme Court, if not of the whole Judiciary.

Some even saw a positive side of this hypothesis. An essay by Michelle Hildebrandt¹¹⁸ asked the question whether artificial legal intelligence may challenge the conceptual foundations of the law, and found that instead it may benefit legal certainty, predictability and openness.

¹¹² Yang (n 85).

¹¹³ ICLILC Articles (n. 78).

¹¹⁴ *Ibid.*, General Commentary, Article 2; Article 3, Commentary 7, 8, 9; 10, 11 and 13.

¹¹⁵ *Ibid.*, Article 4, Commentary.

¹¹⁶ *Ibid.*, Article 16 and 17.

¹¹⁷ *Marbury v. Madison*, 5 U.S. (1 Cranch) 137 (1803). The US Supreme Court unanimously stated that the power to say what the law is belongs to the Supreme Court.

¹¹⁸ Mireille Hildebrandt, ‘Law As Computation in the Era of Artificial Legal Intelligence. Speaking Law to the Power of Statistics’ (2017) <<https://ssrn.com/abstract=2983045>> accessed 5 May 2020.

The Author even argues that it would be Artificial Intelligence to be enriched by its attempt to understand and model the legal reasoning. The ‘endeavors’ of Artificial Intelligence will reciprocally engage and enrich the Law, supplying a better understanding of the modes of reasoning and the underlying assumption. The Law would benefit from practical computational tools and models.

The Author concludes that the relationship between AI and law is one of true synergy, the shared specialty of AI and law adding value to both.¹¹⁹

However, this wishful thinking does not account for the emerging attempts of automatic justice, as seen in Estonia and China,¹²⁰ that raise questions about the future of a ‘human’ judiciary.

We find useful food for thought in a recent essay published by Conrad Flaczyk in the Canadian Journal of Law and Technology, dealing with counterbalancing the undesirable risks introduced by new technologies like blockchain, artificial intelligence, and smart contracts with the use of ‘equitable’ legal tools.¹²¹

Equity may be what will save the ‘human Judiciary’ from being hijacked by Artificial Intelligence.

Citing to Gary Watt,¹²² the essay shares the basic truth: ‘*Without equity, the law’s story becomes all rules and no justice*’ and, adding a quote from Justice Dickson, agrees that ‘*The great advantage of ancient principles of equity is their flexibility: the judiciary is thus able to shape these malleable principles so as to accommodate the changing needs and mores of society, in order to achieve justice.*’

A concise and simplistic definition of equity is the power of Judges to decide outside the boundaries of the written and inflexible law, in other words going around or even against the written law, delivering a judicial product that is ‘irrational.’

Artificial Intelligence machines, no matter how self-learning and deciding, are programmed to give ‘rational’ decisions.

Hopefully there will always be a human judge delivering equity, even if using the help of powerful research tools.

Conversely, will there always be a ‘human’ lawyer?

7.2 – The Legal Profession

Legendary Professor Richard Susskind published a book titled ‘*The End of Lawyers?*’¹²³ The book is a partial sequel to the one that made his legal theories famous, the ‘*Future of Law*’ in 1996. It was 2008, and the subtitle of ‘*The End of Lawyers?*’ was: ‘*Rethinking the Nature of Legal Services.*’

Susskind argued that in the future many legal services may be provided through new systems of technological innovations and that the demand for legal advice delivered by law firms will diminish considerably, and as a result, there will be fewer ‘traditional’ lawyers.

¹¹⁹ Edwina L. Risslanda, ‘Artificial Intelligence and Law: Stepping Stones to a model of legal reasoning’ (1990) 99 Yale Law Journal <<https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=7293&context=ylij>> accessed 5 May 2020.

¹²⁰ See (n. 93) and (n. 94).

¹²¹ Conrad Flaczyk, ‘Technology, the changing nature of disputes, and the future of equitable principles in Canadian contract law,’ (2017) Canadian Journal of Law and Technology 144.

¹²² Gary Watt, *Equity Stirring: the story of justice beyond law* (Hart 2009) 45.

¹²³ Richard Susskind, *The End of Lawyers?* (Oxford University Press 2008).

A commentary took this as a prediction of an end of lawyers. 'If consumers can find what they need to know on the Internet, will they still need lawyers? Perhaps lawyers will have to assume an entirely new role.'¹²⁴

More precisely, Susskind predicted that 'Law will be gradually transformed from an advisory service to an information service as lawyers package their conventional work product in electronic form.'¹²⁵

A new role, not death, of the legal profession was actually what Susskind meant, and made it clear with a sequel in 2013 and second edition 2017: '*Tomorrow's Lawyers*' with subtitle '*An Introduction to Your Future*.'¹²⁶

Chapter 12, titled '*The Future of Law Revisited*,' confirms that his findings of 1996 had largely come true in the 20-year span projected in the book. The coming of technology and internet actually challenged and changed the nature of legal service and the nature of legal process.

Repeating the guess game of 2008 in 2013 and 2017, Susskind predicted that in years to come, '*conventional lawyers will not be as prominent in society as today.*'

Clients will not be inclined to pay expensive legal advisers for work that can be undertaken by less expert people, supported by smart systems and standard processes.

This prediction does not signal the end of lawyers entirely, but it does point to a need for fewer traditional lawyers.¹²⁷

The take of our article is that the survival of the legal profession may be assured by the same factors that assure survival of the Judiciary.

Lawyers, like the 'equity' Judges, do often go around the written law, not to breach it but to find a creative way for alternative credible arguments in aid of the client's case. Rarely, it may be a breach of the written law, occasionally, a circumvention by means of genuine convincing arguments.

In fact, when the case is decided and there is a winner and a loser, does it mean that the loser's lawyer was a liar? The truth is that in a healthy process there is no true and false, but only best and worst arguments.

This creative function of lawyers is precisely why they exist. Susskind may be right foreseeing that the clients of the future will seek a different kind of assistance, yet any client will always need from Lawyers the support of being on their side.

If Judges were allowed to do that then lawyers will no longer be needed, but impartiality is the foundation of the Judiciary; therefore, human judges and human lawyers will keep existing together, regardless of Artificial Intelligence's invasion.

At least, until robots remain capable of only rational decisions. The flexibility and compassion of human Judges and the circumvention by ingenious creativity of human lawyers are in the DNA of human nature.

Changes, there will be. Susskind's conclusion of his second edition was the following:

In years to come, I predict that conventional lawyers will not be as prominent in society as today. Clients will not be inclined to pay expensive legal advisers for

¹²⁴ Stephen P. Gallagher, Leonad, E. Sienko, Jr., 'Yesterday's strategies rarely answer tomorrow's problems' (2004) 76/7 New York State Bar Association Journal 40.

¹²⁵ Ibid.

¹²⁶ Richard Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (2nd Ed Oxford University Press 2017).

¹²⁷ Ibid., 153.

work that can be undertaken by less expert people, supported by smart systems and standard pro-cesses.

This prediction does not signal the end of lawyers entirely, but it does point to a need for fewer traditional lawyers.

At the same time, when systems and processes play a more central role in law, this opens up the possibility of important new forms of legal services for those lawyers who are sufficiently flexible, open-minded, and entrepreneurial to adapt to changing market conditions.’¹²⁸

7.3 – Ethics

New forms of legal services, new jobs, but there will be more.

In the first place, the rules of Ethics. The American Bar Association Model Rules are representative of what is expected of Lawyers all over the world.¹²⁹

Rule 11 (Competence) reads: ‘A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation.’

The day when most disputes will require solution of issues loaded with disruptive technologies, how could a Lawyer fulfill the Competence duty without being proficient in, and above, the disruptive technologies?

Rule 12 on Diligence reinforces Rule 11. Same for Rule 14 (Communications) and 16 (Confidentiality).

Even more deeply come the issues of Bar Admission, and even before admission come the issues of preparation, that is the Law Schools. If the duty of Competence requires expertise of disruptive technologies, the Bar Exam may one day include a session on technologies.

In order to pass this part of the Bar, the candidate should have received education not just in the technologies but especially in the legal applications of the technologies.

It follows that if Susskind is right (and we agree that he is), we will have not just new tomorrow’s lawyers but also new tomorrow’s Law Schools and Bar Associations.

The final conclusion of Susskind is an inspired call to a new mission for the future lawyers:

‘I implore you, tomorrow’s lawyers, to take up the mantle of the benevolent custodians; to be honest with yourselves and with society about those areas of legal endeavor that genuinely must be preserved for lawyers in the interests of clients. But you should work in the law in the interests of society and not of lawyers. It is not the purpose of law to keep lawyers in business.

The purpose of lawyers is to help to support society’s needs of the law.’¹³⁰

Conclusions

Artificial Intelligence presents indeed many threats, but also supplies a huge amount of help and benefits.

¹²⁸ Ibid.

¹²⁹ American Bar Association, Text of the Model Rules of Professional Conduct <www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/model_rules_of_professional_conduct_table_of_contents/> accessed 5 May 2020.

¹³⁰ Susskind, (n 127) 195.

The immense capacities to search, store, and process data can be invaluable for professionals, researchers, and lawmakers alike.

Self-learning machines are already capable of collecting data from all jurisdictions of the world, none excluded, recording legal decisions and, by using self-learning, classifying them for values pursued, in the backdrop of ethnical, social, and cultural systems, able to identify common policies and social attitudes.

Intelligent machines also are capable to understand data in any language, and to translate them from any language to another. The legal community of the whole world would then have equal availability of a worldwide ‘survey’ of the law, understood in any language, and instantly comparative.

If lawmakers (intending International Organizations, scholars, judiciaries, and professionals) learn how to profit from this windfall of benefits, a new law may dawn on the global world.

In the early years, circa 500, Roman Emperor Justinian created a new body of laws by surveying and sifting through legal decisions in order to find legal principles from real life, rather than from pre-conceived ideas and rules.

The *Corpus Juris Civilis* was born, and with the help of Artificial Intelligence this may rise again, giving the world a global ‘common law.’

For example, the path of Artificial Intelligence through the Law and vice versa appears to be well defined in the realm of commerce and trade. As it happened since the Middle Ages, the community of trade is likely to develop and safeguard its own customary rules.

A new ‘Jus Mercatorium’ will bloom out of practice and observation of usages, making a body of substantive law: ‘Lex Mercatoria,’ together with its own mechanisms of dispute resolution: ‘Curia Mercatoria.’¹³¹

Certain laws specific to special domains, like intellectual property and anti-trust, also likely will find international solutions through International Conventions, and multinational bodies like the United Nations and the European Union will find ways to preserve and improve general principles of law and basic human rights.

But all this may be in jeopardy if the participation of the most active components in the making and maintaining the law is lost, that is: the legal profession and a ‘*Marbury v. Madison*’ judiciary.

In the end, it is only the amazing creativity and healthy passion of the lawyers that make principles and human values live and thrive, by accepting and defending selected cases for ultimate disposition by a Constitutional Judiciary that has a healthy feeling of equity in its DNA.

Of all the dangers of the invading disruptive technologies, the gravest is a change or disappearance of the legal profession and of a human judiciary equipped with equity, a thing that may happen for change of mental attitudes induced by the evolution and revolution of technologies.¹³²

On this line, private justice by arbitration should be appreciated and used for its undeniable merits but should be at the same time carefully monitored in order not to lose the accountability of

¹³¹ Possibly, almost certainly, arbitration.

¹³² Guido Boella, Leon van der Torre, ‘Attributing Mental Attitudes to Normative Systems’ Proceedings of Conference: The Second International Joint Conference on Autonomous Agents & Multiagent Systems, AAMAS 2003, July 14-18, 2003, Melbourne, Victoria, Australia <www.researchgate.net/publication/221454490_Attributing_mental_attitudes_to_normative_systems> accessed 6 May 2020.

the judiciary system. Artificial Intelligence may thrive in a dispute resolution system that is totally in the uncontrolled hands of those who should be instead monitored by society's control with the means of prevention, impact, due diligence, and cooperation.

Today's lawyers are capable of transmitting values to the lawyers of tomorrow by procuring convincing arguments or authoritative judgments upon honest protection of their clients' rights and desires and by holding themselves as 'officers of society' and not just wards of the clients.

To do this, the lawyers, as well as the international lawmakers and Judges at large, should be able to step up to the times, become proficient in the new technologies, in other words 'speak the same technological' language that will be the norm of the new generations, who may be disinclined to learn old rules, under the influx of new mental attitudes.

The mental attitudes fostered by the technologies will be as disruptive as the technologies themselves and can be controlled only using the same technologies that threaten the established values.

Successful action at home would eventually be recognized as a model by the international community, as just seen above. In fact, Artificial Intelligence itself would 'self-learn' common aspirations of humanity at large.

The job can be done. Paraphrasing the adage, old dogs will have to learn new tricks if they want the young dogs learn the old.

If that happens, we could safely say that:

The future was yesterday, and the past will be tomorrow.

About the Authors

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Discussion Questions

1. The existing legal systems attempt to deter socially detrimental conduct by punitive damages that “human actors” often do not heed. Would the Artificial Intelligence “machine learning” process draw law-abiding rules of conduct that it will use automatically? Why or why not? Then, would it be desirable to leave at least contractual and commercial decisions to Artificial Intelligence machines? Why or why not?
2. This article theorizes that Artificial Intelligence may create worldwide uniform laws. Could the same happen for the enforcement of those laws, like the formation of uniform process enforcement units, acting locally under central command of an international virtual law court? Why or why not? What about protection of due process and human rights?
3. Will the boundless resources of language translation and virtually unlimited data storage capacity of Artificial Intelligence “level the field” between solo practitioners and mega law firms, and make the use of supporting jobs (paralegals, secretaries, etc.) no more indispensable with consequences on the job markets and education systems? Why or why not?

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Notational Analysis of Fighting Tactics in Taekwondo Athletes with Three Levels of Expertise

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Abstract

This study aimed to reveal the discrepancy in fighting tactics of Taekwondo athletes with three levels of expertise. Eighty-seven Taekwondo athletes participated in this study and classified into three groups according to their sports achievement, namely elite, sub-elite, and non-elite. Notational analysis revealed their fighting tactics in Taekwondo competitions. Results from descriptive statistics and one-way between-groups ANOVA created the profile of fighting tactics and identified the discrepancy in fighting tactics between participants with different levels of expertise respectively. Elite athletes executed more attacks in the competition than sub-elite athletes and non-elite athletes. The roundhouse kick was the most frequently used technique in the competition by athletes with different levels of expertise ($M=67.26\%$, $SD=15.94$). Participants executed more than 80% of their attacks to the trunk, regardless of the levels of expertise of participants. Participants from elite athlete group obtained a significantly higher mean value than participants from the other two groups in the percentage of utilization of the hook kick and percentage of front leg attack. Elite athletes performed better in defensive skill than sub-elite athletes and non-elite athletes as they differed significantly from the other two groups in the percentage of losing score while attacking.

Keywords: Taekwondo, notational analysis, fighting tactics, expertise, elite athlete

Introduction

Taekwondo is one of the fast-growing Olympic sports in the world with 210 nations practicing the sport (World Taekwondo, 2020). To gain medals in the Olympic Games or other important international events within a highly competitive environment, coaches and researchers spent a lot of efforts in identifying those determinants of expertise in Taekwondo sparring (Arazi et al., 2016; Li et al., 2020; Khayyat et al., 2020; Norjali Wazir et al., 2019; Zandi et al., 2016). Various studies reviewed the anthropometrical, physical, psychological, perceptual, and tactical characteristics of those outstanding Taekwondo athletes, and researchers believed the search of expertise in sports was multi-dimensional (Janelle & Hillman, 2003). Elite Taekwondo athletes had a relatively lower body fat percentage and excelled in the speed and power of lower limbs as compared with those non-elite athletes (Arazi et al., 2016; Norjali Wazir et al., 2019). Elite athletes also performed better in mental toughness (Zandi et al., 2016). Other than understanding the inherited and acquired attributes of elite athletes, it is vital that understanding the tactical preferences of Taekwondo athletes in sparring competitions is equally important. As Taekwondo is an open skill sport, athletes need to adjust their movements quickly in response to the dynamic situation in competitions (Schmidt & Wrisberg, 2004). Without proper tactics, athletes would not win the competition, even if they had outstanding anthropometrical, physical, physiological, and psychological attributes. The study of fighting tactics in Taekwondo was not a new research area. Researchers conducted studies in this area by notational analysis, which was a non-invasive performance analysis technique that provided broader insight for the combat competitions with time structure and tactical demands (Casolino et al., 2012; Falco et al., 2014; Kwok, 2012; Menescardi et al., 2020; Suppiah et al., 2017).

Based on previous studies, researchers compared the discrepancies in fighting tactics between elite and non-elite athletes to provide important information for coaches to prescribe a better training program (Kwok, 2012; Suppiah et al., 2017). However, most of these studies classified participants into only two groups, namely elite athlete and non-elite athlete groups, or medalists and non-medalists groups, and neglected those athletes aligned between the two extreme groups. This group of athletes, aligning between the elite and non-elite athlete groups, is the sub-elite athlete group. According to Tsolakis and Vagenas (2010), elite athletes referred to those national representatives with medals in major international competitions while sub-elite athletes referred to those national representatives without medals in major international competitions. Athletes from both groups were skillful athletes in the sport. However, the emergence of tiny differences between the elite and sub-elite athletes in some aspects such as physiological, perceptual, and tactical performance resulted in a big difference in sports achievement at international events. To obtain a clear and holistic profile of sparring tactics, it is important to classify the athletes into appropriate groups for making sound comparisons. This study attempted to include Taekwondo athletes at different levels of expertise for finding the discrepancy of tactics between each level. Hence, results of this study could provide useful information for coaches to prescribe training programs that suit the needs of athletes at a particular level of expertise and to help them to promote successfully to the next level of sports achievement.

Methods

Participants

Eighty-seven certified Taekwondo black belt athletes (48 male athletes and 39 female athletes) from Hong Kong China and Taiwan participated in this study and allocated into 3 groups – namely, elite athlete, sub-elite athlete, and non-elite athlete – based on their sports achievement. Elite athletes referred to those national team members with a record of winning medals in major international Taekwondo events, such as the World Taekwondo Championships and the Asian Taekwondo Championships, whereas those members with experience in representing the national team in international events without gaining any medal were sub-elite athletes. Participants from Taiwan university Taekwondo teams or local Taekwondo academies in Hong Kong China without any experience in training in the national team referred to non-elite athletes. There were 29 athletes in each group.

Procedures

Notational analysis revealed the fighting tactics of participants in this study. Hughes (2005) defined notation analysis as “an objective way of recording performance so that key elements of performance can be quantified in a valid and consistent manner” (p. 1). Researchers used a hand-held video camera recording the sparring performance of participants in local competitions. They also coded the footage of each participant at each match on the record sheet based on those pre-defined performance indicators while watching the tape. Two observers participated in the coding process to ensure the reliability of the notational analysis. Observers received three sessions of training before they conducted the coding so they would be familiar with the coding process and achieved a high inter-rater reliability in the coding.

Statistical Data Analysis

Researchers used the IBM Statistics Package for Social Science 24 to analyze the collected data, with tests conducted at the .05 level of significance. Researchers conducted the descriptive statistic such as means and standard deviations to understand the fighting tactics of athletes with different levels of expertise. Researchers also conducted one-way between groups Analysis of Variances (ANOVA) to determine the differences in fighting tactics of athletes among expertise levels.

Results

Researchers reviewed and coded participants’ fighting performance in local competitions by notational analysis. To understand the fighting patterns and preferences of participants, researchers collected information about fighting tactics such as total number of attacks, site of attack, and prevalence of technique in this study.

Total Number of Attacks

The duration of Taekwondo competition is two minutes for three rounds for each match.

Based on the finding in this study, elite athletes executed the highest number of attacks in each match ($M=41.53$, $SD=9.66$), compared to participants in the sub-elite athlete group ($M=34.44$, $SD=8.20$) and the non-elite athlete group ($M=36.03$, $SD=12.99$). A statistically significant mean difference revealed at $p<.05$ level for the three groups: $F(2, 84) = 3.67$, $p=.00$ with effect size, calculated using eta squared was .08. According to the result of the Tukey HSD test, the elite athlete group differed significantly from the sub-elite group, while the non-elite athlete group did not differ significantly from the other two groups.

Number of Types of Attack

In addition to the total number of attacks, participants in the elite athlete group also obtained the highest number of types of attack in the competition, compared to the other two groups. On average, elite athletes executed 6.55 types of attack in one match ($SD=1.44$), while the one for the sub-elite athlete group and the non-elite athlete group are 5.59 ($SD=1.73$) and 4.52 ($SD=1.54$), respectively. No statistically significant difference revealed between the elite and the sub-elite group in the number of types of attack in the competition. However, the Tukey HSD test indicated that the non-elite athlete group differed significantly from elite athlete group and the sub-elite athlete group in the number of types of attack in the match. A lower mean value resulted in the non-elite athlete group, compared to the other two groups, which indicated that participants from the non-elite athlete group tended to use fewer attacking techniques in the competition, compared to elite and sub-elite athletes.

Site of Attack

According to the scoring system of Taekwondo competition (World Taekwondo, 2019), athletes received a higher score in a successful attack to the head than in an attack to the trunk. One-way between-groups ANOVA indicated no impact of level of expertise on the site of attack. Descriptive statistics of site of attack of athlete with different levels of expertise are in Table 1.

Table 1

Descriptive Statistics of Site of Attack of the Subjects with Level of Expertise (N=87)

Attributes	Elite (n=29)			Sub-elite (n=29)			Non-elite (n=29)		
	Min	Max	<i>M</i> (<i>SD</i>)	Min	Max	<i>M</i> (<i>SD</i>)	Min	Max	<i>M</i> (<i>SD</i>)
Attack to trunk (%)	69.64	100.00	84.23 (7.83)	69.23	100.00	83.65 (8.84)	64.00	100.00	89.00 (9.13)
Attack to head (%)	0	30.36	15.94 (7.85)	0	30.77	16.31 (8.79)	0	36.00	10.96 (9.24)

Prevalence of Technique

For the prevalence of technique, the roundhouse kick was the most frequently used technique in the competition by athletes across all levels of expertise ($M=67.26\%$, $SD=15.94$). The side kick came second in the most frequently used technique in the competition for the elite athlete group and third for both the sub-elite and non-elite athlete group. The percentage of utilizing side

kick in the competition for elite athlete, sub-elite athlete, and non-elite athlete group are 13.30 ($SD=12.70$), 8.65 ($SD=10.02$) and 5.77 ($SD=10.23$), respectively. One-way between-groups ANOVA revealed a statistically significant mean difference in the use of the side kick during the match when comparing the three groups. The Tukey HSD test indicated the elite athlete group was significantly different from the non-elite athlete group in the use of the side kick in the competition, while the sub-elite group did not differ from the other two groups. Participants from the elite athlete group also differed significantly from the other two groups in the use of the hook kick. Participants in the elite athlete group used the hook kick in the match more frequently than in the other two groups. On average, the percentage of participants in the elite athlete group using the hook kick in the match is .87 ($SD=1.38$), while the one for the sub-elite athlete group and the non-elite athlete group are .11($SD=.43$) and .21($SD=.68$), respectively.

Mode of Attack

For the mode of attack, participants in the three groups tended to adopt an aggressive mode of attack ($M=67.40\%$, $SD=14.76$) more frequently than a passive mode of attack ($M=32.6\%$, $SD=14.87$). One-way between groups ANOVA revealed no statistically significant mean difference in the mode of attack when comparing the three groups. Participants in the elite athlete group tended to execute direct attack and attack by front leg more frequently than in the other two groups (Table 2). Tukey HSD test revealed that participants in the elite group were significantly different from those in the sub-elite athlete and the non-elite athlete group in the percentage of using front leg to execute the attack and the percentage of using rear leg to execute the attack. Besides, participants in the elite athlete group were significantly different from those in the non-elite athlete group in the percentage of direct and indirect attack. Research revealed no statistically significant mean difference between the elite athlete and the sub-elite athlete groups, and the sub-elite athlete and the non-elite athlete groups on the use of direct and indirect attack.

Table 2

Descriptive Statistics of Mode of Attack of the Subjects with Level of Expertise (N=87)

Attributes	Elite (n=29)			Sub-elite (n=29)			Non-elite (n=29)		
	Min	Max	<i>M</i> (<i>SD</i>)	Min	Max	<i>M</i> (<i>SD</i>)	Min	Max	<i>M</i> (<i>SD</i>)
Attack by front leg (%)	16.09	92.50	52.65 (18.77)	8.33	73.91	37.41 (15.88)	.00	68.09	31.38 (18.80)
Attack by rear leg (%)	7.50	83.91	47.45 (18.97)	26.09	91.67	62.54 (15.90)	29.79	100.00	68.63 (19.00)
Direct attack (%)	54.43	97.62	78.66 (11.19)	63.16	92.31	77.53 (7.99)	25.58	100.00	69.63 (18.32)
Indirect attack (%)	2.38	44.30	20.89 (11.32)	7.69	36.84	22.43 (7.91)	.00	74.42	31.07 (18.99)

Scoring Profile

This study revealed the scoring rate of athletes with different levels of expertise. The scoring rate of participants referred to the percentage of successful scoring of the attack the

participants executed, and the calculation divided the number of attacks that scored successfully by the total number of attacks the participants executed. The scoring rate of participants in the sub-elite athlete group ($M=12.51$, $SD=8.77$) was the highest among the three groups. The scoring rate of participants in the elite athlete group ($M=7.89$, $SD=6.04$) ranked second, while the non-elite athlete group ($M=7.32$, $SD=6.37$) came third.

Although the participants in elite athlete group did not achieve the highest scoring rate among the three groups, they performed the lowest percentage in losing score when executing the attack ($M=1.41$, $SD=2.69$). The calculation of the percentage of losing score when executing the attack was dividing the number of attacks that also had loss of point due to receiving the counterattack of the opponent by the total number of attacks that scored successfully. Participants in the sub-elite athlete group obtained a higher percentage in losing score when executing the attack ($M=7.52$, $SD=17.33$) than did those in the non-elite athlete group ($M=5.17$, $SD=5.97$).

Discussion

This study aimed to find out the discrepancy in fighting tactics of Taekwondo athletes with different levels of expertise. Results of the study could reveal the fighting characteristics of athletes at each specific level of expertise. Besides, by understanding the gap between athletes at different levels of expertise in utilizing the tactics, coaches could prescribe more specific and appropriate training programs and tactics for athletes. Hence, athletes could enhance their sport performance and achieve better competition results.

Number of Types of Attacks being Used

Taekwondo was famous for the great variety in kicking techniques. Although athletes might not use all techniques in a single match, they would include several techniques in their tactics, which enabled them to enhance the variation in fighting tactics. According to Kwok (2012), medalists differed significantly from non-medalists in the number of types of attack they used in Taekwondo competition. The researchers in the present study obtained a similar result as Kwok (2012). The researchers did not find any statistically significant mean difference in the number of types of attack being used in matches between the elite and the sub-elite athlete groups. However, the non-elite athlete group differed significantly from both the elite and the sub-elite athlete groups. Athletes from the elite and the sub-elite athlete groups tended to use more different types of techniques in the competition than did those from the non-elite athlete group. As Taekwondo is an open skill sport, athletes had to perform in an unpredictable environment, which required them to react quickly to different stimuli. Having diversified tactics with different techniques being used would be an advantage in the competition as it helped to slow down the opponent's reaction time (Kwok, 2012). According to Hick's law (Hick, 1952), the reaction time of athletes would increase when the variations of stimulus increased in the match. Delaying the opponents' reaction time allowed athlete to have room for better preparation for the next attack or defense. Hence, instead of focusing on one or two kicking techniques that participants used frequently in Taekwondo competition, coaches should include different types of kicking techniques in the training, so athletes would utilize these techniques interchangeably and increase the diversity of fighting

tactics.

Site of Attack

To increase the excitement of Taekwondo sparring competition, the competition rules of valid point have changed since 2003. Athletes would receive a higher score when they executed those legal techniques attacking the head as compared with those attacking the trunk (World Taekwondo 2019). Although successful high section attack would result in a higher score, athletes executed around 80% of the attack to the trunk. Kwok (2012) revealed similar results in her study investigating the prevalence of site of attack of Taekwondo athletes. According to Kwok (2012), athletes with different levels of expertise did not differ significantly in the prevalence of site of attack.

According to Pedzich et al. (2006), a longer execution time associated with the height of attack. It took a longer time for executing an attack to the head than to the trunk. Kim et al. (2010) suggested that execution time of attack was an important factor of successful scoring in Taekwondo competition. The longer the time for executing the attack, the lower the chance for gaining the score as the opponent would have more time for blocking or dodging the attack. Although a successful high section attack awarded a higher score, the perceived longer execution time lowered the desire of athletes to attack the opponent's head.

Prevalence of Technique

Similar to findings in previous studies (Kwok, 2012; Suppiah et al., 2017), the roundhouse kick was the technique athletes used most frequently in all three groups. Around 67% of the attacks were the roundhouse kick, which indicated that the roundhouse kick played a dominant role in the competition. According to the competition rules (World Taekwondo, 2019), a score would award to an athlete only when a permitted technique delivered to the scoring area with the proper level of impact. Hence, speed and power were crucial elements for successful scoring in Taekwondo. Without speed, the attack would not be able to deliver to the scoring area as an opponent could block or dodge away from the attack easily. Without power, athletes could not score successfully as the level of impact of the attack was insufficient. The features of the roundhouse kick made it become the most frequently used technique in Taekwondo sparring as it ranked first in speed of attack and second in force output among all legal attacking techniques (Pieter & Pieter, 1995; Serina & Lieu, 1991).

Participants from the elite athlete group performed significantly different than those in the other two groups in the use of the hook kick during the competition. Participants from the elite group also achieved a higher percentage in the use of the hook kick. This result was in line with a previous study, which indicated that medalists tended to use the hook kick more frequently than non-medalists (Suppiah et al., 2017). Unlike athletes using the roundhouse kick, athletes seldom used the hook kick in competition (Kwok, 2012). Most athletes were not familiar with the execution path of the hook kick and might have difficulties in blocking or avoiding this attack. With the implementation of the Protector and Scoring System (PSS), which was the electronic gear and scoring system, athletes would receive a score only if they could kick the body sensor of the opponent with the foot sensor of their own with sufficient level of impact. The use of PSS in Taekwondo competition was a measurement to ensure a reliable and accurate score identification in the competition (Tasika, 2013). A fast and unexpected attack could enhance the chance of

scoring as it made blocking the attack become more difficult. Since the utilization rate of the hook kick was very low and an opponent might not be acquainted with it to block it, using the hook kick in competition can enhance the chance of successful scoring.

Use of Leg

Participants from the elite athlete group performed more than 50% of attacks with the front leg, and this percentage was much higher than the one from the other two groups. The biomechanical advantages of attacks executed by the front leg and rear leg were different. Executing an attack with the front leg had stronger relative force, while executing an attack with the rear leg had faster tangential velocity (Lee et al., 2005). No doubt, speed and power were essential elements in successful scoring in Taekwondo sparring. However, with the implementation of PSS, speed of attack became extremely important in the match as without a high speed, an opponent could block the attack or dodge away from the attack easily. Failing to touch the opponent's body sensor with the athlete's own foot sensor would result in zero score, no matter how powerful the attack. Hence, executing a powerful attack with the front leg would be an advantage for winning the competition as it was a fast kick, compared to an attack with the rear leg. However, according to Casolino et al. (2012), a strong front leg kick was a skillful technique that took time to develop. To execute this skillful technique, athletes had to handle a series of coordination actions for adjusting the fighting stance and transferring the body weight to the rear leg before executing the attack. Hence, participants in the sub-elite athlete and the non-elite athlete groups attacked less frequently with the front leg.

Scoring Profile

The scoring rate of participants from the elite athlete group was lower than the scoring rate of participants from the sub-elite athlete group. In fact, Menescardi et al. (2020) studied the effectiveness of attacks by elite athletes and concluded that most of the attacks were ineffective (resulted in zero score). The need for athletes to demonstrate an active fighting style in the match, rather than aiming for scoring, was the explanation for the ineffectiveness attacks among elite athletes. Based on the rules of Taekwondo competition (World Taekwondo, 2019), avoiding or delaying the competition would result in punishment, which further led to score deduction. To avoid score deduction due to violation of rules, elite athletes executed attack frequently, though they did not aim for scoring by those attacks.

Participants from sub-elite athlete group obtained the highest scoring rate among the three groups. However, this group of participants also obtained the highest percentage in losing score when executing the attack. For winning a Taekwondo match, gaining score and avoiding losing score were equally important. Although the scoring rate of participants in the elite athlete group was lower than for those in the sub-elite athlete group, elite athletes executed more attacks in the competition, and thus, the actual score elite athletes obtained was similar to those in the sub-elite athlete group. Besides, participants from the elite athlete group differed significantly from those in the other two groups in losing score when executing the attack. Sub-elite athletes and non-elite athletes tended to lose scores more frequently than did elite athletes while executing an attack. Hence, this proved that participants from the elite athlete group performed better in defensive

technique.

Conclusion

This study reveals the fighting pattern of Taekwondo athletes with different levels of expertise. Elite and sub-elite athletes utilize more different types of attacks in competition than non-elite athletes. This enables them to enhance the variation of fighting tactics and delay the reaction time of opponents. The skill level of elite and sub-elite athletes is very similar as participants in these groups are representatives of their own nations who have devoted themselves through several hundred hours of deliberate practices. Hence, only very subtle differences in fighting pattern reveal themselves between the two groups. However, these differences are vital to the success in the competition. Elite athletes are better at the use of front leg to attack than those the other two groups. This tactic allows elite athletes to attack more quickly and enhances athletes' chances of scoring, as it fits into the special feature of the PSS. Moreover, elite athletes perform better in defensive skill than do sub-elite and non-elite athletes, as elite athletes have a lower percentage in losing score while executing the attack. Coaches always focus on enhancing the scoring ability of athletes by including different skills and fitness programs in the regular training. However, some coaches neglect the importance of defensive skill and allocate only very limited time to relevant practices such as blocking practice. Results in this study reveal the importance of defensive skill in competition. In order to facilitate athletes to achieve the next level of expertise, coaches should observe the differences between each level of expertise and prescribe appropriate training that suits the needs of their own athletes.

References

- Arazi, H., Hosseinzadeh, Z., & Izadi, M. (2016). Relationship between anthropometric, physiological, and physical characteristics with success of female taekwondo athletes. *Turkish Journal of Sport and Exercise, 18*(2), 69-75. <https://doi.org/10.15314/tjse.94871>
- Casolino, E., Lupo, C., Cortis, C., Chiodo, S., Minganti, C., Capranica, L., & Tessitore, A. (2012). Technical and tactical analysis of youth Taekwondo performance. *The Journal of Strength and Conditioning Research, 26*(6), 1489-1495.
- Falco, C., Estevan, I., Alvarez, O., Morales-Sánchez, V., & Hernández-Mendo, A. (2014). Tactical analysis of the winners' and non-winners' performances in a Taekwondo university championship. *International Journal of Sports Science & Coaching, 9*(6), 1407-1416.
- Hick, W. (1952). On the rate of gain of information. *Quarterly Journal of Experimental Psychology, 4*, 11-26. <https://doi.org/10.1080/17470215208416600>
- Hughes, M. (2005). Notational analysis. In R. Barlett, C. Gratton, & C.G. Rolf (Eds), *Encyclopedia of international sports studies*. London: Routledge.
- Janelle, C. M., & Hillman, C. H. (2003). Expert performance in Sport: Current perspectives and critical issues. In J. L. Starkes., & K. A. Ericsson (Eds), *Expert performance in sports: Advances in research on sport expertise* (pp. 20-47). Champaign, IL: Human Kinetics.
- Kahayyat, H. N., Sagir, S. G., Hatas, Ö., Smolarczyk, M., & Akalan, C. (2020). Physical, physiological, and psychological profiles of elite Turkish taekwondo athletes. *Biomedical Human Kinetics, 12*, 187-196. <https://doi.org/10.2478/bhk-2020-0024>
- Kim, J. W., Kwon, M. S., Yenuga, S. S., & Kwon, Y. H. (2010). The effect of target distance on Pivot hip, trunk, pelvis, and kicking leg kinematics in Taekwondo roundhouse kick. *Sports*

- Biomechanics*, 9, 98-114.
- Kwok, H. M. H. (2012). Discrepancies in fighting strategies between Taekwondo medalists and non-medalists. *Journal of Human Sport and Exercise*, 7(4), 806-814. <https://doi.org/10.4100/jhse.2012.74.08>
- Lee, C. L., Chin, Y. F., & Liu, Y. (2005). *Comparing the Difference between Front-leg and Back-leg Round-house Kicks Attacking Movement Abilities in Taekwondo*. Proceedings of XXIII International Symposium on Biomechanics in Sports. Beijing, China: The China Institute of Sport Science, 877-880.
- Li, B., Ding, C., Fan, F., Shi, H., Guo, L., & Yang, F. (2020). Associations between psychological profiles and performance success among professional Taekwondo athletes in China: A multidimensional scaling profile analysis. *Frontiers in Psychology*, 11, 822. <https://doi.org/10.3389/fpsyg.2020.00822>
- Menescardi, C., Estevan, I., Ron, C., Hernández-Mendo, A., & Falco, C. (2020). Bivariate analysis of taekwondo actions: The effectiveness of techniques and tactics in an Olympic Taekwondo championship. *Journal of Human Sport and Exercise*, in press. <https://doi.org/10.14198/jhse.2021.161.18>
- Norjali Wazir, M. R. W., Van Hiel., M., Mostaert, M., Deconinck, F. J. A., & Lenoir, M. (2019). Identification of elite performance characteristics in a small sample of Taekwondo athletes. *PLoS One*, 14(5): e0217358. <https://doi.org/10.1371/journal.pone.0217358>
- Pedzich, W., Mastalerz, A., & Urbanik, C. (2006). The comparison of the dynamics of selected leg strokes in taekwondo WTF. *Acta of Bioengineering and Biomechanics*, 8(1), 1-9.
- Pieter, F., & Pieter, W. (1995). Speed and force in selected Taekwondo techniques. *Biology of Sport*, 12(4), 257-266.
- Schmidt, R. A., & Wrisberg, C. A. (2004). *Motor learning and performance: A problem-based learning approach* (3rd). Champaign, IL: Human Kinetics.
- Serina, E. R., & Lieu, O. K. (1991). Thoracic injury potential to basic competition Taekwondo kicks. *Journal of Biomechanics*, 24, 951-960.
- Suppiah, P. K., Joumyy, A. J., Abdullah, M. R., Maliki, A. B., Musa, R. M., Mat-Rasid, M., Adnan, A., Kosni, N. A., & Juahir, H. (2017). The strategy difference and movement pattern between medalist and non-medalist Taekwondo youth athlete. *Journal of Fundamental and Applied Sciences*, 9(2S), 858-868. <https://doi.org/10.4314/jfas.v9i2s.61>
- Tasika, N. (2013). Reliability and linearity of an electronic body protector employed in Taekwondo games: A preliminary study. *Journal of Human Sport and Exercise*, 8(3), s622-s632.
- Tsolakis, C., & Vagenas, G. (2010). Anthropometric, physiological and performance characteristics of elite and sub-elite fencers. *Journal of Human Kinetics*, 23, 89-95.
- World Taekwondo (2019). *Competition rules and interpretation*. Retrieved August 30, 2019, from <http://www.worldtaekwondo.org/wp-content/uploads/2019/08/WT-Competition-Rules-Interpretation-Manchester-May-15-2019.pdf>
- World Taekwondo (2020). *About WT*. Retrieved August 22, 2020, from <http://www.worldtaekwondo.org/about-wt/members/>
- Zandi, H. G., & Mohebi, M. (2016). Investigating distinctive psychological characteristics of successful and unsuccessful elite Iranian Taekwondo athletes. *Journal of the International Association for Taekwondo Research*, 3(1), 11-18.

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Discussion Questions

1. Based on the findings in this study, how should a coach prescribe the training program for athletes at different levels of expertise?
2. What is the major reason for participants from sub-elite athlete group adopting a slightly different pattern in prevalence of technique than those from elite athlete group?
3. What are those major discrepancies in fighting tactics between athletes at different levels of expertise?

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“Pelican Soaring in Flamingo Gardens, Florida”
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Psychological, Motivational, and Contextual Factors Impacting Student Sport Participation

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Abstract

The student athletic population is more vulnerable to debilitating and devastating mental health disorders relative to the general population (Gouttebarga et al., 2019). Athletes also demonstrate lower positive attitudes toward seeking psychological help in comparison to nonathletes (Gulliver, Griffiths, & Christensen, 2012). This article reviews current literature on topics of interest within the field of sports psychology. It includes personal characteristics or basic psychological needs important to achieve an ideal body-mind balance correlating to personal growth and wellbeing. The self-determination theory, the self-efficacy theory, and the achievement goal theory help explain how the sporting context can influence athletes' motivation and performance levels. The roles and functions of modern psychology practitioners precede a discussion on the effectiveness of psychotherapy as a cost-effective method reducing morbidity, disability, and mortality. Evidence corroborates the vital role of sport psychology practitioners in helping student athletes achieve their full potential.

Keywords: psychological issues, psychotherapy, resilience, self-compassion, social support, sport psychology, student athletes

Introduction

Psychology literature confirms that the student athletic population is more vulnerable to debilitating and devastating mental health disorders such as depression, anxiety, and suicide relative to the general population (Gouttebarga et al., 2019; Iverson, 2014). This vulnerability is related to both sporting factors (e.g., performance, burnout, injury) and non-sporting factors (e.g., eating disorders, substance misuse). This knowledge is particularly problematic and concerning as these athletes are reluctant to seek professional help or fail to complete the full course of counseling partially fearing judgment, stereotypes, and discrimination (Merz et al., 2020; Nevid & Rathus, 2016).

As a result of stigma, athletes demonstrate lower positive attitudes toward seeking psychological help in comparison to nonathletes (Gulliver, Griffiths, & Christensen, 2012). This vulnerability to disregard professional help results into an increased concealment of symptoms and feelings of emotional distress in order to please their coaches and managers, while trying to maintain their positions (Coyle, Gorczynski, & Gibson, 2017); resulting in the continued deterioration of their mental health. Given that the sporting context can generate significant adversity, researchers within the field are examining how to best respond to athletes' negative experiences (Bryan, O'Shea, & MacIntyre, 2018). Consequently, psychological, motivational and contextual factors are topics of interest within the field.

Psychological Factors

According to Harmison (2011), there is an ideal body-mind profile or state that correlates with peak performance for most athletes. This psychological state incorporates: (a) positive thoughts and attitudes regarding performance; (b) feeling calm and at peace, but still energetic and in control; (c) being attentive and able to concentrate on the task at hand; (d) high self-confidence and expectations to succeed; and (e) determination and commitment.

Deci and Ryan (2000) assert that certain personal characteristics, or basic psychological needs, or both, are important for athletes to achieve an ideal body and mind balance targeting positive psychological outcomes. The basic psychological needs theory defines these needs as "innate psychological nutrients that are essential for ongoing psychological growth, integrity, and wellbeing" (p. 229) for all individuals, regardless of their age, sex, gender, or culture (Pulido et al., 2020). Some of these psychological needs follow (see Table 1).

Table 1
Psychological Factors Impacting Well-Being

Factor	Characteristics
Self-control	the process or capacity to exert control over one's own thoughts, emotions, or behaviors to attain a positive outcome.
Cognitive control	mental processes that restrain or inhibit certain behaviors.
Mental toughness	the capacity to achieve consistent high levels of performance in the face of common adversities and challenges.
Resilience	the ability to positively adapt to adversity, a complex and dynamic process of interactions.
Social identity	one's feelings of belongingness and level of emotional attachment to a specific group.
Social support	the social exchange between individuals with the intention to enhance one another's well-being.
Self-compassion	"being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness"
Pleasure, enjoyment, and life satisfaction	maximizing pleasure and enjoyment during exercise / practice performances. Experiencing satisfaction in life determines important life outcomes, such as internal locus of control.

Self-Control

Self-control or self-regulation refers to the process or capacity to exert control over one's own thoughts, emotions, or behaviors with the aim to attain a positive outcome (Baumeister, 2014). Self-control comprises numerous adaptive behaviors such as healthy eating, weight control, and better school and work performance (de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012). Self-control is, therefore, crucial when participating in physical activities and sports (Englert, Graham, & Bray, 2020).

Individuals with higher levels of self-control or self-regulation are generally healthier, happier, and more successful than those with lower levels of self-control (Englert, Graham, & Bray, 2020). In contrast, fatigue and low self-efficacy can result from extended periods of self-control (Graham, Martin Ginis, & Bray, 2017; Hofseth, Toering, Jordet, & Ivarsson, 2017). Practitioners must be mindful of lengthy periods of self-control as they can negatively impact athletes' psychological health.

Cognitive Control

Cognitive control, a component of self-control, refers to mental processes that restrain or inhibit certain behaviors (Inzlicht, Bartholow, & Hirsh, 2015), instrumental in sports (Brown, & Bray, 2017). Exerting cognitive control is essential, for example, when sport opponents engage in deceptive tactics during competitions with the aim to distract the other team and 'fake' the next move; still, athletes must continue to persist and perform their best, even when nearing their limits of mental fatigue and exhaustion (Englert, Graham, & Bray, 2020).

Recent studies on the effects of cognitive control and mental exhaustion (e.g., Baumeister & Vohs, 2007; Englert, Graham, & Bray, 2020) propose that people's ability to exert cognitive control lasts for only a period of time. As a result, it negatively affects subsequent performances requiring self-control in either the cognitive, emotional, or behavioral domains, or combinations of these (Cunningham & Baumeister, 2016). Motivational factors also can explain the negative impact of cognitive control exertion, as individuals reduce their willingness or enthusiasm to continue engagement in effortful tasks (Brown & Bray, 2017). Nonetheless, proper rest can help replenish self-control (Baumeister, Vohs, & Tice, 2007).

Mental Toughness

Mental toughness involves an individual's capacity to achieve consistent high levels of performance in the face of common adversities and challenges (Cooper, Wilson, & Jones, 2019; Sarkar & Fletcher, 2016). Fluctuations in the level of mental toughness involve the quality and duration of sleep, as these impact attentional and emotional regulation (Cooper, Wilson, & Jones, 2019) as well as physical and cognitive performance (Belenky et al., 2003). Practitioners should emphasize the need for increasing the duration and quality of sleep to foster mental processes and toughness.

Resilience

Scholars typically consider resilience, or the ability to positively adapt to adversity, a complex and dynamic process of interactions (Hill, Den Hartigh, Meijer, De Jonge, & Van Yperen,

2018). From a dynamical systems approach and building on previous studies, scholars explain that athletes' pre-competition experiences heavily impact their level of resilience which involve cognitive processes and the potential for responding to adversities (Galli & Pagano, 2018). According to this view, the coping skills that athletes utilize to deal with adversities impact their level of resilience (Hill et al., 2018). Resilience thus appears to be a crucial asset for student athletes to be able to overcome periods of distress.

Some scholars (e.g., Berger, 2018) claim that children's lack of resilience is due to overprotective or 'over-coddling' parents who hinder the children's ability to solve minor problems or face challenges alone, such as waking up for school on time. Hence, these children later scare easily and may even suffer traumas from what could be common, daily setbacks. Others blame social anxiety resulting from new technology, the pressure to succeed, and new financial pressures, among other factors, as responsible for the lack of resilience in today's youngsters (Cogan, 2019).

In a study in which multiple psychosocial factors distinguish resilient from non-resilient athletes, Hill and colleagues (2018) conclude that adaptation to adversity derives from each athlete's individual experiences and the protective factors each brings to a specific situation. This evidence helps explain athletes' ability to respond more efficiently, effectively, and strongly to adversity (Galli & Pagano, 2018; Kiefer, Silva, Harrison, & Araújo, 2018). In turn, this ability impacts the way student athletes appraise challenges, the cognitive strategies they use, and the responses they adopt when facing stressors (Galli & Pagano, 2018; Hill et al., 2018). Evidence therefore suggests that resilience is an adaptive behavior, essential for athletes' psychological wellbeing and athletic success (Bryan, O'Shea, & MacIntyre, 2018; Fletcher & Sarkar, 2012; Schinke, Stambulova, Si, & Moore, 2017).

Interestingly, numerous factors promote athletes' resilience, including both personal and environmental factors. Among the personal factors are psychological characteristics such as motivation, confidence, and a positive personality; an optimistic attitude; self-reflection, self-insight and lower negative affect (Gonzalez, Newton, Hannon, & Smith, 2018; Kiefer et al., 2018). Environmental factors include social support and a positive sporting environment (Vitali, Bortoli, Bertinato, Robazza, & Schena, 2015). These factors positively influence athletes' capacity to adapt to adversity by the way they appraise and respond to challenges utilizing effective cognitive strategies.

With proper training and education, student athletes can develop resilience; hence, increase their capacity to positively adapt and respond to adversity (Kiefer et al., 2018). Coaches can promote resilience through their daily interactions with athletes, especially if these interactions are positive and constructive; strengthening athletes' ability to effectively appraise and overcome adversities and setbacks (Sarkar & Fletcher, 2016; Wylleman, Rosier, De Brandt, & De Knop, 2016).

Fletcher and Sarkar (2012) corroborate that resilience should be an integral part of sports training programs taking into account the complex interaction between personal qualities, appraisals, and environmental factors. According to the scholars, a resilience training program should be comprehensive and holistic; focusing on three distinct features: (a) developing protective psychological skills; (b) creating a challenging, yet supportive environment; and (c) promoting a 'challenge mindset' in which athletes can make a positive appraisal of their own thoughts, emotions, adversities, and resources.

Social Identity

Psychological literature also offers evidence regarding the positive impact of social identity in the development of athletes' psychological wellbeing. Murray, Coffee, Arthur, and Eklund (2019) summarize social identity as one's feelings of belongingness and level of emotional attachment to a specific group. According to the social identity approach, human beings perceive themselves and others in terms of social categories (Murray et al., 2019). Within the sport context, this means that athletes incorporate the collective identity of the whole team into their own individual self-concept (Rees, Alexander Haslam, Coffee, & Lavallee, 2015). The extent to which athletes can socially identify with their teams varies, but it facilitates positive and negative sports outcomes (Graupensperger, Jenson, & Evans, 2018; Murray et al., 2019). It is important for practitioners to consider ways in which athletes can socially identify with their teams.

Social Support

The social exchange between individuals with the intention to enhance one another's wellbeing is especially beneficial to injured athletes (Podlog & Eklund, 2010). Different types of social support include personal, emotional, listening, reality confirmation, and task appreciation or task challenge (Covassin, Elbin, Beidler, LaFevor, & Kontos, 2017). Evidence suggests that the type of support and its timing are both critical to be effective, more so when aiding athletes in their process of recovery (Udry, 2001). Social support during recovery can help injured athletes increase their motivation to get better and adhere to their rehabilitation programs with lower overall emotional distress (Covassin et al., 2017). Also, social support may decrease the fear of another injury in the future as well as feelings of isolation or alienation from the sport and the team (Podlog & Eklund, 2010). In addition, proper social support may lower levels of anxiety that normally arise after an injury (Kontos, 2017).

Data show that athletes who suffer a concussion may report feelings of frustration and irritability toward their immediate family members after their injury (Iadevaia, Roiger, & Zwart, 2015), but these athletes also indicate that teammates' support helps them during their recovery process (Kontos, 2017). These findings emphasize the importance of social support as a coping strategy for athletes, especially injured ones, to alleviate their feelings of isolation, strengthen recovery outcomes, and reduce anxiety post injury.

Self-Compassion

Self-compassion is another component of an ideal psychological profile, especially for women athletes (Killham, Mosewich, Mack, Gunnell, & Ferguson, 2018; Reis et al., 2015). Self-compassion is "being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness" (Neff, 2003, p. 87). Self-compassion includes being kind and understanding toward oneself and others rather than being overly harsh and judgmental or critical (Killham et al., 2018). It also includes connection with others rather than isolation, especially after experiencing or sharing common experiences, such as winning or losing a competition. Self-compassion also includes being mindful or holding specific experiences or events in perspective rather than allowing these experiences or events to overwhelm or consume the athlete (Neff, 2011).

Self-compassion plays an important role in motivation through individuals' acceptance of personal failures and their desire to improve and move on (Breines & Chen, 2012). This self-compassionate motivation involves adopting personal improvement measures, such as studying harder to improve a failing grade, wanting to make amends after a moral transgression, or increasing efforts to improve personal weaknesses (Breines & Chen, 2012). Particularly to sporting contexts, self-compassion negatively correlates to feelings of shame, anxiety about performance or body image, fear of failure, negative self-evaluations or self-criticisms as well as concerns over failures and mistakes (Mosewich, Crocker, Kowalski, & Delongis, 2013).

Exploring the connection between self-compassion and self-criticism among female athletes, Mosewich and colleagues (2013) found that self-compassion positively correlates to higher perceptions of performance; opposite to self-criticism, which is not. Further, the scholars affirm that self-compassion is a valuable resource for women athletes when evaluating their performance, which can then serve as a buffer against the challenges of self-criticism. Given this positive relationship between self-compassion (rather than self-criticism) and athletes' perceptions of sport performance, it is important for practitioners to understand and encourage self-compassion among athletes, especially female athletes, in order to promote their performance, individual motivation, and sport experiences.

Pleasure, Enjoyment, and Life Satisfaction

Scholars encourage coaches and psychology practitioners to teach athletes how to focus their attention on maximizing pleasure and enjoyment during exercise and practice performances (Chen, Wu, Lin, & Ye, 2018; Zenko, Kahn, Berman, Hutchinson, & Jones, 2020). Using simple positive and encouraging verbal prompts can help maximize athletes' experiences. Research shows that undergoing positive emotions during exercise and practice performances can predict positive behaviors during the same performances in the future (Rhodes & Kates, 2015). Research also confirms that experiencing satisfaction in life determines other important life outcomes, such as internal locus of control (i.e., believing that we have some control over the causes of life events) (Chen et al., 2018; Licht, Hull, & Ballantyne, 2020).

Motivational and Contextual Factors

Psychological theories help explain how the sporting context can either positively or negatively influence athletes' motivation and performance levels (Rocchi, & Pelletier, 2018). The self-determination theory, the self-efficacy theory, and the achievement goal theory shed light into this interconnection or relationship (see Table 2).

Self-Determination Theory

According to Ryan and Deci (2017), the self-determination theory (SDT) explains how athletes' motivation to participate in sports derive from contextual factors (e.g., coaching environment, culture) and the extent to which the sport satisfies basic psychological needs (e.g., autonomy). If the sport contextual or environmental structure promotes basic psychological needs, then athletes experience an increase in autonomous motivation to practice the sport. This increase in autonomous motivation results from athletes enjoying the sport, wanting to train more and improve their sporting skills in the process (Mageau & Vallerand, 2003). Fortunately, this

motivation extends to other areas of the athlete's life as well. Studies show that athletes' autonomous motivation within the sports context fosters positive outcomes in their physical and mental health, their education, levels of persistence and effort to move on in life (Pelletier, Fortier, Vallerand, & Briere, 2001). On the other hand, a lack of this personal motivation thwarts athletes' basic psychological needs fostering frustration, exhaustion, and burnout (Lonsdale, Hodge, & Rose, 2009).

Self-Efficacy Theory

In accordance with this theory of self-efficacy and the confidence model in sports, positive evaluations of one's own skills and abilities are psychological factors that impact performance (Beaumont, Maynard, & Butt, 2015). Application of both the theory and the model suggests that athletes' evaluations of their own skills and abilities can either promote or hinder athletic performance (Hofseth et al., 2017). However, athletes who evaluate their abilities and skills very high may experience lower motivation to improve these skills in comparison with those who evaluate their abilities and skills low, which in turn reflects in their future level of performance (Hofseth et al., 2017).

Achievement Goal Theory

Dewar and Kavussanu (2012) posit that people engage in activities or settings emphasizing achievement in order to demonstrate or develop competence. Therefore, involving themselves on a task that emphasizes achievement while playing sports may be beneficial to athletes for their perceptions of performance and the emotions they experience after competition. The authors also suggest that those emotions involving athletes' ego depend to a certain degree on athletes' perceptions of their performance or the outcome of the competition. The authors recommend that, given that performance is not completely under their control, and it is therefore inconsistent across time, athletes should be aware of the consequences of involving their ego (the same way they should not evaluate their skills too high) during sporting activities. In sum, achievement goals, perceptions of performance, and outcome of the competition are important factors to consider when addressing athletes' mental and emotional status.

Sport participation must involve positive relationships involving cooperation, loyalty, and trust among teammates while also demonstrating compassion and fairness toward opponents (Eime, Young, Harvey, Charity, & Payne, 2013). Positive relationships with all sports participants - both within and outside of their teams - promote personal growth (Eime et al., 2013). Positive social behaviors among teammates alone can lead to enhanced feelings of cohesion, commitment, effort, performance, and enjoyment (Bruner, Boardley, & Côté, 2014).

Inversely, sport competition can promote negative social behaviors such as bullying others, aggression and cheating; all of which weaken interpersonal connections (Evans, Eys, & Bruner, 2012) and threaten the intrinsic value of playing the sport (Kavussanu, 2008). Appropriate structure in the sporting context is a form of socialization which involves providing athletes with a comprehensive rationale for rules and expectations, unconditional emotional support, constructive feedback, empathic recognition of negative emotions, and encouragement of their input into the decision-making process whenever possible (Curran, Hill, Ntoumanis, Hall, & Jowett, 2016).

Table 2

Motivational and Contextual Factors

Factors	Characteristics
Self-determination theory	athletes' motivation to participate in sports derive from contextual factors (e.g., coaching environment, culture) and the extent to which the sport satisfies basic psychological needs (e.g., autonomy).
Self-efficacy theory	positive evaluations of one's own skills and abilities are psychological factors that impact performance.
Achievement goal theory	people engage in achievement-related activities or settings in order to demonstrate or develop competence. Involving themselves on a task while playing sport may be beneficial to athletes for their perceptions of performance and the emotions they experience after competition.

Practitioners' Roles and Functions

Effective psychology practitioners must procure certain skills and practical knowledge emphasizing motivation, attitudes, fairness, stress, and leadership (Cruickshank & Collins, 2015; Wagstaff, 2017). Practitioners should be aware of the psychological qualities, attributes, and characteristics of the high performing student athlete. They should understand motivational and structural factors impacting student athletes' psychological wellbeing. Practitioners should also build sensitive rapport and develop trust from the time of their first meeting with the student athlete, when eliciting crucial information regarding athletes' strengths, concerns and personal needs (Aoyagi et al., 2017). This can help professionals determine the best way to help these students and choose the most appropriate strategy(ies) to address personal and family issues, media scrutiny, and other private concerns (Harmison, 2011). Adhering to ethical rules and regulations is vital to the therapeutic relationship (Oramas, 2017).

Practitioners can then choose from numerous therapeutic approaches and interventions to obtain positive results, including psychotherapy. Psychotherapy involves brief, but intensive and frequent, 45- to 60-minute sessions over a period of months and even years. According to Nevid and Rathus (2016), about 50 percent of clients show significant improvement after 20 sessions and 75 percent show the same results after 40 sessions. Nonetheless, client's condition, specific needs, level of motivation to get better, plus the ability of the practitioner to reduce presenting symptoms and improve functioning are all deciding factors in the length and overall outcome of the treatment (Decker, 2016).

Despite debates and concerns that still exist regarding psychotherapy, decades of research in the field consider psychotherapy a cost-effective method that reduces morbidity, disability, and mortality while improving overall functioning, decreasing the need for inpatient hospitalization and the use of medical and surgical procedures (APA, 2012). There is evidence supporting psychotherapy's role in reducing clients' presenting symptoms and helping them feel better, showing meaningful clinical change in less than four months of starting treatment (Nevid & Rathus, 2016; Norcross & Lambert, 2018). In sum, successful therapies all invoke common factors including a trusting relationship, expectancy, hope, commitment, and evidenced-based practices.

The bottom line is that “In the care of a properly-trained therapist, we may become mentally whole and it is not an illusion” (Gantt, 2018, p. 215).

Conclusions

College students who participate in sports have the potential to foster positive experiences through the satisfaction of certain psychological needs as well as the development of character and interpersonal skills (Bell, Hardy, & Beattie, 2013; Heil, 2016). However, in their pursuit for success, student athletes struggle with numerous challenges which place them at risk of developing mental health conditions such as depression, anxiety, and substance abuse. It is crucial for mental health providers to understand the vulnerability of collegiate athletes to develop psychological disorders as well as their reluctance to seek professional help. With this knowledge, providers can better assist athletes in their process of healing and recovery.

Sport practitioners can help student athletes develop individual resources, strategies or skills to effectively address and overcome challenging times, enhance their performance, and reduce the risks of adverse sporting environments (Harmison, 2011). Professionals in the field should devise ways to educate student athletes on the importance of developing positive coping strategies and resources (e.g., self-control, mental toughness, resilience) to help them overcome challenging times while improving the overall sporting context. Practitioners should consider strategies to enhance athletes’ perceptions of self-sufficiency, interpersonal relationships, and feelings of belongingness to achieve body-mind balance and psychological growth. “By designing ways for athletes to increase their awareness of their ideal performance states and systematically develop their psychological skills and strategies, sport psychology practitioners can play a vital role in helping them achieve their potential” (Harmison, 2011, p. 16).

References

- American Psychological Association (APA). (2012). *Resolution on the recognition of psychotherapy effectiveness*. <https://www.apa.org/about/policy/resolution-psychotherapy>
- Aoyagi, M. W., Poczwadowski, A., Statler, T., Shapiro, J. L., & Cohen, A. B. (2017). The Performance Interview Guide: Recommendations for initial consultations in sport and performance psychology. *Professional Psychology: Research and Practice, 48*(5), 352–360. <https://doi.apa.org/doiLanding?doi=10.1037%2Fpro0000121>
- Baumeister, R., & Vohs, K. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass, 1*, 115–128. <http://dx.doi.org/10.1111/j.1751-9004.2007.00001.x>
- Baumeister, R. F. (2014). Self-regulation, ego depletion, and inhibition. *Neuropsychologia, 65*, 313–319. <http://dx.doi.org/10.1016/j.neuropsychologia.2014.08.012>
- Beaumont, C., Maynard, I. W., & Butt, J. (2015). Effective ways to develop and maintain robust sport-confidence: Strategies advocated by sport psychology consultants. *Journal of Applied Sport Psychology, 27*, 301–318. <http://dx.doi.org/10.1080/10413200.2014.996302>
- Belenky, G., Wesensten, N. J., Thorne, D. R., Thomas, M. L., Sing, H. C., Redmond, D. P., . . . Balkin, T. J. (2003). Patterns of performance degradation and restoration during sleep restriction and subsequent recovery: A sleep dose-response study. *Journal of Sleep Research, 12*, 1–12. <http://dx.doi.org/10.1046/j.1365-2869.2003.00337.x>

- Bell, J. J., Hardy, L., & Beattie, S. (2013). Enhancing mental toughness and performance under pressure in elite young cricketers: A 2-year longitudinal intervention. *Sport, Exercise, and Performance Psychology*, 2(4), 281–297. <https://doi.org/10.1037/a0033129>
- Berger, M. (September 19, 2018). One-third of first-year college students report mental health issues. *Healthline*. 1-2. <https://www.healthline.com/health-news/college-frosh-mental-health#A-lack-of-resilience>.
- Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin*, 38, 1133–1143. <http://dx.doi.org/10.1177/0146167212445599>
- Brown, D. M. Y., & Bray, S. R. (2017). Graded increases in cognitive control exertion reveal a threshold effect on subsequent physical performance. *Sport, Exercise, and Performance Psychology*, 6(4), 355–369. <https://doi.org/10.1037/spy0000091>
- Bruner, M. W., Boardley, I. D., & Côté, J. (2014). Social identity and prosocial and antisocial behavior in youth sport. *Psychology of Sport and Exercise*, 15, 56–64. <http://dx.doi.org/10.1016/j.psychsport.2013.09.003>
- Bryan, C., O’Shea, D., & MacIntyre, T. E. (2018). The what, how, where and when of resilience as a dynamic, episodic, self-regulating system: A response to Hill et al. (2018). *Sport, Exercise, and Performance Psychology*, 7(4), 355–362. <https://doi.org/10.1037/spy0000133>
- Chen, L. H., Wu, C.-H., Lin, S.-H., & Ye, Y.-C. (2018). Top-down or bottom-up? The reciprocal longitudinal relationship between athletes’ team satisfaction and life satisfaction. *Sport, Exercise, and Performance Psychology*, 7(1), 1-12. <https://doi.org/10.1037/spy0000086>
- Cogan, K. D. (2019). Coaching Olympic athletes with sport psychology. *Consulting Psychology Journal: Practice and Research*, 71(2), 86–96. <https://doi.org/10.1037/cpb0000129>
- Cooper, K. B., Wilson, M. R., & Jones, M. I. (2019, June 13). The impact of sleep on mental toughness: Evidence from observational and N-of-1 manipulation studies in athletes. *Sport, Exercise, and Performance Psychology*. 9(3), 308-321. Advance online publication. <http://dx.doi.org/10.1037/spy0000174>
- Covassin, T., Elbin, R. J., Beidler, E., LaFevor, M., & Kontos, A. P. (2017). A review of psychological issues that may be associated with a sport-related concussion in youth and collegiate athletes. *Sport, Exercise, and Performance Psychology*, 6(3), 220–229. <https://doi.org/10.1037/spy0000105>
- Coyle, M., Gorczynski, P., & Gibson, K. (2017). “You have to be mental to jump off a board any way”: Elite divers’ conceptualizations and perceptions of mental health. *Psychology of Sport and Exercise*, 29, 10–18. <http://dx.doi.org/10.1016/j.psychsport.2016.11.005>
- Cruickshank, A., & Collins, D. (2015). Illuminating and applying “the dark side”: Insights from elite team leaders. *Journal of Applied Sport Psychology*, 27, 249–267. <http://dx.doi.org/10.1080/10413200.2014.982771>
- Cunningham, M. R., & Baumeister, R. F. (2016). How to make nothing out of something: Analyses of the impact of study sampling and statistical interpretation in misleading meta-analytic conclusions. *Frontiers in Psychology*, 7, 1639. <http://dx.doi.org/10.3389/fpsyg.2016.01639>
- Curran, T., Hill, A. P., Ntoumanis, N., Hall, H. K., & Jowett, G. E. (2016). A three-wave longitudinal test of self-determination theory’s mediation model of engagement and disaffection in youth sport. *Journal of Sport and Exercise Psychology*, 38, 15–29. <http://dx.doi.org/10.1123/jsep.2015-0016>

- de Ridder, D. T., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review, 16*, 76–99. <http://dx.doi.org/10.1177/1088868311418749>
- Deci, E. L., & Ryan, R. M. (2000). Target article: The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268. http://dx.doi.org/10.1207/S15327965PLI1104_01
- Decker, H. S. (2016). Cyclical swings: The bête noire of psychiatry. *History of Psychology, 19*(1), 52–56. <https://doi.org/10.1037/hop0000017>
- Dewar, A. J., & Kavussanu, M. (2012). Achievement goals and emotions in team sport athletes. *Sport, Exercise, and Performance Psychology, 1*(4), 254–267. <https://doi.org/10.1037/a0028692>
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity, 10*(98), 1-21. <https://doi.org/10.1186/1479-5868-10-98>
- Englert, C., Graham, J. D., & Bray, S. R. (2020). Self-control in sport and exercise psychology [Editorial]. *Sport, Exercise, and Performance Psychology, 9*(2), 161–166. <https://doi.org/10.1037/spy0000205>
- Evans, M. B., Eys, M. A., & Bruner, M. W. (2012). Seeing the “we” in “me” sports: The need to consider individual sport team environments. *Canadian Psychology/Psychologie canadienne, 53*(4), 301–308. <https://doi.org/10.1037/a0030202>
- Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise, 13*, 669–678. <http://dx.doi.org/10.1016/j.psychsport.2012.04.007>
- Galli, N., & Pagano, K. (2018). Furthering the discussion on the use of dynamical systems theory for investigating resilience in sport. *Sport, Exercise, and Performance Psychology, 7*(4), 351–354. <https://doi.org/10.1037/spy0000128>
- Gantt, E. E. (2018). *Taking sides: Clashing views on psychological issues* (20th ed.). New York: McGraw Hill.
- Gonzalez, S. P., Newton, M., Hannon, J., & Smith, T. W. (2018). Examining the process of psychological resilience in sport: Performance, cortisol, and emotional responses to stress and adversity in a field experimental setting. *International Journal of Sport Psychology, 49*, 112–133. doi:10.7352/IJSP.2018.49.112
- Gouttebauge, V., Castaldelli-Maia, J. M., Gorczynski, P., Hainline, B., Hitchcock, M. E., Kerkhoffs, G. M., . . . Reardon, C. L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: A systematic review and meta-analysis. *British Journal of Sports Medicine, 53*, 700–706. <http://dx.doi.org/10.1136/bjsports-2019-100671>
- Graham, J. D., Martin Ginis, K. A., & Bray, S. R. (2017). Exertion of self-control increases fatigue, reduces task self-efficacy, and impairs performance of resistance exercise. *Sport, Exercise, and Performance Psychology, 6*(1), 70–88. <https://doi.org/10.1037/spy0000074>
- Graupensperger, S. A., Jensen, C. J., & Evans, M. B. (2018). A meta-analytic review of studies using the prosocial and antisocial behavior in sport scale: Associations among intergroup

- moral behaviors. *Sport, Exercise, and Performance Psychology*, 7(2), 186–204. <https://doi.org/10.1037/spy0000121>
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: A qualitative study. *BMC Psychiatry*, 12, 157. <http://dx.doi.org/10.1186/1471-244X-12-157>
- Harmison, R. J. (2011). Peak performance in sport: Identifying ideal performance states and developing athletes' psychological skills. *Sport, Exercise, and Performance Psychology*, 1(S), 3–18. <https://doi.org/10.1037/2157-3905.1.S.3>
- Heil, J. (2016). Sport advocacy: Challenge, controversy, ethics, and action. *Sport, Exercise, and Performance Psychology*, 5(4), 281–295. <https://doi.org/10.1037/spy0000078>
- Hill, Y., Den Hartigh, R. J. R., Meijer, R. R., De Jonge, P., & Van Yperen, N. W. (2018). The temporal process of resilience. *Sport, Exercise, and Performance Psychology*, 7(4), 363–370. <https://doi.org/10.1037/spy0000143>
- Hofseth, E., Toering, T., Jordet, G., & Ivarsson, A. (2017). Self-evaluation of skills and performance level in youth elite soccer: Are positive self-evaluations always positive? *Sport, Exercise, and Performance Psychology*, 6(4), 370–383. <https://doi.org/10.1037/spy0000094>
- Iadevaia, C., Roiger, T., & Zwart, M. B. (2015). Qualitative examination of adolescent health related quality of life at 1year post-concussion. *Journal of Athletic Training*, 50, 1182–1189. <http://dx.doi.org/10.4085/1062-6050-50.11.02>
- Inzlicht, M., Bartholow, B. D., & Hirsh, J. B. (2015). Emotional foundations of cognitive control. *Trends in Cognitive Sciences*, 19, 126–132. <http://dx.doi.org/10.1016/j.tics.2015.01.004>
- Iverson, G. L. (2014). Chronic traumatic encephalopathy and risk of suicide in former athletes. *British Journal of Sports Medicine*, 48, 162–165. <http://dx.doi.org/10.1136/bjsports-2013-092935>
- Kavussanu, M. (2008). Moral behaviour in sport: A critical review of the literature. *International Review of Sport and Exercise Psychology*, 1, 124–138. <http://dx.doi.org/10.1080/17509840802277417>
- Kiefer, A. W., Silva, P. L., Harrison, H. S., & Araújo, D. (2018). Antifragility in sport: Leveraging adversity to enhance performance. *Sport, Exercise, and Performance Psychology*, 7(4), 342–350. <https://doi.org/10.1037/spy0000130>
- Killham, M. E., Mosewich, A. D., Mack, D. E., Gunnell, K. E., & Ferguson, L. J. (2018). Women athletes' self-compassion, self-criticism, and perceived sport performance. *Sport, Exercise, and Performance Psychology*, 7(3), 297–307. <http://dx.doi.org/10.1037/spy0000127>
- Kontos, A. P. (2017). Concussion in sport: Psychological perspectives. *Sport, Exercise, and Performance Psychology*, 6(3), 215–219. <http://dx.doi.org/10.1037/spy0000108>
- Licht, D. M., Hull, M. G., & Ballantyne, C. (2020). *Psychology* (3rd ed.). New York: Macmillan Learning.
- Lienhart, N., Nicaise, V., Knight, C. J., & Guillet-Descas, E. (2019). Understanding Parent Stressors and Coping Experiences in Elite Sports Contexts. *Sport, Exercise, and Performance Psychology*, 9(3), 390–404. <http://dx.doi.org/10.1037/spy0000186>
- Lonsdale, C., Hodge, K., & Rose, E. (2009). Athlete burnout in elite sport: A self-determination perspective. *Journal of Sports Sciences*, 27(8), 785–795. <http://dx.doi.org/10.1080/02640410902929366>

- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences*, 21(11), 883–904. <http://dx.doi.org/10.1080/0264041031000140374>
- Merz, Z. C., Perry, J. E., Brauer, A. H., Montgomery, T. L., Shulze, J., & Ross, M. J. (2020, January 30). The cost of mental illness: The public's derogation of athletes with psychological distress. *Stigma and Health*. Advance online publication. <http://dx.doi.org/10.1037/sah0000213>
- Mosewich, A. D., Crocker, P. R. E., Kowalski, K. C., & Delongis, A. (2013). Applying self-compassion in sport: An intervention with women athletes. *Journal of Sport and Exercise Psychology*, 35(5), 514–524. <http://dx.doi.org/10.1123/jsep.35.5.514>
- Murray, R. M., Coffee, P., Arthur, C. A., & Eklund, R. C. (2019, July 1). Social identity moderates the effects of team-referent attributions on collective efficacy but not emotions. *Sport, Exercise, and Performance Psychology*. Advance online publication. <http://dx.doi.org/10.1037/spy0000178>
- Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2(2), 85–101. <http://dx.doi.org/10.1080/15298860309032>
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass*, 5(1), 1–12. <http://dx.doi.org/10.1111/j.1751-9004.2010.00330.x>
- Nevid, J. S., & Rathus, S. A. (2016). *Psychology and the challenges of life* (13th ed.). New Jersey: John Wiley & Sons, Inc.
- Norcross, J. C., & Lambert, M. J., (2018). Psychotherapy relationships that work III. *Psychotherapy*, 55(4), 303-315.
- Oramas, J. E. (2017). Counseling ethics: Overview of challenges, responsibilities and recommended practices. *Journal of Multidisciplinary Research*, 9(3), 47-58. <http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=b66f0ba7-7862-4e51-b6b0-9354290fb21c%40sessionmgr101>
- Pelletier, L., Fortier, M., Vallerand, R., & Briere, N. (2001). Associations between perceived autonomy support, forms of self-regulation, and persistence: A prospective study. *Motivation and Emotion*, 25(4), 279–306. <http://dx.doi.org/10.1023/A:1014805132406>
- Podlog, L., & Eklund, R. C. (2010). Returning to competition after a serious injury: the role of self-determination. *Journal of Sports Sciences*, 28(8), 819–831.
- Pulido, J. J., García-Calvo, T., Leo, F. M., Figueiredo, A. J., Sarmiento, H., & Sánchez-Oliva, D. (2020). Perceived coach interpersonal style and basic psychological needs as antecedents of athlete-perceived coaching competency and satisfaction with the coach: A multi-level analysis. *Sport, Exercise, and Performance Psychology*, 9(1), 16–28. <https://doi.org/10.1037/spy0000165>
- Rees, T., Alexander Haslam, S., Coffee, P., & Lavallee, D. (2015). A social identity approach to sport psychology: Principles, practice, and prospects. *Sports Medicine*, 45(8), 1083–1096. <http://dx.doi.org/10.1007/s40279-015-0345-4>
- Reis, N. A., Kowalski, K. C., Ferguson, L. J., Sabiston, C. M., Sedgwick, W. A., & Crocker, P. R. E. (2015). Self-compassion and women athletes' responses to emotionally difficult sport situations: An evaluation of a brief induction. *Psychology of Sport and Exercise*, 16(3), 18–25. <http://dx.doi.org/10.1016/j.psychsport.2014.08.011>
- Rhodes, R. E., & Kates, A. (2015). Can the affective response to exercise predict future motives and physical activity behavior? A systematic review of published evidence. *Annals of Behavioral Medicine*, 49(5), 715–731. <http://dx.doi.org/10.1007/s12160-015-9704-5>

- Rocchi, M., & Pelletier, L. (2018). How does coaches' reported interpersonal behavior align with athletes' perceptions? Consequences for female athletes' psychological needs in sport. *Sport, Exercise, and Performance Psychology*, 7(2), 141–154. <https://doi.org/10.1037/spy0000116>
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York: Guilford Press.
- Sarkar, M., & Fletcher, D. (2016). Developing resilience through coaching. In R. Thelwell, C. Harwood, & I. Greenlees (Eds.), *The psychology of sports coaching* (pp. 235–248). London, UK: Routledge.
- Schinke, R. J., Stambulova, N. B., Si, G., & Moore, Z. (2017). International society of sport psychology position stand: Athletes' mental health, performance, and development. *International Journal of Sport and Exercise Psychology*. Advance online publication. <http://dx.doi.org/10.1080/1612197X.2017.1295557>
- Udry, E. (2001). The role of significant others: Social support during injuries. Coping with sports injuries: In J. Crossman (Ed.), *Psychological strategies for rehabilitation* (pp. 148–156). Oxford, UK: Oxford University Press.
- Vitali, F., Bortoli, L., Bertinato, L., Robazza, C., & Schena, F. (2015). Motivational climate, resilience, and burnout in youth sport. *Sport Sciences for Health*, 11(1), 103–108. <http://dx.doi.org/10.1007/s11332-014-0214-9>
- Wagstaff, C. R. D. (Ed.) (2017). *The organizational psychology of sport: Key issues and practical applications*. Abingdon, UK: Routledge.
- Wylleman, P., & Rosier, N. (2016). Holistic perspective on the development of elite athletes. In M. Raab, P. Wylleman, R. Seiler, A.-M. Elbe, & A. Hatzigeorgiadis (Eds.), *Sport and exercise psychology research: From theory to practice* (pp. 269–282). London, UK: Elsevier. <http://dx.doi.org/10.1016/B978-0-12-803634-1.00013-3>
- Zenko, Z., Kahn, R. M., Berman, C. J., Hutchinson, J. C., & Jones, L. (2020). Do exercisers maximize their pleasure by default? Using prompts to enhance the affective experience of exercise. *Sport, Exercise, and Performance Psychology*, 9(3), 405–417. <http://dx.doi.org/10.1037/spy0000183>

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Discussion Questions

1. Can you identify three psychological factors correlating to peak performance for most athletes?
2. According to the self-efficacy theory, what is the relationship between one's evaluation of our own skills and our performance? Do you agree with the theory's tenets?
3. How effective is psychotherapy in your opinion? Substantiate your answer with examples or personal testimonies.

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“The St. Anthony Chapel Fountain at St. Thomas University in Miami, Florida”
2021

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How Do These Symbols Work? Toward a Theology of Symbolic Communicative Efficacy

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Abstract

How are we to make sense of the presence and activity of God in the world today? This important question presumes a Judeo-Christian framework (i.e., God exists and is interested and active in human history), but it also suggests that the response to such a question needs constant reflection and revision in light of new knowledge and new modes of expression from a diversity of contemporary research disciplines. Many theologians have sought to articulate this need for continuity and development in theology.

The following work reflects on the nature of God's relation and activity in the world inspired by Dulles' interest in bringing divergent approaches into conversation with one another.

Despite their different traditions, approaches, and interdisciplinary interlocutors Chauvet and Vanhoozer share a desire to express God's presence in the world. This article engages the work of these thinkers to outline some common orientations in understanding the power of the divine in human history. To accomplish this task, this work first notes of some of the significant differences that exist between the work of Chauvet and Vanhoozer. Then, it discusses the similarities in their proposals for understanding the divine-world relation as developed in the concepts of symbolic efficacy and communicative action, while drawing out the explicitly Trinitarian structure of each of these proposals. Finally, the concluding section of this article offers suggestions for thinking about the efficacy of the sacraments and thus the broader God-world relation.

Keywords: symbolic efficacy, communicative action, efficacy of the sacraments, theology

Introduction

How are we to make sense of the presence and activity of God in the world today? This important question presumes a Judeo-Christian framework (i.e., God exists and is interested and active in human history), but it also suggests that the response to such a question needs constant reflection and revision in light of new knowledge and new modes of expression from a diversity of contemporary research disciplines. Many theologians have sought to articulate this need for continuity and development in theology. Avery Dulles (1992) is one such theologian who appealed to the value of thinking of theology as methodical reflection on God's revelation symbolic communicated to the church (p. 45). While appreciative of the contributions of theological systems like those of Aquinas, Calvin, Barth, and Rahner, he was explicit about their limitations. Instead, he argued for the importance of proponents of various systems to enter into communication with one another and avoid the tribalism that so frequently can develop as a result of these systems (Dulles, 1992, p. 43). This includes drawing insights from fields such as philosophy, sociology, literary theory, and other academic disciplines that engage it reflection on culture and ultimate human concerns.

The following work reflects on the nature of God's relation and activity in the world in light of Dulles' interest in bringing divergent approaches into conversation with one another. This conversation results in articulating some common orientations that are valuable for understanding the God-world relationship. In the process, the work brings the thought of two divergent, yet highly influential theologians into conversation with one another. Louis Marie Chauvet is a Roman Catholic priest whose scholarly career at the *Institut Catholique* is rooted in sacramental theology. His treatise *Sacrament and Symbol: A Sacramental Reinterpretation of Christian Existence* offers a response to neo-scholastic sacramental method in conversation with Martin Heidegger's critique of onto-theology for understanding sacramentality. Kevin Vanhoozer, engages postmodern philosophy and literary theory in an effort to reassert God's self-communication to the world through the inspired Word. In his 2010 publication, *Remythologizing Theology: Divine Action, Passion, and Authorship*, Vanhoozer expands on his project of articulating revelation in Sacred Scripture as a communicative act that involves the author, text, and readers in the dramatic unfolding of meaning in God's revelation.

Despite their different traditions, approaches, and interdisciplinary interlocutors Chauvet and Vanhoozer share a desire to express God's presence in the world. This article engages the work of these thinkers to outline some common orientations in understanding the power of the divine in human history. To accomplish this task, this work first notes of some of the significant differences that exist between the work of Chauvet and Vanhoozer. Then, it discusses the similarities in their proposals for understanding the divine-world relation in the concepts of symbolic efficacy and communicative action, while drawing out the explicitly Trinitarian structure of each of these proposals. Finally, the concluding section of this article offers suggestions for thinking about the efficacy of the sacraments and thus the broader God-world relation.

I: Chauvet and Vanhoozer: Clashing Theoretical Frameworks

At first glance, Chauvet and Vanhoozer certainly make odd bedfellows for a work addressing the sacramental implications of contemporary Trinitarian Theology. However, it is precisely their striking differences and surprising similarities that make the two such an interesting pair. These differences are disciplinary, confessional, contextual, and theological in nature. Chauvet is a post-modern French Roman-Catholic priest and sacramental theologian, whose primary concern in *Symbol and Sacrament* is to overcome the onto-theological framework that is often characteristic of Catholic reflection on the sacraments since the high Middle-Ages. As such, his work is deeply critical of the inherited interpretations of Thomistic theology, which he views as depicting God as a static and distant being who institutes through Christ the sacraments as objectively efficacious and as ‘very narrow ducts’ that ‘assure passage’ from the world to the reign of God (Chauvet, 1995, pp. 410-411). While he also recognizes the danger of a ‘subjectivist impasse’ in contemporary approaches to the sacraments that view them solely as human expressions and thus not as ‘events of grace,’ the bulk of his magnum opus is dedicated to overcoming the objectivism that continues to pervade the sacramental consciousness of many (Chauvet, 1995, pp. 416-424).¹³³ Although *Sacrament and Symbol* is clearly a work of Roman Catholic sacramental theology, Chauvet proposes in it a fundamental revision of sacramental theology in a framework that focuses on the relational power of symbolic exchanges and the capacity of ritual to bind a community to one another and to the divine. Thus, the thorough critique of the influence of onto-theology on the history of Roman Catholic sacramental theology found in the opening chapters of this work serves as a call for an increased appreciation for mystery and relationality in theology.

Vanhoozer, in contrast, is a post-modern Reformed, Evangelical systematic theologian. His concern in *Remythologizing Theology* is to construct a biblically based *theo-ontology* that is capable of describing God’s action in the world in response to Bultmann’s project of demythologization and the ‘new kenotic-perichoretic relational ontotheology’ (Vanhoozer, 2010, pp. 139-78). Vanhoozer uses this term to denote the new ‘relational consensus’ in treatments of the doctrine of the God. He characterizes this consensus as (1) the efforts to replace the category ‘substance’ with the category ‘relation’; (2) the emphasis on the kenotic action of God found in divine suffering on the cross; and (3) the focus on God’s love as suffering with humanity. Nonetheless, as we shall see, Vanhoozer’s work does not simply dismiss the concerns of kenotic-perichoretic relationalists. Rather, he seeks to incorporate the best of their insights into his own proposals for a communicative action model of the divine-world relation. Nonetheless, Vanhoozer is deeply critical of theological approaches that seek to limit the divine to human categories apart from the God’s self-communicating Word (mediated through Jesus Christ and scripture mediate them).

Clearly, then, the two theologians and their works are quite different. First, Chauvet’s *Sacrament and Symbol* addresses God’s relation to the world in the framework of a work Roman Catholic sacramental method that is intended primarily to correct a troublesome approach to the sacraments (Chauvet, 1995, pp. 419-24, 538-43).¹³⁴ Vanhoozer’s *Remythologizing Theology* is a

¹³³ Most interestingly, Chauvet on more than one occasion engages polemically with the “non-sacramental theology” of Karl Barth who is a major conversation partner for Vanhoozer’s post-Barthian Thomistic reconstruction of a theo-ontological metaphysics. This author shares Chauvet’s concerns with the subjectivism inherent in Barth’s theology of the sacraments, which is implicit in the work of Vanhoozer.

¹³⁴ Chauvet’s main concern is the perduring influence of a Neo-Scholastic understanding of the

work of biblical and systematic theology focused primarily on responding to recent trends in liberal Protestantism. This speaks to the difference in disciplinary and interdisciplinary approaches between the two authors. Second, confessional differences exist between the two theologians. These confessional differences are most obvious in their focal point for understanding the God-world relation. Vanhoozer finds the most significant example of God's activity in the world in Sacred Scripture. Here, God is able to engage and affect people most palpably. Chauvet sees the sacraments, pre-eminently the Eucharist, as the most important locus for studying divine action. One of the tasks, of this essay is to demonstrate the common ground that the two authors share in understanding divine presence in the world. Thirdly, Chauvet and Vanhoozer take opposing positions on recent conversations regarding relationality in the doctrine of God. According to Vanhoozer, many recent attempts at developing a relational theology have gone too far and as have introduced the unbiblical and anthropomorphic principle of change into the doctrine of God. Chauvet, in contrast, while not directly addressing what Vanhoozer calls the new relational consensus, develops a view of sacramental theology that seeks to introduce a greater degree of relationality from both the human and the divine side of the equation. Nonetheless, the two theologians are not directly engaged with one another and because they each provide a treatment of this topic that is nuanced this difference is not as great as it might first appear. Finally, while each of these influential thinkers draws deeply upon his theological training, they also make distinctive use of interdisciplinary dialogue partners. Chauvet draws upon philosophical critique of onto-theology of Martin Heidegger as well as contemporary philosophy of language. Vanhoozer, in contrast, draws upon the insights of dramatic and literary theory – most notably those of Mikhail Bakhtain.

The contrasting backgrounds and concerns of Chauvet and Vanhoozer are what make them such interesting and fruitful conversation partners.. On the one hand, each theologian is critical of the other's approach as a part of his theoretical framework and core commitments. On the other hand, each of them is appreciative of the major concerns of the other to some degree. Further, both Vanhoozer and Chauvet are deeply concerned with developing a post-modern expression of divine action through the lens of a symbolic communication that is also faithful the Christian tradition. The next section of the article seeks to develop these proposals in greater detail.

II: Symbolic Communication: A Hermeneutical-Linguistic

Approach to the God–World Relation

The purpose of this section is to describe the similarities the doctrine of the God–world relation in Chauvet and Vanhoozer. The preceding section focused on the differences between the two by discussing on disciplinary, confessional, and interdisciplinary, and theological commitments. This section discusses in greater detail the work of Chauvet and Vanhoozer, highlighting Chauvet's notion of symbolic efficacy and Vanhoozer's idea of communicative activity and treats the commonalities in their approaches.

Chauvet's Symbolic Efficacy

sacraments in the church and among the faithful. Nonetheless, it is important to note that at several points Chauvet addresses a Barthian approach to the sacraments.

Chauvet does not write directly on the subject of the divine-world relation in a way that is distinctive from the way it is addressed in Trinitarian theology or in the dialogue between science and religion. Nonetheless, this theme is very much at the core of his theological interests in developing a notion of sacramental grace grounded in symbolic efficacy. After all, Roman Catholic sacramental theology grows out of a particular understanding of God's grace as mediated through symbol and ritual. Chauvet's develops his approach to the grace of the sacraments in explicit contrast to a Thomistic and Neo-Scholastic understanding of the sacraments as instrumental, efficient causes of grace. He argues that such an understanding of grace, particularly as received in early twentieth century Roman Catholic Neo-Scholasticism, is far too mechanistic in its approach (Chauvet, 1995, p. 425). The language of instrumental causality led to a popular understanding of the sacraments as guaranteeing the grace with which they are associated. This commitment accompanies his rejection of onto-theological reasoning which has supported the mechanistic view of the sacraments that his work seeks to overcome. While sacramental theology since the Second Vatican Council has endeavored to correct this rigid and narrow understanding of the sacraments, Chauvet's own work contributes to a renewal of sacramental method and contributing a concept of sacramental grace that is based in linguistic theory and ritual studies.

Chauvet's explicitly sacramental approach to discussing the God-world relation is developed through the notion of symbolic efficacy, which is central to his work. Symbolic efficacy understands the work of grace in the sacraments as mediated through the power of symbols to both express and connect persons. Chauvet defines symbols, as distinct from signs, as expressive media that consider the very subjects involved in account (Chauvet, 1995, p. 110). Thus, in a manner reminiscent of Rahner, Chauvet develops a metaphysically rich understanding of symbols as expressing the very being of the realities they mediate (Rahner, 1966). He further argues that Christianity finds effects in its ritual symbols that move beyond the corporeal into the realm of value (Chauvet, 1995, p 139). The Christian community seeks these value-laden effects and participation with the divine in the symbolic enactment of the sacraments is the result of sacramental grace.

Chauvet defines sacramental grace in the following manner:

We must say, then, that 'sacramental grace' is an *extra-linguistic* reality, but with this distinction, in its Christian form it is comprehensible only on the (intra-linguistic) model of the filial and brotherly and sisterly alliance established *outside of us (extra nos)* in Christ. Despite grammar, which never should be taken at face value, 'grace' designates not an object we receive but a symbolic work of *receiving oneself*: a work of 'perlaboration' in the Spirit by which subjects receive themselves from God in Christ as sons and daughters, brothers and sisters (Chauvet, 1995, p 140).

Four elements of this definition need elaboration.

1. Grace is to be understood not along a metaphysical model of cause and effect, but according to the 'symbolic scheme of communication through language, a language that is supremely effective because it is through language that the subject comes forth in its relations to other subjects, within a common world of meaning' (Chauvet, 1995, pp. 139-140).

Rather than continuing the tradition of reflecting on the sacraments as efficient causes of grace and supporting the view of the sacraments as mechanically assuring grace as an object to be received, Chauvet constructs an understanding of sacramental grace from the relationality of language. He argues that language expresses the mode of symbolic exchange is a better fundamental framework within which to describe the efficacy of the sacraments than the commercial notion of exchange that frequently accompanies the concept of efficient causality. In commercial exchange, an understanding of an object's practical, social, or monetary worth are fundamental to determining its value. Trading objects of basically equal value establishes an exchanges in the commercial model. However, the practice of gift-giving breaks down this logic. Chauvet points to gift-giving as a mode of exchange that breaks the logic of this commercial mode of exchange. Gift-giving accomplishes this precisely because a gift is not measured as a function of its commercial value. For example, when one offers a rose or a book as a gift to a lover or a friend, the symbolic value of the gift extends well beyond the commercial value of the object offered. Further, gifts are offered in a completely gratuitous manner. When one truly offers a gift, nothing is expected in return. The gift is offered freely without reference to the commercial value of the symbolic object offered. Rather, the value of the object is established primarily in relational terms.

2. For Chauvet God affects sacramental grace through the illocutionary modality of liturgical language and the performative nature of sacramental formulas.

Chauvet argues that the language of faith is particularly suited to the illocutionary dimension of language because it is predominantly self-implicative. The illocutionary dimension of language refers to the element of discourse that is not communicated in the words alone. Thus, when Christians recite the words of the Creed or pray the Our Father, they are doing more than simply recounting a formula. They are making a statement of their faith and turning themselves to God in prayer. These words then are not simply words; they are actions that are carried out uniquely in speech. Those involved in the language game of faith necessarily take a stand by way of either assent or proclamation. This illocutionary modality expresses itself in other games in which the language of faith is diversely expressed (theological language, the language of mystical experience, etc.). However, the more the language of faith expresses itself through the character of testimony, the more the self-implicative language of faith becomes evident. Thus, by the gesture of the pouring of the water makes visible the sacramental formula, 'I baptize you...' and the formula involves the participants in the enacted language. 'As the cornerstones of the architectonic structure of the Christian celebrations, sacramental formulas, with their eminently performative character joining gesture and word to show their operative goal, are the symbols which are the repositories of the *illocutionary dimension of the whole of ritual language and, beyond that, of faith language*' (Chauvet, 1995, p. 430).

3. Sacramental grace is the embodiment of the process of human participation in the divine life of the Trinity as sons and daughters, brothers and sisters.

As a consequence of the self-implicating nature of ritual language, the sacraments act as both revealers of grace (insofar as they are operators) and operators of grace (insofar as they are revealers). Consequently, the grace of the sacraments is not so much something external that we receive, as it is a self-reception that comes about through the communal 'we' created by the absent-present God found in a relation of filiation in the Son through the Spirit. From the human side, receiving oneself in sacramental grace involves both gift and participation. It means the transformation of the identity of the individual believers into the body of Christ precisely through their self-implicating illocutionary acts. From the divine side, sacramental grace affirms in faith that 'the risen Christ continues to take flesh in the world and in history and that God continues to take flesh into human corporeality. Thus the body is acknowledged to be the place of God' (Chauvet, 1995, p. 490). This divine embodiment of God in the community is achieved through the agency of the person of the Spirit who attracts the world to the risen Christ by simultaneously hiding its presence in the world (Chauvet, 1995, p 530).

4. The writings of twentieth century philosophers – especially Martin Heidegger and J. L. Austin – deeply influence Chauvet's articulation of sacramental grace.

The description of Chauvet's in this article notes his acceptance of Heidegger's critique of onto-theology. Heidegger (1969) argued that the history of metaphysics was characterized by a series of systems which flattened the richness and abundance of Being (pp. 42-74). When brought into Chauvet's theology then, he is arguing that Neo-Scholastic attempts to understand the sacraments flatten God's grace and result in a mechanistic view of their efficacy. He then turns to the philosophy of J. L. Austin to aid him in his move away from an overtly metaphysical framework. Austin (1962) observed the capacity of words to effect change in another – which he called perlocutionary acts (p. 101). For example, in the sentence 'The ice is thin,' the speaker may be able to influence listeners not to go out on the ice. In describing sacramental grace as 'perlaboration' of grace, Chauvet (1995) avoids language about grace as a thing that the person of faith receives mechanistically and instead views it as the impact of a person (viz. the Holy Spirit) influencing the individual through the words and actions of the sacraments (p. 140).

This review of Chauvet's theology of sacramental efficacy and sacramental grace demonstrates that he understands the Christian sacraments as ritual and symbolic avenues of communication with the divine that have the capacity to affect real change in the community in terms of how its members relate to themselves, one another, and the divine. Moreover, this review speaks to Chauvet's understanding of the capacity that symbols and linguistic analysis have to reveal and clarify the experience of the invisible and ineffable power of God in concrete lives of Christians and in the broader flow of history. Chauvet also demonstrates his interdisciplinary interests by drawing on contemporary philosophy to move away from what he views as stagnation in modernist interpretations of the sacraments. While not without its limitations, Chauvet's theology of symbolic efficacy has great significance and explanatory power for contemporary discussions about God's activity in the world. It will be necessary to return to this theme, but only after a discussion of Kevin Vanhoozer's recent work.

Vanhoozer's Understanding of Communicative Activity

Vanhoozer develops doctrinal and metaphysical approach to the God – world relation through his notion of communicative action. In response to the developing consensus of kenotic-perichoretic relational ontologies that reject the metaphysical and find it difficult to speak of God's action in the world, Vanhoozer develops the claim that God is understood best as the paradigmatic communicative agent who brings about communion between God and the world.

1. Vanhoozer grounds notion of communicative action in what he calls a post-Barthian Thomism that stands in stark contrast to the metaphysical agnosticism of authors such as Bultmann – and by extension Chauvet.

Vanhoozer reasserts the notion that God's being is an *actus purus* and uses this position to argue that Being-in-act spills over into self-communicative action, following aspects of the work W. Norris Clarke (Vanhoozer, 2010, p. 224). He cites approvingly Aquinas' claim that 'It is in the very nature of every actuality to communicate itself as far as it is possible' (Aquinas, Thomas, *De Potentia*, q. 2, art. 1). The result is that communication through words, gestures, and symbols is a fundamentally metaphysical principle. However, the Barthian emphasis in Vanhoozer's metaphysical commitments leads him to reject the *analogia entis*¹³⁵ as an idolatrous human effort to reach the divine *a priori* rather than follow the self-communication of the divine *a posteriori* in Christ and in scripture. Thus, emphasis must always be placed on God's radical otherness, the vast divide that exists between the creator and the cosmos, and God's radical freedom. Conceptually, Vanhoozer connects the *analogia entis* with Bultmann's project of demythologization, which entails the rejection of the metaphysical for an emphasis on the immanent power of the word to transform lives existentially.¹³⁶ Further, Vanhoozer argues that following the methodological paths opened by the *analogia entis* (any of them) means playing directly in the hands of those, like Ludwig Feuerbach, who argue that the idea of God is simply a projection of the human desire for perfection.

The Russian literary theorist, Mikhail Bakhtin, is an important interdisciplinary interlocutor for Vanhoozer in his discussion of communicative action (Vanhoozer, 2010, pp. 297-337). In contrast to the classical Thomist approach of viewing God's communicative action as taking place through the *analogia entis*, Vanhoozer develops the notion of the *analogia auctoris* (the analogy of authorship). Just as an author creates a text and a world through their words or speech, so too does God create a plane where the narrative drama of salvation history can unfold. However, how is one to understand authorship? Bakhtin (1984) contrast two forms of authorship monological authorship – typical of the writings of Leo Tolstoy – and polyphonic authorship – typical of Fyodor Dostoevsky's works (pp. 69-75). In monological authorship, all of the characters and themes of the novel are at the disposal of the author to announce their voice. Polyphonic authorship, however, allows the characters of the drama to have their own thoughts, opinions, and autonomy. Vanhoozer, understands God's authorship along the lines of polyphony - God's creative

¹³⁵ The *analogia entis* (analogy of being) is the medieval theory that humans can understand God analogously through creation. This position is typical of Roman Catholic theology, but Reformed theology often rejects this theory because it is seen as a violation of God's total transcendence and the idea that humans can only know God through revelation.

¹³⁶ Vanhoozer's notion of remythologizing refers to his efforts to allow divine self-communication offered in the scriptures to transform the modern and post-modern cultural mythos, rather than vice versa.

action in history allows humans autonomy and freedom without dominating creation with his will. Nonetheless, Vanhoozer (2010) argues against the relational-kenotic consensus that God remains active in the details of creation – pushing back against a form of contemporary deism (pp. 331-337). The effect in drawing upon interdisciplinary conversation partners, like in Chauvet, is to free up the notion of God from overly rigid and deterministic modes of expression.

2. Communication is ‘the process of sharing (making common) something (e.g., beliefs, worries, pleasure, views, memories, hopes, demands, ideas) with someone (an interlocutor) for some end by some symbolic means (e.g., language, gesture, pictures).’ Therefore, communication action (and being itself) possess a fundamentally symbolic nature (Vanhoozer, 2010, p. 212).

Despite his rejection of the *analogia entis*, Vanhoozer’s dependence upon Ricoeur and other contemporary philosophers of language leads him to espouse the fundamentally symbolic nature of divine being and action. Thus, he favors the *analogia dramatis* as a corrective to the *analogia entis* because it proceeds from the revealed divine self-communication in Christ rather than from nature (Vanhoozer, 2010, pp. 196-197).¹³⁷ For the present discussion, this move is particularly interesting and important because it provides a possibility for developing a robust notion of sacramentality (which does not otherwise fit into Vanhoozer’s confessional context) and an important point of convergence with Chauvet’s emphasis on embodiment. At the same time, Vanhoozer’s insistence on the necessity of a theo-ontology for theological reflection provides an important check to prevent Chauvet’s approach from unraveling into a pure subjectivism.

3. The Trinitarian persons are the paradigmatic models of self-communicative activity.

The insistence that the Trinitarian persons are the primary models of being demonstrate the complexity and nuance of Vanhoozer’s work can be found more explicitly in his. ‘It is persons, after all, who are best at presenting themselves through communicative activity to others’ (Vanhoozer, 2010, p. 225). Thus, he argues that relationality is as intrinsic to being as substance and that the intersubjectivity of the divine persons is fundamental to avoiding onto-theology (as opposed to theo-ontology).¹³⁸ Consequently, Vanhoozer accepts one of the foundational concerns of the kenotic-perichoretic relationality. Namely, that for at least the last five hundred (if not fourteen hundred) years theological reflection has been dominated by the notion of God as a divine substance to the neglect of relationality and intersubjectivity. The consequence this is an emphasis on divine unity (and hegemony) at the expense of the personal distinction (and diversity) within the theological reflection. Vanhoozer’s emphasis on divine personhood and relationality thus might allow him to agree with at least some of the concerns that lie behind Chauvet’s critique of onto-theology and of the objectivist impasse in sacramental theology.

¹³⁷ “Drama” is an important category for Vanhoozer that speaks to God’s role as author, narrator, and protagonist in the events of history and revelation. This role often connects to God’s illocutionary acts, such as promising, electing, and even creating.

¹³⁸ With the term “onto-theology,” Vanhoozer is accepting the critique of conflating philosophy and natural theology. However, instead of arguing for the independence of philosophical existentialism, he uses this term to insist on the need to order all thought to the God who has revealed himself in the Word.

4. The goal of God's communicative agency is theodramatic participation: the participation of humanity with the Triune God in Christ and through the Spirit (Vanhoozer, 2010, pp. 289-294).

Vanhoozer's argues that the goal of God's communicative action is human communion and participation in the divine life of the Trinity in Christ and through the work of the Spirit. However, his understanding of this participation differs from the understanding of participation that Chauvet develops. As we saw earlier, Chauvet's notion of symbolic efficacy depends upon the human capacity for the divine and for profound transformation through the reception of one's identity as divine son or daughter through participation in the rites. This transformation takes place at the most profound level of the individual's existence. However, for Vanhoozer, such a radical degree of participation in the divine life risks a rupture in the creator-creature distinction and constitutes an idolatrous grasp for the properly divine. The creator-creature distinction thus allows humans to become daughters and sons of God *by adoption*, but prevents us from becoming truly brothers and sister of Christ. He writes, 'To remythologize 'being in Christ' is to think about union not with the divine nature, but with the divine person and work of the Son. It is not the substance, but the history (*mythos*) of Christ of which we must partake: 'For we have come to share in Christ, if indeed we hold our original confidence firm to the end. As it is said, 'Today, if you hear his voice, do not harden your hearts as in the rebellion' (Vanhoozer, 2010, p 289). He envisions this communion with Christ as eschatological, medial, covenantal, dialogical, sapiential, and ecclesial, but not as substantial (Vanhoozer, 2010, pp. 289-294). This position is rooted in Vanhoozer's understanding of the union of Christ's two natures and the *communication idiomatum* but there is not sufficient space to developed here. Nevertheless, it is clear that a real, and in the end unbridgeable, divide between Chauvet's understanding of symbolic efficacy and Vanhoozer's notion of communicative action lies ultimately in their radically different anthropologies.

III: Toward a Theology of Symbolic Communicative Efficacy

This last section has briefly sketched the implications of bringing Chauvet and Vanhoozer into dialogue for a constructive proposal of God's action in the world. The remainder of the work seeks to draw upon these elements to propose a framework for the development of a theology of symbolic communicative efficacy.

The term 'symbolic communicative efficacy' expresses the nature of God's sacramental activity in the world and its capacity to affect real change or conversion. The word 'symbolic,' as opposed to sacramental, reflects a broader ecumenical appeal and a capacity to encompass both Word and Sacrament. More importantly, contributions by theologians such as Karl Rahner and Avery Dulles have demonstrated the ontological depth of the term and the idea that symbols participate in the realities that they represent (Rahner, p. 223; Dulles, pp. 50-52). In this sense, symbols as visible signs of an invisible reality embody the ability of an invisible God to be present in time and space. 'Communicative' draws upon Vanhoozer's articulation of the power of speech acts and theodramatic participation. God reveals his nature to humanity and reconciles the world to himself through the communication of nature. In the process, he binds humanity to himself and effects change by taking up common cause with creation. These symbolic and revelatory acts, however, are always embodied. Communication is only complete when its recipient acts upon it. Likewise, the capacity of a symbol to make the invisible manifest depends upon its use. The notion

of symbolic communicative efficacy offers a way to understand sacramental efficacy and by extension a way that to understand God's ability to affect change in the world.

To draw out the fullest implications of this concept and to tie its framework to broader conversations about the God–world relation would take a much longer work. Here it is sufficient to outline certain constitutive elements that the earlier engagement with Chauvet and Vanhoozer suggest. While each of the elements outlined below require further development, they provide the basis for a distinctive proposal to God's activity in the world that is the fruit of ecumenical dialogue.

1. The sacraments are the paradigmatic examples of God's activity in the world today.

If the Christian community seeks reflect profoundly upon God's activity in the world, this reflection must take place through the sacramental life of the church and the world. In particular, the concrete practices of baptism and Eucharist are the embodiment of the transcendent God's presence in the world and the memorial of God's presence and absence. These practices, in all of their diverse historical and cultural forms, are the primary locus for reflection upon the Triune God's interaction with the church and the world. As such, any general theology of divine action must take the sacraments as its point of departure, just as any theology of the Trinity must begin with reflection on the revelation of the Triune God in the concrete life and work of Jesus. Chauvet's emphasis on the sacraments as embodiments of symbolic exchange and of the realm beyond value ought to convince us of their centrality for understanding God's gift of humanity to itself and indeed God's gift of existence to the cosmos. This insight corresponds nicely with Vanhoozer's emphasis on beginning with the special metaphysics of the divine to elucidate a general metaphysics. While ultimately there no true conflict between the truth of God's relation to the world as revealed in the sacraments and the truth of God's relation to the world as revealed through the natural and human sciences, beginning from secular disciplines risks leaving God and God's self-communication out the equation completely.¹³⁹

2. 'I can do all things – even metaphysics! – through Christ who strengthens me (Phil. 4:13)' (Vanhoozer, 2010, pp. 197-198).

If we are to speak of God's revealing and gifting humanity to itself (with Chauvet), then we must dare to speak ontologically (with Vanhoozer). This entry into the realm of metaphysics must take seriously the warnings against anthropomorphism developed in diverse ways in both Chauvet and Vanhoozer. One way that this can be accomplished is by focusing on the self-communication of God in the person of Jesus. This self-communication must be understood in the context of its own historical particularity and developed out of a notion of divine personhood that is committed to relationality as an essential metaphysical principle. At the center of both Chauvet and Vanhoozer's work is their desire to speak to the vibrant ways that God relates to humanity, whether that be in salvation history as expressed in the biblical narratives or in the sacraments as the continuation of God's active presence in history. In accepting the Heideggerian critique of onto-theology, as both at least implicitly do, it is clear that theologians cannot simply return to a Platonic, Aristotelian, or Thomistic metaphysics that fails to make relationality an ontological

¹³⁹ This claim, of course, is not that interdisciplinarity is not valuable and in fact necessary for providing an adequate theological framework. Instead, it observes that the starting point must remain revelation.

principle. Thus, theologians must attempt to philosophically and theologically express the metaphysical principles that are laid out in the biblical narratives and as they are implied in the Christian understanding of God.

At the same time, both Chauvet and Vanhoozer, point out the importance of humility in this process. Critical theory has helped point out that foundationalism and metanarratives can at little more than attempts to consolidate and support authoritarian structures. Anthropomorphism can allow theological depictions of the divine devolve into little more than projections of human hopes and aspirations. And the ossification of religious language and metaphors can easily become a rationalization for oppression. Nonetheless, to cease speaking of the divine and the implications of the existence of God for all that exists is atheism. Instead, a Christian metaphysic is based in the self-communication of God in the person of Jesus Christ, must point to the proleptic and provisional basis of our knowledge that will only reach its perfection in the future. An ontology that takes its cue from the eschatological nature of revelation and the preaching of the kingdom of God helps to avoid the dangers of foundationalism and allow for a greater emphasis on relationality.

3. Symbols communicate with and participate in the subjects they represent.

Chauvet and Vanhoozer each in their own way speak eloquently of the capacity of symbols to mediate the divine. Chauvet does so explicitly and at length in his discussion of rituals and their unique ability to communicate value. Vanhoozer does so in his analysis of divine communication as mediated in (symbolic) word and deed. What they share is a focus on the capacity that symbols have to communicate and reveal the divine. A theology of symbol thus is a way to help close the gaps between epistemology and ontology, between the corporeal and the spiritual. Epistemologically, symbols allow us to know someone or something because they reveal realities that are otherwise unknown. Just as words reveal and embody the hidden realities of thoughts, symbols communicate being that cannot otherwise be shared. They thus communicate real truth and real being.

Symbols, including analogies, metaphors, and rituals, thus speak to a kind of sacramentality, because they involve a way of being in body. Whether that body is a word or an action, it has the capacity to convey real meaning without exhausting all its meaning. While more needs to be said about this in the next point, it is clear that they mediate spiritual realities in ways that are embodied. For this reason, symbols can become ways that humans to enter into relationship with another, just as the Christian community is gathered in the ritual action of breaking open the Word and living out its meaning.

An attempt to express God's action in the world as symbolic communicative efficacy is able to draw upon the revelatory quality of symbols to help articulate the manner of divine activity in the world. Reflection on symbols can help to explain how the immaterial can be present and active in a material world. It can also aid in working out the way that these actions can have multiple causes since they allow for the participation in the process of making meaning and developing relations.

4. The goal of God's symbolic communicative action is real human participation in the divine life. This involves a transformation of human persons and human nature at the most fundamental level through the incarnation.

An essential element of the Christian faith is the profound dignity of the human person grounded in the *imago dei* and the incarnation as personally, naturally, and substantial restorative of this image. Consequently, a theology of God's symbolic communicative efficacy must have as its goal a radical conversion, transformation and liberation of humanity which grows out of participation in the divine life. While human participation in the divine life of the Trinity cannot be necessary for God, a theology of human participation nonetheless must appreciate the profound personal union of humanity and divinity in Christ that is communicated to us through the work of the Spirit. Further, this notion of participation emphasizes that God's activity in the world takes place in such a way that it is not completely separate from contingency and human freedom. Rather human beings are co-creators with God and aid in the process of establishing the kingdom of God.

As noted above, metaphysical systems can contribute to authoritarian structures that do more to ensconce the power of a select group at the expense of the full human flourishing. This has been accomplished at times through claims to ultimate truth that are then used as a tool to attack those with a different perspective. However, the symbolic does not allow for this kind of absolutism this side of the eschaton. Symbols provide access to real, reliable knowledge about the divine, but they do so in a way that is always relational and not absolute. Further, the symbols are always in need of further explanation and qualification. As a result, a theology of symbolic communicative efficacy undermines those who seek to absolutize truth and use it as a club to beat over the heads of those who see the world differently. Communication is always in need of further clarification or elucidation, despite that fact that the simplest statements can speak profoundly.

5. God's symbolic communicative efficacy in the sacraments and in the world is profoundly eschatological.

The personal interaction between the Triune God and humanity embodied in the sacraments has as its goal human participation with the divine who establishes the reign of God on Earth. This reign is individual and communal, immanent and future. In transforming individuals and liberating the Christian community, the result of this human participation in God's symbolic communicative action is both individual and communal. Further, God's relation to the world makes real changes in the here and now, but always points to a future where the effects of sin and corruption no longer hold back the process of authentic human and social development. This eschatological dimension of the divine-world relation is also part of the consistent witness of the Christian community. Chauvet develops this eschatological dimension when he speaks of the sacraments as memorials of Jesus Christ which demonstrates continuity in God's interaction with world in the past, present and future (Chauvet, 1995, pp. 546-547). Vanhoozer too expresses the importance of the eschatological dimension of divine communicative action when he speaks of the eschatological consummation of God's authorial role in history (pp. 328-329).

Conclusion

Despite the serious confessional, disciplinary and philosophical differences between Chauvet and Vanhoozer, both authors share a confidence in the ability of linguistic and symbolic analysis to describe divine action and the God–world relation. Through the process of reflecting on these similarities and differences this work has suggested as framework for understanding the God–world relation through the concept of symbolic communicative efficacy. Such a framework emphasizes the interplay between God and the world by reflecting on the Christian sacraments as paradigmatic examples of God’s ontologically real activity in creation and humanity’s participation with creative symbolic process as it unfolds in the fullness of history. While the brevity of this work certainly precludes a full treatment of these themes, it has hopefully provided its readers with an entry into the contributions made by each of these important contemporary voices and suggested a path for future development.

References

- Austin, J. L. (1962). *How to do things with words* (2nd ed.) (M. Sbisà and J. O. Urmson, Eds.), Oxford, UK: Oxford University Press.
- Bakhtin, M. (1984). *Problems of Dostoevsky’s poetics* (C. Emerson, Trans.). Minneapolis, MN: University of Minnesota Press.
- Chauvet, L. M. (1995). *Sacrament and symbol: A sacramental reinterpretation of Christian experience* (P. Madigan and M. Beaumont, Trans.). Collegeville, MN: Liturgical Press.
- Dulles, A., S.J. (1992). From symbol to system: A proposal for theological method. *Pro Ecclesia*, 1(1), 42-52.
- Heidegger, M. (1969). *Identity and difference* (J. Stambaugh, Trans.). New York: Harper and Row.
- Rahner, K. (1966). On the Theology of the Symbol, in *Theological investigations* (Vol. 4): More recent writings (K. Smith, Trans.) (pp. 221-252). Wairoonga, Australia: Helicon Press.
- Vanhoozer, K. J. (2010). *Remythologizing theology: Divine action, passion, and authorship*. Cambridge Studies in Christian Doctrine. Cambridge, UK: Cambridge University Press.

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Discussion Questions

1. How do the different interdisciplinary interlocutors' impact Chauvet's and Vanhoozer's approach to the divine world relation?
2. A central argument of the work is that reflection on the power of language to effect real change is a helpful way to think of the impact of the immaterial on the material world. Do you agree with this assertion?
3. In Catholic Neo-Scholastic theology, the power of worship was discussed in terms of the Aristotelian concept of efficient causality. Do you find efficient causality or symbolic communicative efficacy as a more fruitful way of understand the divine world relation in the contemporary period?

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Student Corner

Investor Psychology: Behavioral Biases having an Impact on Financial Decisions

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Abstract

Behavioral finance analyzes human psychological influences on decision-making to help us better understand financial outcomes. This article reviews various behavioral biases and their effect on the decision-making process. It addresses the role emotions play in financial decisions and explains the significant function neuroscience plays in economic and financial environments. Furthermore, the article explores whether investors are reluctant to take risks, both in terms of how they rate their risk inclination and their behavior in choosing between alternatives with various risk levels, and whether they display regret aversion and overconfidence biases. This article demonstrates that recognizing psychological biases in investment decisions and taking proper actions to fix such errors can reduce effects and improve outcomes.

Keywords: Behavioral biases, emotions, investment decisions, finance, investor

Introduction

Vast behavioral research shows that an individual's emotional status may have a huge effect on the decision-making process (Elster, 1998; Hermalin & Isen, 2000). The limit on human cognitive processing is one characteristic of personal psychology that has received much of attention. People have limited capacity to process and retrieve data. In certain circumstances, psychologists say that these barriers result in distorted choices. Analysts believe that as people develop, habits that often help them make the right choices properly, these habits can lead them to wrong choices (Ackert, Church, & Deaves, 2003, pp. 33-41).

Successful financial planning and investing is much more complicated than just numbers and understanding the latest market trends. Cognitive and emotional weaknesses affect not only

our everyday lives but also our investment decisions. “Individuals who are unable to master their emotions are ill-suited to profit from the investment process,” said Benjamin Graham the father of security research (Baker & Ricciardi, 2015). Many investors often allow psychological prejudice and emotions to affect their investment decisions, which results in significant harm to their capital (Baker & Ricciardi, 2015, pp. 22-23).

Traditional finance theory assumes that decision-makers evaluate all possible outcomes, carefully process information, and make rational decisions that maximize wealth, or utility, or both. In contrast, behavioral finance analyzes how real people behave in a financial setting. Based on behavioral finance, people may not always be “rational,” and emotions and biases play a role in people’s financial decisions (Baker & Nofsinger, 2002, pp. 97-98). Richard Thaler (2005), an expert in behavioral science and the 2017 recipient of the Nobel Prize in Economic Sciences, finds that people often lack self-control, are self-contradictory in how they value things, have an outsized fear of losses, and overreact to bad news. Thaler (2005) found that even though we may know what is best for us when it comes to our finances, we can make inconsistent decisions.

Our emotions overbalance what is rational, and often we want what is immediately in front of us, even though we know it is better if we wait. A study by Dalbar (Roberts, 2015), which is the leading independent specialist in the financial industry for evaluating and auditing, showed that between 1987 and 2016, the average investor earned 2.6% annually despite a 10.2% gain in U.S. stocks, a 6.3% uptick in government bonds, and a 5.4% return in international equities. An Oppenheimer Funds report claims that the major threat to the rate of return on investment is emotion and money lost to fear and greed (Ruedi, 2020).

Behavioral finance became a field of study because observed behavior differed from the rational theories’ prediction. People are not entirely rational or irrational when making any financial choices and tend to make emotional, biased investment decisions. Recognizing the psychological biases for investment mistakes and taking proper actions to fix such errors can reduce their effect on investment decisions and potentially improve the outcomes (Baker & Ricciardi, 2015, p. 23).

In this article, we will discuss the neuroanatomy of decision-making and four main behavioral biases that have received a substantial amount of empirical attention in the literature: overconfidence, regret aversion, disposition effect, and herding (Satish & Nisha, 2015).

Overconfidence Bias

During the decision-making process, investors are not free from psychological biases such as overconfidence. Usually, many people believe that they are better than other people and expect that they deserve better things in life than others. Also, sometimes people are very unrealistically optimistic and evaluate their success rate much higher than reality. Many studies show that overconfidence is a common characteristic among investors and some observers even claim that the global financial crisis was the result of the human skill of creating overly optimistic forecasts (Onwallstreet, 2008). Overconfidence in investments encompasses two areas: “miscalibration” and “better than average.” In “miscalibration,” people believe they can evaluate things more preciously than other investors, while in “better than average,” investors assume they have more advanced abilities than average investors.

According to social science, there is a motivation in human nature to master the environment and to “beat the odds” (Langer, 1975). Usually, people like to feel they are in control of their surroundings, and when they achieve their goals, they feel overly confident. Surprisingly, the

greatest satisfaction comes when we achieve something particularly difficult, unpredictable, uncontrollable, and personally important. Most of the time, stock investment corresponds to these characteristics and is the main reason for overconfidence.

According to personality research, people with overconfidence tend to carry the risk of making commitments that exceed their capabilities or abilities. Accordingly, those people end up with smaller rewards than people with lower self-esteem (Chu, Im & Jang, 2012). Furthermore, studies indicate that people usually trade more due to overconfidence when price increases, because these people feel a greater feeling of pride in gain and they fail to have long-term views. Instead of long-term investment plans, they prefer making short-term decisions and a little profit. (Chu, Im & Jang, 2012).

In order to avoid overconfidence bias, researchers have suggested using relevant cognitive regulation strategies. Investors should monitor their feelings by knowing that by getting into trading practices, one trades against machines, institutional investors, and those around the globe with stronger data and more expertise. An individual has to learn how to suppress the temptation to assume that their data and instincts are stronger than those in the stock market during the financial decision-making process (Meeja & Jaeun, 2016).

Regret Aversion Bias

Misleading emotions include anxiety and regret drive investors to sell at market bottoms as it increases the perception of risk and reduces the perception of potential returns (Statman, 2014). Regret is a powerful incentive to maintain the status quo in our lives and it can affect every part of our life, including financial or personal decisions. Regret theory is another part of behavioral finance. The regret-averse bias is a situation in which if they make the wrong choice, individuals expect regret, and when making choices they recognize this anticipation. Usually, people feel regret when they missed, misused, or ignored any available opportunity. The feeling of regret leads to aggressive behavior (Ariely & Simonson, 2003) and loss-averse behavior. Additionally, studies show that investors feel regret not only in non-stable but also in a stable environment, implying that even in favorable scenarios investors still have feelings of regret. For example, in the case of selling a product through auction, an investor can feel regret because of asking a too low or too high of a price. Moreover, aversion to regret drives investors to choose stocks of good companies subjectively designated, even though the alternative stock has an equivalent or higher estimated return for the same risk.

Usually, the major cause of regret aversion is a financial loss in the past, which means that when people do not feel satisfied with their past experience they suffer from this phenomenon. Regret-averse investors in comparison to other investors are more sensitive in nature due to their past experiences and they are more likely to invest in the stock of a good company that involves less risk and less return than in stock of other company with some chance of risk (Awais & Estes, 2019).

People also overestimate potential remorse, indicating that people are less sensitive than they would think to regret. When making a decision where future disappointment affects our decisions, there is an important discovery to bear in mind, where we may remember that it might not be as realistic as we assume. Apart from the effect, it will also serve to prevent regret, not by changing choices, but by embracing findings. Whatever happened in the past, in terms of effect, is out of our range. We should not alter our decisions; however, we can change our outlook on them and attempt to mitigate the pain of remorse (Gilbert, Morewedge, Risen, & Wilson, 2004).

Disposition Effect

The disposition effect relates to the tendency of financial customers to sell earned assets (e.g., inventories) too early and to keep losing assets for too long. In their paper, “The Disposition to Sell Winners too Early and Ride Losers too Long: Theory and Proof,” Hersh Shefrin and Meir Statman first proposed this notion in 1985. The concept of the disposition effect applies to the asymmetric risk perception depending on which investors are risk-averse when they have gains and risk-seeking when they have losses (Kim & Ha, 2016).

In 1979, Israeli psychologists, Daniel Kahneman and Amos Tversky (1979) found the cause of the disposition effect and named their finding “prospect theory.” This theory states that when an individual has two equal choices, one having possible gains and the other with possible losses, the individual is more likely to choose the former choice although both would return the same economic result. Kahneman and Tversky (1979) said that losses create more emotions which affect individuals more than the same amount of profits (Kahneman & Tversky, 1979). For instance, even though the net result of receiving \$100 would be the same as the net result of gaining \$150 and then losing \$50, people would tend to take a more favorable view of the former than of the latter situation.

There are two major reasons why selling too soon and taking small profits may not be such a good idea. First, great stocks are hard to find and if you are lucky enough to own some truly outstanding shares, you would better think twice before selling them. Second, selling winners is tax-inefficient. It's not just how much you earn when it comes to investing, it's what you keep after taxes. There is no doubt that everyone discovers early in their careers that they usually owe taxes when they make money. This fact also applies to investors, who pay taxes when they sell assets at a profit. Taxes could reduce drastically the profit, and for this purpose, traders should postpone paying taxes by means of holding their profitable investment longer (Rogers, 2006).

In order to avoid the disposition effect, researchers have suggested that when investors employ an automatic selling mechanism in the form of limit orders, they exhibit a significantly lower disposition effect. Another research found that providing a rational warning message about disposition effect before final trading decisions is sufficient to reduce the bias (Wierzbicki & Seidens, 2018).

Herd

The Herd instinct in finance is the tendency in which investors imitate rather than evaluate what they believe other investors are doing. In other words, a herd-instinct investor would make the same or equivalent investing choices based solely on the assumption that many people buy the same securities (Bikhchandani & Sharma, 2000).

Herd instinct is an attitude that is marked by a lack of human ability for decision-making, allowing individuals to behave in a similar manner to those around them. In order to live and succeed, human beings are a collective community that depends on cooperation. For example, we imitate the body language of a person with whom we speak as adults because we have the same emotions as the individuals around us. Furthermore, some studies show that we mimic other people's preferences. The herd instinct runs deep in human behavior and sometimes even when people know what is happening, even when they are aware that what they are doing makes no

business sense and will probably end in disaster, it can be hard not to go along with the majority view (Witzel, 2008).

In order to avoid herd instinct, investors need to make a conscious effort to form their own opinion. Researchers found that when people knew they need to justify their choices, they were much less likely to blindly imitate other people. Instead of being on auto-pilot, people can educate themselves about choices in order to make well-informed decisions. Some findings also show that while traders experience pressure to rush, they are more likely to imitate other individuals. Only because someone else appears to be making a fast decision does not mean that they know better and investors can take time to make choices through asking questions and worrying about their beliefs in order to escape the herd instinct (Bikhchandani & Sharma, 2000).

Neuroanatomy of Financial Decisions

The human brain has evolved over centuries to adapt to natural environments. Evolution has equipped humans with two basic instincts: approach and avoidance often referred to as rewards and Punishments (Absher & Cloutier, 2016). Both of these instincts include the brain area that has been associated not only with financial concepts but also with emotions.

Obviously, emotion is a crucial aspect of human psychology, but it is not completely understood. Emotion are a complex human psychological and physiological state that allows individuals to feel when in their environment a certain situation is more favorable or less attractive (Ponciano, Brasileiro, Andrade, & Sampaio, 2014). Emotions are also assessed using bipolar scales that define a spectrum from unpleasantness to pleasantness, such as unhappiness to enjoyment or pessimism to hope, producing optimistic or pessimistic emotions that persons can describe (Bradley & Lang 2000).

As a result of millions of years of development, humans are well trained to resolve any obstacles typically faced through evolution. Over time our brain's capacity greatly evolved, which gave us many different abilities, such as the ability to learn and select actions associated with rewards and avoid ones associated with punishment. For instance, a person in a good mood because of recent experience or current place in life takes this optimistic perspective to the job at hand. Many examples suggest that investors are more likely to buy the same stocks if they previously had a profit. This is an amazing example of reward-based learning, which is one cause of behavioral biases in finance (Miendlarzewska, Kometer, & Preuschoff, 2017). Moreover, unique research showed that those who learned about profits quickly had more money, and those who learned about losses quickly had less debt. In addition, independent gain and loss learning not only influences immediate but also long-term financial decisions, which suggests that individual variations in learning about gain and loss could ultimately impact the financial effects of life beyond their momentary effect.

Human beings frequently make investment choices with behavioral biases that allow them to behave on instinct, regardless of how methodical our financial decisions are. This is the cornerstone of behavioral finance, a comparatively recent area of research that links mainstream economics with psychological science.

Future of Behavioral Finance

Started in the 1980s, the study of behavioral finance is just at its beginning stage. We need to be cautious when it comes to understanding the influence of human behavior and its effect on financial decision-making. Science needs deeper engagement in more complex behavioral understanding and comprehensive approaches to institutional influences on financial decision making. Furthermore, new research studies and other qualitative tools are necessary for the development of behavioral finance.

Today, behavioral finance research usually investigates already confirmed theories, which financial analysts accept. But the future of behavioral finance will require much more valuable finance-specific behavioral theories. Today high-ranking finance journals tend not to publish articles about behavioral finance theory because of a lack of progressive research programs.

For future studies of behavioral finance, researchers must address their ontological (description of reality) and epistemological (the relation between reality and the investigators) assumptions. Also, they should consider how those assumptions align with their research questions and their methodological choices. This detail is essential for the future of behavioral finance. By analyzing the philosophy of research, the scientist can understand more about the development of the research methods in behavioral finance, how to frame this theory and how to develop the advancement of behavioral finance (Baker, Filbeck, & Ricciardi, 2017).

Conclusion

After analyzing the behavioral biases and neuroanatomy of financial decisions, this paper concludes that emotions play a vital role in investors' psychology. Behavioral finance is finance, with common people in it, people like you and me. In contradiction, regular finance is finance with rational people in it. Average people are not irrational, so we are always accountable and generally 'normal-smart,' but often we are 'normal-stupid,' because of our cognitive failures such as hate and overconfidence, and our feelings such as unreasonable expectations and desires (Statman, 2014). As our financial conditions are one of the most significant for our well-being, our emotions play a vital role in financial decision making. Behavioral finance, unlike traditional studies, analyzes human psychological influences of the decision-making and gives us a much better understanding of investment dilemmas. According our analysis, psychological biases are a natural component of many investment processes and we need to have a more comprehensive understanding of this phenomenon. Also, it is highly recommended to develop more progressive research methods in behavioral finance. Both human psychology and traditional finance theories were important in developing the initial behavioral study of finance, but for better development of this field, more vibrant research programs are essential (Baker, Filbeck, & Ricciardi, 2017).

References

- Ackert, L. F., Church, B. K., & Deaves, R. (2003). Emotion and financial markets. *Federal Reserve Bank of Atlanta Economic Review*, 88(2), 33-41. https://www.frbatlanta.org/research/publications/economic-review/2003/q2/vol88no2_emotion-and-financial-markets
- Awais, M., & Estes, J. (2019). Antecedents of regret aversion bias of investors in the stock market of Pakistan (PSX) along with the scale development on regret aversion bias. *City University Research Journal*, 9(4), 750-763. <https://search.proquest.com/docview/2414871722?accountid=14129>
- Baker, H. K., Filbeck, G., & Ricciardi, V. (2017). *Financial behavior: Players, services, products, and markets*. New York: Oxford University Press.
- Baker, K. H., & Nofsinger, J. R. (2002). Psychological biases of investors. *Financial Services Review*, 11(2), 97-116. <https://search.proquest.com/docview/212053247?accountid=14129>
- Baker, K. H., & Ricciardi, V. (2015). Understanding behavioral aspects of financial planning and investing. *Journal of Financial Planning: Denver*, 22-26. <https://search.proquest.com/docview/1660768569?accountid=14129>
- Bikhchandani, S., & Sharma, S. (2000). Herd behavior in financial markets. *IMF Staff Papers*, 47(3), 279-310. <https://search.proquest.com/docview/214761912?accountid=14129>
- Chu, W., Im, M., & Jang, H. (2012, April). Overconfidence and emotion regulation failure: How overconfidence leads to the disposition effect in consumer investment behaviour. *Journal of Financial Services Marketing*, 17(1), 96-116. <https://doi.org/10.1057/fsm.2012.7>
- Gilbert, D. T., Morewedge, C. K., Risen, J. L., & Wilson, T. D. (2004). Looking forward to looking backward: The misprediction of regret. *Psychological Science*, 15(5), 346-350. <https://doi.org/10.1111/j.0956-7976.2004.00681.x>
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291. <https://doi.org/10.2307/1914185>
- Kim, Y. D., & Ha, Y. W. (2016). Who is afraid of disposition of financial assets? The moderating role of regulatory focus in the disposition effect. *Marketing Letters*, 27, 159-169. <http://dx.doi.org/10.1007/s11002-014-9323-0>
- Kumar, S., & Goyal, N. (2015). Behavioural biases in investment decision making: A systematic literature review. *Qualitative Research in Financial Markets*, 7(1), 88-108. <https://search.proquest.com/docview/1647135679?accountid=14129>
- Miendlarzewska, E. A., Kometer, M., & Preuschoff, K. (2017). Neurofinance. *Organizational Research Methods*, 22(1), 196-222. <https://doi.org/10.1177/1094428117730891>
- Mooreland, J. (2013, May). Controlling the urges: How biases influence our investment decisions. *Journal of Financial Planning*, 26(5), 18, 20-21. <https://search.proquest.com/docview/1370884211?accountid=14129>
- Ponciano, L., Brasileiro, F., Andrade, N., & Sampaio, L. (2014). Considering human aspects on strategies for designing and managing distributed human computation. *Journal of Internet Services and Applications*, 5(10). <https://doi.org/10.1186/s13174-014-0010-4>
- Roberts, L. (2015). Dalbar: Why Investors Suck And Tips For Advisors. *Advisor Perspectives*, 1-4. Retrieved January 24, 2021.
- Rogers, D. S. (2006). *Tax-aware investment management: The essential guide*. New York: Bloomberg Press.

- Ross, N. (2001, 03). Benjamin Graham: Father of security analysis. *Better Investing*, 50, 42. <https://search.proquest.com/docview/233331475?accountid=14129>
- Ruedi, J. (2020, August 23). Does behavioral finance play role in decisions? *Pantagraph*. <https://search.proquest.com/docview/2454181049?accountid=14129>
- Statman, M. (2014). Behavioral finance: Finance with normal people. *Borsa Istanbul Review*, 14(2), 65-73. <https://doi.org/10.1016/j.bir.2014.03.001>
- Thaler, R. H. (2005). *Advances in behavioral finance*. Roundtable Series in Behavioral Economics New York, NY, Princeton, NJ, and Oxford, UK: Russel Sage Foundation.
- Wierzbitzki, M., & Seidens, S. (2018). The causal influence of investment goals on the disposition effect. SSRN. <http://dx.doi.org/10.2139/ssrn.3275998>

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Discussion Questions

1. What is behavioral finance, and how it can affect financial decisions?
2. What are the different types of behavioral biases?
3. What roles do emotions play in the investment decision-making process?
4. Which emotions trigger irrational thoughts?
4. What is reward-based learning, and why is it the cause of behavioral biases in finance?

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Life Forward

Luis Victoria

Attorney and World Karate Champion



Background

Throughout his life, Luis Victoria has combined his two passions – martial arts and law. He has been practicing Japanese karate for more than 35 years. Mr. Victoria is known also as “Sensei,” an honorific Japanese term used to refer to a martial arts master. Wherever Sensei Victoria has been, he has left an unmatched mark of discipline and improvement on all of his students. Sensei Victoria has taught such inspiration with his passion for martial arts and with the example of his own life. Mr. Victoria is also a practicing attorney in both Colombia, South America, and the United States.

His passion for karate started when he was a child in his hometown in Colombia. His father always motivated him to be surrounded by valuable people, and to be in contact with the community. His mother has always been an example for him of perseverance, honesty, humility, and discipline. At the age of eight, his parents decided to take Luis to a karate school, so he could learn to defend himself against bullying as well as to strengthen his discipline and self-confidence. A few years later, he began to participate in karate tournaments, locally, throughout Colombia, and eventually representing Colombia in many international tournaments. In 2001, in Atlanta, Georgia, USA, in the Rengokai Karate World Championship, he obtained – for the first time for his country – a world title with two gold medals in the categories of *Kumite* (combat) and *Kata* (figures). This world triumph opened many doors for him, and he began traveling the world as an expert Karate seminar leader and as an international Karate Referee – in time, becoming one of the highest-ranking Pan American Referees in Latin America. At home in Colombia, his karate academy excelled, and he became the *Sensei* (teacher, in Japanese) of many champions, especially in the Pan American and international arena. Currently, he holds the sixth-degree black belt degree in Goju-Ryu Karate Do.

In 1994, Mr. Victoria had joined the Sport Department of the prestigious *Universidad de San Buenaventura Cali* as a karate instructor. During his time there as an instructor, he also had become a student – obtaining sports achievement scholarships and graduating from its internationally recognized law school in 2005. He taught at this private Catholic university for about 15 years, until he obtained U.S. residency on the extremely difficult-to-obtain EB-1 visa, an employment-based, first-preference visa for persons of extraordinary ability. In 2009, he expanded his experience in the legal profession, graduating with a J.D. degree from St. Thomas University School of Law in Miami, Florida.

As a child, Mr. Victoria had experienced the social injustice experienced by many in his community and in his country. From those moments awoke his interest in giving something back to his community, especially to those who need it. His parents always instilled in him the discipline, and the values necessary to base his foundations of what justice and honesty mean. This is how he began his career as a lawyer, especially dedicated to the field of immigration based on the values obtained in his childhood.

Today, Mr. Victoria is a licensed attorney of the Florida Bar, living in Miami with his wife and lovely young daughter. He has his own law firm and provides legal services for the people of South Florida and others nationwide. He also is writing his first book, on immigration law.

Interview

By Raúl Fernández-Calienes
Managing Editor, *Journal of Multidisciplinary Research*

1. Life is about stories. Do you have a favorite story you use as an icebreaker?

Yes, normally the story I use as an icebreaker is my own story of life as a karate practitioner. I like to start a conversation through something constructive and positive, and I think that the martial arts are interesting because they have elements of perseverance and positivism.

2. What are the top three characteristics that contributed to your success?

The top three characteristics that have contributed to my success are, discipline, respect, and courtesy: *discipline* because I have been able to achieve my most important goals throughout this value; *respect* because I follow the rules and processes of everything of which I have been part; and *courtesy* because I respect other's opinions, hierarchy, and experience regardless race, gender, or social status.

Discipline has been part of my training since my childhood. Having been instilled by my parents, it is thanks to Discipline that I have managed to persevere in my goals. It helped me to achieve my triumphs as an athlete, Sensei (coach), referee, and lawyer. For example, I remember that despite the financial difficulties I experienced when my father died, I persevered in my sports practice and in my academic pursuits. Of course, the lack of material goods was not necessary for me to achieve my most important goals, since I maintained my positive attitude and my desire to always win thanks to my discipline. My friends always admired me back then and continue to admire me for my discipline and perseverance. Many in their youth, who had the same or even better abilities, did not achieve the goals that I achieved. Whenever I reached an important goal, my friends and family asked me how I achieved it. As an example of this, before the World Karate Championships, I spent about two years without stopping training every single day, from six in the morning, from eight to ten hours a day. But the highlight of all this was that at the same time, I was carrying out my law career in Colombia.

In contrast, Respect has played an important part in my training – for example, strictly carrying out what my coaches imposed on me in my goals as an athlete, what my teachers indicated in my daily tasks at the university, and now strictly following what the law tells me as a lawyer.

Finally, Courtesy has been part of my training. This I learned from my parents and my karate teachers. Martial arts teach respect for the other, especially respect for the teacher. This teaching has been put into practice in my professional and personal life.

That is why for me, respect, discipline, and courtesy are essential factors of my training as a person, as a Karate Sensei, and as a lawyer.

3. What life-changing events or decisions have guided your career?

The event that has most influenced my life has been the World Karate Championship in which I achieved two Gold Medals in 2001. In karate, an athlete can compete through two modalities: *Kumite* and *Kata*. *Kumite* is 'combat,' or 'fighting,' and this modality is divided into categories according to the weight and age of the athlete. Likewise, the athlete can achieve victory through elimination each time he or she beats each of the opponents in his or her respective category. For its part, the *Kata* modality means 'figures.' This modality can be individual or in teams made up of three athletes each. The process of elimination is the same as in *Kumite*. During the Karate World Championship in which I participated, athletes from almost 100 countries from around the world participated. I obtained my two gold medals, one in the *Kumite* category of less than 60 kilograms and another in the Men's individual *Kata*, up to 34 years of age. I managed to eliminate about 50 participants in both categories, thus achieving the gold medal in both *Kumite* and *Kata*. This triumph opened doors for me to obtain the most important goals in my life.

In contrast, another aspect that had an impact on me the most during my life was the moment when I took the decision to emigrate to the United States, since I had to leave everything I had built in Colombia for many years – such my career.

I had my karate school for many years in the city of Cali, Colombia. Currently, it still exists, its owner is my student and nephew Federico Victoria. I created my academy from the beginning with much effort and dedication. It took many years of dedication to be able to position my karate academy as one of the most outstanding in Colombia, both in sports and in training. At that time, before moving permanently to the United States, I had about 150 students of all ages. My students were part of my life and my daily life. For about 15 years, I shared educational and enriching experiences with each of my students. They were more than clients – I determined them to be part of my own family. Likewise, many of my students became my best friends. I traveled with many of them through many cities and various countries. Karate was the central theme, and I had a privileged position within society and in my community.

I really had no interest in moving to the United States permanently. However, my EB-1 visa was approved, and I chose to move to the United States, towards a new life – as a sensei and a lawyer – and starting my life once again from scratch. This included, for example, learning a new language, founding a new karate school, and studying law – all in another country.

4. Tell us of any expressions your parents often repeated with you.

I remember that my parents always told me I had to respect other people, regardless of their social status or condition. This was because they had been raised in homes where humility and respect prevailed, especially because their families came from the countryside, where these values are highlighted. My father, in particular, emphasized that someone should be respected not because that person had professional titles but because he or she was a person, a human being. Likewise, my mother, who is a humble person, also coming from the countryside, has transmitted to me the respect that should be conveyed to all human beings. These values of respect mainly come from my ancestors, all of humble origins, from the countryside, and from cities where camaraderie is practiced, and where there is a vocation for respect toward the members of the community. I also remember that my parents often told me I had to be disciplined in my studies to achieve my most important goals.

5. What is the biggest misconception about how to achieve success?

I think the biggest misconception of my life was that if my family was not wealthy, I could not achieve my goals. This misconception was unfortunately influenced by the social environment in which I lived in during my adolescence.

Fortunately, I realized early on that the material things were not necessary to succeed in life. As I was achieving my goals, I realized it was important for me to continue on my path, without paying attention to all those elements that affected me, especially not having the financial resources to achieve my goals. These doors that were opening in my life opened without my having to have the material aspect that affected me before. They opened, thanks to my qualities as a person, especially thanks to all those values obtained through the teachings of my parents, and these doors opened as a result of my discipline, perseverance and extraordinary qualities as an athlete.

6. What books have you read lately?

Think Grow Rich by Napoleon Hill. London, UK: Quarto Publishing Group, 2019.
The Law of Success by Napoleon Hill. New York, NY: Penguin Random House, 2017.
Rich Dad Poor Dad by Robert T. Kiyosaki. Scottsdale, AZ: Plata Publishing, 2017.
The Art of War by Sun Tzu. London, UK: Bloomsbury China, 2019.

In *Think Grow Rich*, by Hill, the teachings that I have obtained have been primarily the following: (1) “Thoughts as an important tool for success.” This lesson means that everything I think can be reflected in the reality of my life, that is to say that if I think in a successful way, it will be the result in my life. (2) “Have faith.” This lesson has been important for me since it has taught me to persevere in my goals, despite the difficulties and adversities that may arise. (3) “Listen to the subconscious.” This lesson has led me to maintain positive thinking, so as not to allow myself to be affected by my surroundings or failures.

In relation to *The Law of Success*, also by Hill, the main lessons have been the following: (1) “Success depends on our own happiness.” I consider that happiness and success cannot depend on third parties but on our own initiative and thought. (2) “Prayer and faith.” Faith, continually with prayer, results in positive and decisive thinking. That is why I have always based my success on my faith in God and on constant prayer.

Regarding *Rich Dad Poor Dad*, by Kiyosaki, the lessons I learned are the following: (1) “Generate your own company.” I have always been an entrepreneur, although I have belonged to institutions as an employee, I have always included myself in having my own business initiatives. (2) “Take risks.” I have taken this lesson into account in order to achieve my goals. In all areas of life, I have taken the necessary risks to improve my life and obtain what I have set out to do.

As for *The Art of War*, by Tzu, the lessons I have implemented in my life are the following: (1) “Value time.” The battles, which I homologize to the difficulties in his life, require a solution at an appropriate time. You cannot let time pass without taking a measure to solve the problems or to overcome the obstacles. (2) “Planning.” For me, it has been very important to conduct my life with a plan. With this, I have been able to take into account the objectives in a clear and organized way.

7. Imagine your phone rings, and it is you from 10 years ago. If you had only a minute to talk, what would you say? (We know, buy AAPL.)

I would say to myself: Luis, do not stress about meeting your goals. Just be persistent, and through your discipline, you can achieve everything you set your mind to. You do not need to worry – put everything in the hands of God. He always has the best for you. Learn to pray, to meditate, and to love those around you. Do not forget to always help others because it is good to cultivate your spirit. Always keep God in mind in your decisions and in your entire life. Plan everything you set out to achieve, without sacrificing quality of life. Enjoy life, which is short. Appreciate the insignificant things, and never forget your good friends, your parents, and your family.

8. What elevator speech would you give children about success in life?

During my entire life, I have always kept the most important lessons I received from my parents and teachers. Discipline is one of the best lessons I have received, and I have always put it into practice. I have realized throughout my life that through perseverance, goals can be achieved. I also have learned throughout my life that I must preserve my passions – one of them is martial arts. It is important to keep passion for something you enjoy doing because it makes you grow as an individual.

9. What is the best advice you have ever received, and who gave it to you?

The best advice I have received in my life has been that from my mother. She has always taught me to believe in God before all things, and to put everything in God's hands so as not to worry about anything.

10. What would you like to see as your life's legacy?

I would like to be remembered as a person who contributed important aspects in the lives of others. I especially want those who have been my students to remember me as someone who taught them respect for rules, perseverance, and discipline to achieve their goals.

To Cite this Interview

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Book Review

Book Details

Murphy, W. (2021). *Blazing paddles: Your guide to forming a fun, fast dragon boat team*. Hollywood, FL: Synergy Outdoor Adventure Resources, 138 pages, softcover, <https://www.paddlebp.org>

Reviewer

Robert McNamara, M.D., FAAEM

Synopsis and Evaluation

This book is a great resource for new coaches and team organizers. Will Murphy has put together a comprehensive guide for those starting a Dragon Boat team or finding themselves in the position to lead one. With two decades of coaching experience, he brings a wealth of knowledge to the table. The illustrations are very useful, land and water training is covered, livened with a healthy dose of humor.

In the Author's Own Words

“Dragon boat teams are not led to victory by prima donna stars, and the only bench most paddlers will warm is one of the ones in the boat. **Everyone participates.** Everyone needs to dig deep for the team to do its best. Everyone needs to be committed to paddling as one for the team to succeed. The applicability of the experience to various aspects of corporate and other endeavors should be obvious. At almost any large festival, there will be dozens of teams composed of coworkers. The companies behind those teams know the dragon boating experience will make their workforce more cohesive and more resolute in the face of adversity.” (pp. 9-10)

“Racing in dragon boats rewards teamwork like few other sports. Paddlers are seated close enough together that their paddles will clash unless they paddle as one, all on the same beat. Cohesive teams that coordinate their efforts can compete with, and defeat, bigger, stronger athletes.” (p. 9)

“Enjoy your time on the water with friends. Life is short. Your connections to others and to nature are important. Make the time you have with friends and with the water count.” (p. 103)

Reviewer's Details

Robert McNamara, M.D., FAAEM, is Professor and Chairman of the Department of Emergency Medicine at the Lewis Katz School of Medicine at Temple University as well as Chief Medical Officer of Temple University Physicians, in Philadelphia, Pennsylvania. He has been the Chair of the Medical Commission of the International Dragon Boat Federation. For many years, he has been the Coach of the Premier Class of the U.S. National Team. He has won more medals as an athlete and coach at dragon boat racing World Championships than almost anyone in history.

To Cite this Book Review

McNamara, R. (2021, Spring). [Review of the book *Blazing paddles: Your guide to forming a fun, fast dragon boat team*, by W. Murphy]. *Journal of Multidisciplinary Research*, 13(1), 117-118.

Book Review

Book Details

Hollensen, S., & Opresnik, O. M. (2020). *Marketing: Principles and practice: A management-oriented approach* (4th ed). Columbia, SC: Opresnik Management Consulting, 477 pages, \$26.51, softcover, ISBN: 979-8554161223.

Reviewer

Hagai Gringarten, Ph.D.

Synopsis and Evaluation

Marketing: Principles and Practice: A Management-Oriented Approach (2020) provides a comprehensive introduction to marketing and strategic marketing management. The book, co-authored by leading academic marketing experts, offers a clear and easy-to-understand overview of the latest developments in marketing.

Marc Opresnik is a distinguished professor of marketing at the Technische Hochschule Lübeck as well as a member of the Board of Directors at SGMI Management Institute St. Gallen in Switzerland. He is Chief Research Officer at Kotler Impact, Inc., and a global co-author of marketing legend Philip Kotler. Svend Hollensen is a distinguished professor of international marketing at the University of Southern Denmark, with extensive global consulting experience, and author of globally published textbooks.

Marketing: Principles and Practice: A Management-Oriented Approach (2020) presents a complete and holistic overview of the latest in contemporary marketing, without unnecessary photos or text. It concentrates “on the essential marketing know-how for both practitioners and students” (Preface). The book provides a comprehensive introduction to the latest developments in marketing, including Blockchain, Internet of Things, and Artificial Intelligence as well as revisiting focal subjects such as ethical issues in marketing and societal marketing.

This updated and extended fourth edition is divided into six major sections and many subchapters:

- Fundamentals of Marketing and Marketing Management.
- Situational Analysis in the Marketing Planning Process.
- Strategy Formulation in the Marketing Planning Process.
- Marketing Mix in the Marketing Planning Process.
- Implementation and Controlling in the Marketing Planning Process.
- Conclusion.

Structured according to the marketing planning process, the chapters are divided into four “phases,” in which phase 1 is the analysis, phase 2 is strategy formulation, phase 3 is tactical decisions, and phase 4 is implementation and control. Throughout the book, Professors Hollensen and Opresnik incorporate current “Marketing Highlight” segments, presenting recent global marketing cases that put in perspective marketing applications and strategies. The book provides an easy to understand and solid insight of modern marketing.

A concise introduction to the theory and practice of Marketing in the 21st century, Opresnik and Hollensen’s *Marketing: Principles and Practice: A Management-Oriented Approach* (2020) provides excellent coverage of marketing fundamentals to a brand new world of intertwined, high-speed, globally competitive marketplace. Targeting advanced undergraduate students, practitioners, and MBA students, the book provides a clear, lively, and smart overview of the latest developments in marketing. Updated, timely, and priced right, this marketing book is indispensable to professors and students alike. I highly recommend it.

In the Author’s Own Words

“This marketing text not only integrates all relevant aspects of marketing but also structures them in such a way, that both practitioners and students acquire a comprehensive and holistic overview, how it all fits together. This is achieved by the structure of the book, which follows the marketing planning and decision making process inside the company” (Preface).

“Peter Drucker, an Austrian-born American management consultant, educator, and author...once stated: ‘A business has two, and only two, basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs’” (p. 1).

Reviewer’s Details

Hagai Gringarten, Ph.D. (hagai@stu.edu), is a branding expert and Marketing Professor at St. Thomas University, and was a Visiting Professor at several Chinese universities. He has served as President of the American Marketing Association South Florida chapter and co-authored a bestselling book about coffee. Dr. Gringarten is Publisher and Editor-in-Chief of the *Journal of Multidisciplinary Research* (<http://www.jmrpublication.org>) and served on the review board of the *Journal of International & Interdisciplinary Business Research*, a California State University publication. He currently serves on Governmental and Academic boards. His latest book *Ethical Branding and Marketing: Cases and Lessons* (Routledge, 2019) was published in the U.K. and the U.S.A.

To Cite this Book Review

Gringarten, H. (2021, Spring). [Review of the book *Marketing: Principles and practice: A management-oriented approach*, by S. Hollensen & O. M. Opresnik]. *Journal of Multidisciplinary Research*, 13(1), 119-120.

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