

Evolutionary Biology in International Relations Against the Backdrop Analogy of Professional Sports

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プロフェッショナル・スポーツから類推される 国際関係分野における生物の進化論的考察

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Abstract

Within international relations (IR) there are several theories that attempt to explain how human social behavior can succeed. One of them is through evolutionary biology, where there are benefits to helping and supporting others. This article uses the example of professional sports to explain the phenomenon and how it can be applied to a larger macro model.

Keywords: International relations, evolutionary biology, ice hockey

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抄 録

国際関係分野においては、人間の社会的行動がどのように成功するかを説明しようと試みる理論がいくつかあります。それらの理論のうちの1つは、他人を助けたり支援したりすることに利点があるという生物の進化論によるものです。この記事ではプロスポーツの例を使用して、起こりうる現象およびそれをより大きなマクロモデルに適用する方法について説明しています。

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INTRODUCTION

The evolution of humans on Earth, to date, has been a controversial subject (Wilson, 2007a). Moreover, human's behavior as social animals and domination in the planet has also been debated. Several theorists, sociologists and practitioners have perceived this subject through a different theoretical lens. For example, multilevel selection theory has justified human success through evolutionary biology, with the claim that selfless behaviour is conducted because it is natural and beneficial, even if not in the individual's best interest. This theory can be presented as a dichotomous action that shows success within internal

relations (IR) when a party benefits from it (Wilson, 1998, 2004; Wilson & Wilson, 2007b; Field, 2004). As with human actions; any kind of human action is driven by a variety of motivations and groups of actors which create particular institutions, regimes and organizations (Young, 1984, 1989; Setear, 2005). Literature has used various analogies that can be drawn from smaller samples to garner analysis that can be extrapolated to clarify situations. Organized professional sports is one way to interpret an evolutionary approach to a shrinking world of international relations. The present article in this manner refers to 'the shrinking world of international relations' through taking different institutional sports analogy to explain human behaviour.

SHRINKING WORLD OF INTERNATIONAL RELATIONS

In recent decades, the world has continued to shrink in a variety of ways, which is often viewed positively through the lens of globalization (Mearsheimer, 2018). Friedman (2007) called this contraction a;

“triple convergence-of new players, on a new playing field, developing new processes and horizontal collaboration” (p.211).

However, the world turning into a global village has not always regarded with a positive development, as globalization is set against an increasingly populated world along with other existential threats such as climate change (Kaplan, 2000). The intensity of these threats requires urgent solutions which can only be implemented through mass collaboration, particularly within a large and diverse international community that are made up of close to 200 different states. It is where international relations (IR) come in. Concerning IR, there must be a coordinated effort, as Dugger (1984) explained that cooperation best serves to solve problems. However, this cooperation can prove to be elusive in an increasingly divisive international order that is moving towards anarchy (Mearsheimer, 2018).

The shift towards anarchism helps to identify one of the biggest challenges when it comes to international relations; the power structure order. In this context, Keohane (1986) discusses that realist power is the coercive power which is used by the state to enforce to get what it desires. The realist approach within the field of international relations in the work of Waltz (1979, 2010) explains that the pursuit of enforcing liberal democracies around the world as a foreign policy is ultimately liberal domination (Mearsheimer, 2018). Having a strong centralized authority has therefore emerged as a necessity of foreign policy, that could push forward the agenda of anarchy, yet in a classical liberal sense it's an outgrowth of domestic policy. The domestic policy here refers to the rule derived from institutions, which

Miller: Evolutionary Biology in International Relations Against the Backdrop Analogy of Professional Sports are products of human actions. On the other hand, states are made up of those who occupy and control the place in a particular period (Bernholz, 1985). It makes the state a dominant institution, which often outweighs regimes such as the institution of IMF.

The political economy of power, from the lens of human behavior, has been pointed out by Manokha (2015), explaining that Adam Smith claimed:

“the individual...was a member of a family, of a state, and of the great society of mankind” (p.16).

Thus, through the Mandeville concept, spontaneous order (invisible hands) has helped to develop outstanding ideas of classical liberalism (Van de Haar, 2009, p.28), with the fable of the bees. One of the examples of the spontaneity of the market is the three-century-old poem which combined with Adam Smith’s invisible hand means that a; *“well-functioning society can be forged out of self-interest”* (Wilson, 2004, p.201) rather than top-down direction. While this realist perspective seems to be contrary to an altruistic end, it has been explained that evolution and spontaneous order are “twin ideas” (Caldwell, 2004, p.262), and further that;

“When an order is achieved among human beings by allowing them to interact with each other on their own initiative – subject only to the laws which uniformly apply to all of them – we have a system of spontaneous order in society” (Caldwell, 2004, p.294).

Societies that are dominant in spontaneous order, however, have to compete in the world through either alliance or exerting power (Bernholtz, 1985; Mearsheimer, 2018), with the latter power structure that leaves conundrums on how to proceed, particularly if self-interest is the only goal. That’s when the state, as termed by Waltz (1979, 2010);

“conducts its affairs in the brooding shadow of violence” (p.102).

Consequently, the dilemma of mutual extinction emerges as referred to as ‘Select Axiom’ by Setear (2005, p.8). It means a stark choice between rational states with international legal constraints that are irrelevant, and the destruction of states, something that needs to be reconciled. The threats of extinction hence call for survival. Contextualizing group survival, the research of Dugger (1984) under evolutionary biology, calls the dichotomy of selfish and competition working together for the existence. So, in modelling human behavior, the multilevel approach works in strategic interaction with applications of numerous theories like game theory (Field, 2004). Concerning, multilevel approach, Turchin (2011) with regards to

how societies evolve states; “multilevel selection provides the conceptual framework for the study of evolutionary forces acting on different levels of organization” (p.2).

Multilevel selection approach from Mitochondria up to IR is applied through three tiers; respectively gene, organism, and group, with selection taking place above the individual (Wilson 2004; Field 2004; Flack, 2010). Applying this theory according to Field (2004) “Understanding why groups behave the way that they do requires a multilevel selection framework remains the only coherent means of accounting for the persistent and spread of behavioural inclinations” (p.1).

Another evolution theory is presented by Hamilton’s rule, which explains human behaviour regarding their survival by increasing their own fitness and engaging in altruistic behaviour because it enhances reproductive success (Bourke, 2014). The formula used to explain this; relatedness is r , the benefit is B , and the cost is represented as C .

$$rB > C$$

So, the relatedness multiplied by the benefit becomes greater than the cost for the altruistic acts. Field (2004) asserts that; “The interpretation of the experimental and the observational evidence as reflecting learned rules of thumb applicable to situations of repeated interactions.” (p.2).

Gardner, West and Wild (2011) point to the generality of Hamilton’s rule as a way to explain natural selection. This evolutionary change is driven by; “the differential reproductive success of the individual organism” (p.1020).

Turchin (2011) refers to this as pro-social versus self-regarding with the outcome greater for the group being pro-social (Gardner, West & Wild, 2011).

$$rb - c > 0$$

This classical social evolution theory framework is used for even the tiniest of organisms, including viruses to evade innate immunity, striking concerns for viruses (Segredo-Otero & Sanjuan, 2020). However, it is how this is moved forward in the context of groups and group dynamics that it becomes relevant in IR theory. Dugger (1984) explains that Veblen distinguished the move from savagery (individual striving to survive) to barbarism (groups fighting other groups in anarchy), which was the growth of civilizations and organized political systems. This movement was facilitated by the growth of the family unit, and concepts of private property – and therefore, the cultural organization. It facilitated “an economic surplus” (Dugger, 1984, p.979) as it gave rise to the state functioning as a constitutional authority, allowing for economy and wealth accumulation, leading to a larger and complex organization, and regimes. The evolutionary theory integrated with IR has also been applied to institutional sports, emphasized in later sections.

INSTITUTIONAL SPORTS

Within social and behavioral sciences, there are consistently evolving approaches to evolutionary theory (Field, 2004). Traditionally, Interdisciplinary studies have provided fertile grounds for collaboration between ideas (Ridley, 2011), as combining academic disciplines often creates unique perspectives. One example is when Dugger (1984) puts forth a progressive theory of evolution, creating a framework around the theorists Thorstein Veblen and Peter Kropotkin to gain an understanding of alternatives to social Darwinism. Another example within the field of IR is deep-seated culture, and human nature applied anthropologically to gain insight into group behaviour and anarchy by Snyder (2002).

While within IR, sports have traditionally been thought of as, no game can, apart from the pleasure it gives to the players and the spectators, contributes anything to the improvement of human conditions (p.90 Von Mises, 1962/1977). Not only are there direct connections between sports which have had direct diplomatic impacts, but they also fall under the sociological framework of the group. This with real-world applications, affect IR, as well as analogies and applied illustrations.

Applying the prism of IR theory, groups can be distinguished between institutions, (or regimes) – which are norms and rules shared by participants, and ‘organizations’ that require physical locations and, staffing and budgets (Young, 1989). Additionally, “Regimes are social institutions governing the actions of those interested in specifiable activities (or accepted sets of activities)” (Young, 1984, p.93).

With legitimization of institutions, a sense of history, and professional sports have been created by national government commissions, such as baseballs 1905 and ice hockey in Canada in the 1960s (Poulton, 2010). Applying the spectrum of shared human experience, those two of the four major North American sports leagues will therefore be considered within the regime, or an institutional framework of IR interpretation with successful cultural shifts in one.

Culturally, worldwide sports have continued to evolve and become a global phenomenon. It is now called an ‘experience economy’, creating the overall experience – along with group cohesion. It has been made up by the fan’s loyalty and the growth of the amount of money in professional sports. It has included multimillion-dollar stadiums and individual player contracts as brands and sporting accessories associated with the sports via sponsorships to relate the product with events, thereby commercializing the events. (Jobber, 2004), and creating large scale organizations. Alongside the loyal fan-base, the business of sporting events grew with companies such as Nike as the sponsorships increased, and they became global brands (as opposed to just global products). The company fed off of each other in symbiotic business agreements with different sports (Keegan, 1999). Recognition

reached the point they could afford to be vague in the advertising with 'Just Do It' because as per Conley (2008) "Consumers already knew what they do" (p.188).

The results of a combined professional sport had a combined profit in 2019 of 75 billion dollars in the United States. Just the US market is larger than the GDP of many countries, and currently, within the North American Market, the National Hockey League is ranked at the top fourth place (the other are the National Football League, NFL, National Basketball Association, NBA, and Major League Baseball, MLB) (Costello, 2014).

American Soft Power (i.e., the ability to shape preferences of influential people through appeal and attraction) in sports has been active since the 1920s when the state department started to send coaches abroad to teach the game (Davies, 2016). Baseball in Japan is an example of American Soft Power. Through the popularity of professional baseball, the sport became popular in Japan and was introduced to the Japanese by an American teacher in 1872 (Gillette, Palmer, 2006). It happened just after the Meiji restoration that opened the country to foreign influence (Barr, 1967). Then over a century later, in the 1990s, Japanese players were good enough to get drafted into the MLB (Davies, 2016).

In another example of diplomacy, after the first trip to the United States, Fidel Castro opened, the country was opened to baseball-quickly. It was after the brief opening of Cuba-US relations whereby President Carter had announced intentions to restore diplomatic relations with the country (Onigman, 1978). In the 1950s, then Vice-President Nixon had encouraged baseball teams to be sent to South and Latin America (Onigman, 1978). The most recent serious attempt at diplomatic normalcy took place when, President Obama took in a baseball game while visiting Havana in March of 2016, and explained that it was not only diplomacy with Cuba but a defiant show against terrorism (Phelps, 2016).

Sports have also been used to extrapolate global problems, and rivalries of superpowers, as Friedman (2007) used the loss at the individual of sports level-for the loss of American competitive advantage. In the case of basketball, it has worked by expanding the sport to the point where the Olympic team only received a bronze medal in 2004. It was because though the players from the other countries were not nearly as good the average American player, it was about working together to collaborate that made them successful. Basketball became the result of the rise of the international player. This is because there is a need for cooperation as complacency and selfish utilitarianism can lead to the "sense of entitlement, the sense that because we once dominated commerce and geopolitics-and Olympic basketball-we always will" (Friedman, 2007, p.385-395).

HOCKEY ANALOGY

Ice hockey can be taken as an example to understand the role of IR in sports. Ice hockey

is one sport that was at one time obscure, before becoming quite popular globally (Hardy & Holman, 2018). The reigning league is the National Hockey Association. The body is now the most prevalent; however, it was not always assured to be there (Hardy & Holman, 2018; Kennedy, 1975; O'Neill, Black, 2017). The NHL needed to ensure that the sports went through a major shift to ensure it was not marginalized (O'Neill, Black, 2017; Hardy & Holman, 2018), which it did (O'Neill, Black, 2017; Hardy & Holman, 2018). Turchin (2011) explained that a unique feature of humans is our capacity for culture, and whether the culture is positive or negative, it can evolve and change rapidly. Often there are dramatic issues that force change, and within hockey in the 1970s culture of violence was prevalent from the top down, that commissioned for the NHL (Kennedy, 1975; Cole, 2014).

At times particularly during the Cold War, the sport of hockey saw several geopolitical implications between the west and the USSR (later known as Russia) (Cole, 2014; Gave, 2018). The Soviet players growing in stature resulted in a variety of high-profile games starting with the summit series in 1972 proved that the Soviets were able to play well enough to equal and even beat the NHL (Hardy & Holman, 2018). The NHL did attract Soviet players, though only after those players had made commitments that could have gotten them killed if caught (Gave, 2018).

Historically contextualized, ice hockey was derived from sports that had existed in prehistoric times, possibly ageing back to the times of Ancient Egypt (O'Neill, Black, 2017; Hardy & Holman, 2018). The evolved game that ended up on ice was the Scottish game, which was brought to Canada by immigrants (O'Neill, Black, 2017; Poulton, 2010; Hardy & Holman, 2018). The original Scottish name was 'Shinty' which now means 'commotion or brawl' (Poulton, 2010, p.21). So, hockey had always been a somewhat a violent sport, with Canadians complaining in the late 19th century (Berglund, personal communication, April 17, 2020).

The National Hockey League started in 1917 with its predecessor and then consolidated into half a century as a regional sport (Poulton, 2010; Hardy & Holman, 2018). In 1967 the league saw an expansion that doubled its size (to 12), as the move created a major sporting institution through the NHL (Hardy & Holman, 2018). There was constant pressure to have the league perform better as the competition arose from the other sports and the authorities saw changes that were starting to threaten the league as well as the sport itself in North America (Cole, 2014). The threats were largely created by the rise of violence and lack of cooperation. It climaxed in the 1970s. There were other threats, including the expansion of other competing leagues, notably the World Hockey League (WHL). Some argue that the 1950s and '60s were the golden years of playing sports (Gzowski, 1981), yet that was the time when the large earnings went to other sports as it remained at the bottom of professional sportsman salaries (Hardy & Holman, 2018; Cole, 2014).

The Summit Series was a 1974 series that pitted the best Canadian players as a national team against the Soviet team. Taking place in 1972, a half-year before Nixon visited Russia with the signing of Détente. The game was considered to be pivotal as it was a series of games against a disciplined team that was not easy for the Canadians to beat. The summit series was a low point for the international reputation of NHL. In hockey, Bobby Clarke almost destroyed a rival Soviet players career through a deliberate attack (Cole, 2014). All of this as it came at the time of the upheaval that the league was undertaking after the expansion and the rise of the rival World Hockey League (WHL). The game was becoming ever more violent as the NHL continued to slide into mayhem with a reputational crisis articulated in court records by the defence attorney. Meshbesher claimed it as; “violent, bloody game, where you have a doctor on call all the time ready to stitch up, have an ambulance available, players getting maimed, some even dying” (Kennedy, 1975).

The interest was fading in sports as parents were deciding not to have their kids play in such a violent environment. A reporter called one game ‘anarchy’, which was the feeling that many had of the entire league (Cole, 2014).

A popular joke at the time was ‘I went to a boxing match, and a hockey game broke out’; which captured the mood of the public concerning the game. The problems were that the goons (the tough players who were immortalized) in the Warren Zevon hockey song were ever more prevalent (Kennedy, 1975). All teams had goons, but the Flyers were cynical in their use of violence. It was a deliberate form of intimidation. That strategy spread quickly in the game (Berglund, personal communication, April 17, 2020). The culture from the top at that time was not interested in outside interference. An example of this can be given by NHL president Clarence Campbell who acknowledged that there were problems; with rising violence in the league but remained steadfast that outside discipline was not the answer, and that they must find answers within (Kennedy, 1975).

From an evolutionary perspective, Boehm, Flack, (2010) explained that while competition generates a tournament which can be resolved through fighting and benefit one party, at the same time, competition can take the form of fighting which is unlikely to benefit any party. Thus, it makes sense to prevent conflict from escalating-as it is costly in terms of energy and injury. While this may make sense, a deeper look into the overall situation infers that the benefits of behavioural change explain the application of Hamilton’s law on the NHL of the 1970s and where the league needed to change the way that it was played (Cole, 2014; Hardy & Holman, 2018). While selfishness with the group is critical for players to get to the team, the necessary members need to get through trials in order to get to the higher levels; the violence had an existential threat to the institution.

The change was coming to the NHL, but it was not a top-down change, rather a cultural shift that was in large part triggered by a single player (Berglund, personal communication,

April 17, 2020). It somewhat mirrored a pattern with baseball, which Davies (2016) referred to as “the quintessential American game that Allan Nevins called, a true expression of the American Spirit” (p.33).

It had had scandals earlier in the century that threatened the MLB organization when the Chicago White Sox baseball team conspired with gamblers to lose the World Series to the Cincinnati Reds intentionally. At the time “seemed destined to ruin baseball as a professional sport entirely” (Asinof, Gould, 1987, p.xvii). The cultural shift was found within the ranks, through a superstar, Babe Ruth who proved to be the “primary agent for this transformation” (Asinof, Gould, 1987, p.xvii).

In the late 1970s, an individual player was set to be a primary agent for that sport. Wayne Gretzky is known as the greatest hockey player ever (O’Neil, Black, 2017; Gzowski, 1981) and therefore was proven to be instrumental in changing the game. These shifts in the NHL were cultural because;

“These changes didn’t take hold at the top level. It wasn’t until Gretzky. But it wasn’t necessarily his playing that changed the game. Nobody could duplicate that. Instead, it was the Oilers winning with a European-style offence and with Glen Sather’s program of training and fitness that helped bring change. Other teams saw a new model, that was successful...the violence of the 70s brought a critical change” (Berglund, personal communication, April 17, 2020).

Wilson (1998) points out that the term altruism and self-interest are difficult within a single perspective of multilevel selection. However, when the rules of the game were adjusted, it is difficult to see the perspective of where adjustments might be altruistic, as the self-interest of the goon-players was obvious for the winning teams. However, a cultural change was needed at the regime level for the group level adaptation to take place, and that sports cultural core values needed to change. Enforced rules required consensus, and working together brought the game onto a more respectable level. Once teams’ owners were able better position the teams towards a wider audience.; the audience allowed for greater revenue streams as the players were professionalized and the fan base grew more competitive in a friendly manner.

Better players and rules meant that there was more and more youth interested in playing hockey, which had the dual effect of ensuring more athletic and competitive youth that attracted better athletes to improve the game. It also helped to create long-term fans, with a bigger base when there is an international game that is followed by millions and a much higher level of play and a consistently growing market (Hardy and Holman, 2018). The cultural conscious needed to come from within to have league-wide changes. However, the

results have been dramatic, with the increase from 12 teams to the current 31. As the worst offending team, the Flyers had not won the Stanley Cup since 1975, though the tactics were successful in getting to the top of the league (Cole, 2014).

Modern hockey as Cole (2014) puts it “There’s hardly any fighting these days, certainly no riots, just an occasional labour disturbance resolved by intemperate lawyers” (p.365).

Ice hockey has become an international sport with the scores and standings regularly reported on mass media including Al Jazeera. When the NHL declared that they would suspend the 2019/20 season over COVID-19 concerns, it drew as much attention as the other major sports that were announced. More importantly, the league has continued to expand and thrive as the salaries grew, and so did the stature.

Fitting into the framework of international relations, (followed by statism) utilitarianism (Ashley, 1986) seems to be a Darwinian approach to neorealism. However, if utilitarianism is observed through the prism of social evolutionary theory, it makes sense at all levels of social hierarchy. Nations need to consider an approach to behave that, while still in the realist realm, actions are viewed from new perspectives. Thinking across academic boundaries means the emergence out of interdisciplinary contexts demands more on the respective fields (Osborne, 2013). There are always evolving methods to social issues, even if at the current time considered unconventional or heuristic, as exemplified by Wilson, Wilson (2007a), “It’s heresy to view groups as organisms, yet today’s organisms are yesterday’s groups” (p.46).

Using analogues framework of sports helps to explain complex sociological behaviours are not a new approach in the field of sports to explain complex systems that led to a successful outcome (Yackinous, 2015).

CONCLUSION

The multilevel selection theory, i.e. survival of the fittest means the species compete with each other and the environment to survive (Dugger, 1984). In other words, as an aggregate the species (and groups) behaves altruistically because; “*Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary*” (Wilson and Wilson, 2007b, p.349).

As seen in the smaller analogous example of professional sports, the lead to cultural shifts may not always be top-down. However, as with any interaction, trust must be built and working towards shared goals to exchange meaningful information (Wilson & Wilson, 2007a). Two and a half millennia ago “Confucius wrote: *‘three things are necessary for government: weapons, food and trust. If a ruler cannot hold onto all three, he should give up weapons first and food next. Trust should be guarded to the end; without trust, we cannot stand’*” (Lewitt, 2016).

Considering the increasing challenges with a shrinking world, it is important to extrapolate a variety of approaches to understand solutions to problems. The urgent pandemic threat of COVID-19 has suddenly supplanted threats that have been in the human consciousness such as nuclear war and climate change. Yet, existential threats continue to prevail and will require cooperation that at first glance may not be in the best interest of the state. Though a general move after WWII was towards power instead of law (Keohane, 1986), altruistic behaviour is the key to the survival of the planet. Cultural mutations can spread very rapidly (Wilson and Wilson, 2007a), as seen in professional hockey, that ensures not only survival but prosperity. Awaking to existential threats, this time for the human race may prove to be the catalyst for more cooperation in international relations with the understanding that altruistic behavior may be costly, but necessary for the groups survival to overcome issues that continue to threaten the globe.

REFERENCES

- Ashley, R. K. (1986). "The poverty of neorealism". Keohane, R.O. (Ed.). *Neorealism and its critics*. New York, N. Y.: Columbia University Press.
- Asinof, E., Gould, S. J. (1987). *Eight Men Out: The Black Sox and the 1919 World Series*. New York, N. Y. Henry Holt.
- Bahar, S. (2018). *The essential tension: Competition, cooperation and multilevel selection in evolution*. Dordrecht, Netherlands: Springer.
- Bernholtz, P. (1985). *The international game of powers: Past, present and future*. New York, N. Y.: Mouton Publishers.
- Barr, P. (1967). *The coming of the barbarians: A story of western settlement in Japan 1854-1870*. Tokyo, Japan: Charles E. Tuttle Co.
- Barkow, J. H. (1992). "Beneath new culture id old psychology: Gossip and social stratification". Barkow, J. H., & Tooby, J. (Eds.) *The adapted mind: Evolutionary psychology and the generation of culture*. (p.627-637). Oxford, UK: Oxford University Press.
- Boehm, C., Flack, J. (2010). The emergence of simple and complex power structures through social niche construction. In Guinote, A., & Vescio, T. (Eds.). *The social psychology of power* (pp.46-86). New York, NY: Guilford Press.
- Bourke, AFG (2014). "Hamilton's rule and the cause of social evolution". *Philosophical transactions: The Royal Society Publishing*. 369 May 19, 2014. Accessed: www.royalsociety.org/doi/10.1098/rstb.2013.0362
- Caldwell, B. (2004). *Hayek's challenge: An intellectual biography of F. A. Hayek*. Chicago: University of Chicago Press.
- Cole, S. (2014). *Hockey night fever: Mullets, mayhem and the game's coming of age in the 1970s*. Toronto, Ont.: Doubleday Canada.
- Conley, L. (2008). *Obsessive Branding Disorder: The illusion of business and the business of illusion*. New York, N.Y.: Public Affairs Publishing.

- Costello, B. (2014). "Hockey ranks 6th in popularity survey: Harris poll". January 27th 2014 *The hockey news*. Accessed: www.thehockeynews.com/news/article/hockey-reanks-6th-in-popularity-survey-harris-poll
- Davies, R. O. (2016). *Sports in American life: A history*. New York, N. Y.: Wiley-Blackwell.
- Dugger, W. M. (1984). Veblen and Kropotkin on human evolution. *Journal of Economic Issues*. Vol. XVIII No. 4. December 1984.
- Field, A. J. (2004). "Why multilevel selection matters" *The papers on economics and evolution*.
- Friedman, T. (2007). *The world is flat: A brief history of the twenty-first century*. New York, N. Y.: Farrar, Straus and Giroux.
- Gardner, A., West, SA, Wild, G. (2011). "The genetical theory of kin selection". *Evolutionary biology*. Vol.24, Issue 5. May. Accessed: www.onlinelibrary.wiley.com/doi/full/10.1111/j.1420-9101.2011.02236.x
- Gave, K. (2018). *The Russian five: A story of espionage, defection, bribery and courage*. Ann Arbor MI: Gold Star Publishing.
- Gillette, G., Palmer, P. (2006). "Baseball in Japan". (pp.1733-4) *The 2006 ESPN baseball encyclopedia*. New York, N. Y.: Sterling Publishing.
- Gzowski, P. (1981). *The game of our lives*. Toronto, Ont.: McClelland and Stewart. *Hockey: A global history*. Chicago, Ill: University Illinois Press.
- Hardy, S., & Holman, A. (2018). *Hockey: A Global History (Sport and Society)*
- Jobber, D. (2004). *Principles and practices of marketing, 4th ed*. London, UK: McGraw Hill.
- Kaplan, R. (2000). *The coming anarchy: Shattering the dreams of the post-cold war*. New York, N. Y.: Random House.
- Keegan, W. J. (1999). *Global marketing management, 6th ed*. Upper Saddle. NJ: Prentice-Hall.
- Kennedy, R. (1975). "When a criminal court jury became deadlocked in the Dave Forbes case, the future nature of hockey was also left hanging" July 28th 1975 *Sports illustrated*. Accessed www.vault.si.com/vault/1975/07/28/a-nondecision-begs-the-question
- Keohane, R. (1986). *Neorealism and its critics*. New York NY: Columbia University Press.
- Keohane, R. O. (1986). "Realism, neorealism and the study of world politics." Keohane, R. O. (Ed.) *Neorealism and its critics*.
- Lewitt, M. (2016). "Investing in a kakistocracy" Oct.13. *Forbes*. Accessed: www.forbes.com/sites/michaellewitt/2016/10/13/investing-in-a-kakistocracy/#6515dee63ea0
- Manokha, I. (2015). "The conundrum of economics: Uncompromising empiricism alongside blind faith in the "magic" of the "invisible hand" (pp.121-153) *Raison politiques* 2015/3 No.59. Accessed: www.cairn.info/revue-raisons-politiques-2015-3-page-121.htm#
- Mearsheimer, J. (2018). *The great delusion: Liberal dreams and international realities*. New Haven, Conn.: Yale University Press.
- Onigman, M. (1978). "Cuba vs. the major leagues: The game is no longer the same". March 19, 1978 *New York Times*. Accessed: www.nytimes.com/1978/03/19/archives/cuba-vs-the-major-leagues-game-is-no-longer-the-same-the-badname.html
- O'Neill, B., Black, R. (2017). *The great book of ice hockey: Interesting facts and sports stories*. Toronto, Ont.: LAK Publishing.

Miller: Evolutionary Biology in International Relations Against the Backdrop Analogy of Professional Sports

- Osborne, T. (2013). "Inter that discipline" (Chapter 3). Barry, A, Born, G. (Eds.) *Interdisciplinarity: Reconfigurations of the social and natural sciences*. New York, N. Y.: Routledge.
- Phelps, J. (2016, March 23). *Obama on why He Attended Cuba Baseball Game Despite Attacks*. 6abc philadelphia. <https://6abc.com/1259535/>
- Pine, B. J., Gilmore, J. H., (2011). *The experience economy*. Boston, Mass.: Harvard Business Review Press.
- Poulton, J. A. (2010). *A history of hockey in Canada*. Montreal PQ: Over Time Books.
- Ridley, M. (2011). *The rational optimist: How prosperity evolves*. New York, NY: Harper Collins.
- Robertson, J. G. (2018). *Too many men on the ice: The 1978-1979 Boston Bruins and the most famous penalty in hockey history*. Jefferson, North Carolina: McFarland & Co.
- Segredo-Otero, E., Sanjuan, R. (2020). "The role of spatial structure in the evolution of viral immunity evasion: A diffusion-reaction cellular automation model". *Plos computational biology*. V.16(2) Feb. Accessed: www.ncbi.nlm.nih.gov/pmc/articles/PMC7034925
- Setear, J. K. (2005). "Room for law: Realism, evolutionary biology, and the promise(s) of international law. (pp 1-46) *23 Berkeley journal of international law*. 23 (1). Accessed: www.law.virginia.edu/system/files/faculty/hein/setear/23berkeley_j_intl_11_2005.pdf
- Snyder, J. (2002). Anarchy and Culture: Insights from the Anthropology of War, *International Organization*, 56 (1), pp.7-45.
- Thayer, B. A. (2004). *Darwin and international relations: On the evolutionary origins of war and ethnic conflict*. Lexington, Kentucky: University of Kentucky Press.
- Thayer, B. A., Ibrayamova, N. V. (2010). *Debates in international relations*. New York, NY: Pearson Publishing.
- Turchin, P. (2011). "Warfare and the evolution of social complexity: A multilevel-selection approach" pp.1-33. *Structure and Dynamics* 4(3). Accessed: www.escholarship.org/uc/item/7j11945r
- Waltz, K. (1979/2010). *Theory of international politics*. Long Grove Ill.: Waveland Press.
- Wilson, D. S. (2002). *Darwin's Cathedral: Evolution, religion and the inner nature of society*. Chicago, Ill: University of Chicago Press.
- Wilson, D. S. (1998). "Hunting, sharing, and multilevel selection" (pp.73-97) *Current anthropology*. Vol 39, No1.
- Wilson, D. S. (2004) "The new fable of the bees: Multilevel selection, adaptive societies, and the concept of self-interest". *Evolutionary Psychology and economic theory advances in Austrian Economics*. Vol. 7. (pp.201-220). DOI 10.1016/S1529-2134(04)07009-7
- Wilson, D. S., Wilson, E. O. (2007a.). *Rethinking the theoretical foundation of socio-biology*. Quarterly Review of Biology Vol.82 (pp.327-349) Accessed: www.journals.uchicago.edu/doi/pdf/10.1086/522809
- Wilson, D. S., Wilson, E. O. (2007b.). "Survival of the selfless". *The new scientist*. 3 November, 2007 (pp.42-6).
- Yackinous, W. S. (2015). *Understanding complex ecosystem dynamics: A systems and engineering perspective*. New York, N.Y.: Elsevier.
- Young, O. R. (1984). "Regime dynamics: The rise and fall of international regimes" (pp.93-113). Krasner, S. D. (Ed.). *International regimes*. Ithaca, NY: Cornell University Press.
- Young, O. R. (1989). *International cooperation: Building regimes for natural resources and the environment*.

Ithaca, NY: Cornell University Press.

Van de Haar, E. (2009). *Classical liberalism and international relations theory*. New York, N. Y.: Palgrave Macmillan.

Von Mises (1962/1977). *The ultimate foundation of economic science: An essay on method*. Kansas City, Mo.: Sheed Andrews and McMeel Publishing.