

# An Introduction to Human Evolved Psychology and Political Violence: Implications for Future Directions in Research and Practice

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**Abstract:** Although media headlines may create the appearance that political violence is a new and burgeoning phenomenon in societies, its antecedents are entirely and undeniably at least as old as the human species. The study of human evolution can offer important insights into describing, explaining, predicting, and controlling political violence. Applying evolutionary theory has become, and will remain, an important cornerstone of the study of violence, including political violence. Doing so mandates a thorough understanding of the mechanisms of natural and sexual selection, and how these forces have designed minds with adaptations to solve problems presented by group living. The following is intended to be a brief introduction for students and scientists unfamiliar with the study of the evolved human mind, using human social violence as the model of illustration. In conclusion, recommendations for further developing scientific research into a metatheory to explain human (violent) behaviour is presented as a lofty, but increasingly tangible (through technological advances) endeavour for future researchers that will enable more effective social policies.

**Key Words:** Evolutionary psychology, Human group dynamics, Political violence, Future of scientific theory

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## Introduction to Evolutionary Psychology

Evolution by natural (and sexual) selection is the most credible, and comprehensive current scientific theory for the study of biological organisms. It undeniably offers useful explanations and workable hypotheses for disciplines from anthropology to zoology. From its formal postulation, evolutionary theory was applied to understand not only the origins of physical adaptations<sup>1</sup>, but also behaviours<sup>2</sup>. Within the past 40 years, evolutionary theory has been increasingly used in the study of human mind<sup>3</sup> and behaviours<sup>4</sup>. Accordingly, the mind has been conceptualized as being composed of many evolved mechanisms evolved to solve specific problems related to survival and reproduction. These mechanisms are considered psychological adaptations that have evolved because they contributed to individual fitness and the successful replication of the corresponding genes. To understand how these adaptations work, it is important to grasp the sometimes deceptively simple process of evolution. Space limitations constrain a detailed explanation here, and so the reader is encouraged to peruse some of the comprehensive and accessible reviews of evolution<sup>5, 6, 7, 8</sup> and evolutionary psychology<sup>9, 10, 11</sup> that have been written

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<sup>1</sup> Charles Darwin, *On the Origin of Species by Means of Natural Selection: Or the Preservation of Favoured Races in the Struggle for Life* (London: John Murray, 1859).

<sup>2</sup> Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (London: John Murray, 1871).

<sup>3</sup> David M. Buss, *Evolutionary Psychology: The New Science of the Mind*, 6th Edition (New York: Routledge, 2019), 1–10.

<sup>4</sup> Leda Cosmides and John Tooby, "From Evolution to Adaptations to Behavior: Toward an Integrated Evolutionary Psychology," In *Biological Perspectives on Motivated Activities*, ed. Roderick Wong (Norwood, NJ: Ablex, 1995) 10–74.

<sup>5</sup> Richard Dawkins, *The Greatest Show on Earth: The Evidence for Evolution* (New York: Free Press, 2009).

<sup>6</sup> Daniel C. Dennett, *Darwin's Dangerous Idea: Evolution and the Meaning of Life* (New York: Simon & Schuster, 1995).

<sup>7</sup> Ernst Mayr, *What Evolution Is* (New York: Basic Books, 2001).

<sup>8</sup> George C. Williams, *Adaptation and Natural Selection: A Critique of Some Current Evolutionary Thought* (Princeton: Princeton University Press, 1966).

<sup>9</sup> David M. Buss, *Evolutionary Psychology: The New Science of the Mind*.

<sup>10</sup> Cosmides and Tooby, "From Evolution to Adaptations to Behavior: Toward an Integrated Evolutionary Psychology."

<sup>11</sup> Leda Cosmides and John Tooby, "From Evolution to Behavior: Evolutionary Psychology as the Missing Link," in *The Latest on the Best Essays on Evolution and Optimality*, ed. John Dupré (Cambridge, MA: The MIT Press, 1987).

to date, for additional information. There are three necessary conditions for complex adaptations, such as sociality, to evolve in a population: 1) variability in traits, 2) heritability of these variations, and 3) a non-neutral impact of these variations on survival and reproduction<sup>12</sup>. Simply, this means that organisms in a population must not all be exactly the same – there must be differences. The differences in the traits must be able to be passed from generation to generation – specifically meaning they have a genetic component. Finally, these differences cannot be neutral with regard to selection – meaning that possessing certain variants of a trait will make some organisms more successful in survival and reproduction over other variants. Over time, the variants of that trait will become more abundant in the population. This is the process of evolution by natural selection. Some variants of a trait may not aid survival, but rather reproduction – making an individual able to have more offspring who will themselves reproduce. This is sexual selection<sup>13</sup>. Natural selection is the process by which traits impact survival, whereas sexual selection is the process by which traits impact reproduction. Both surviving to reproductive age and reproduction are necessary for the succession of traits via the replication of genes across generations. Often the term “evolution by natural selection” is used with the implication of sexual selection being included. The present paper takes care to use the two as separate, but related, processes of evolution.

There are three results of evolution: adaptations, by-products, and noise<sup>14</sup>. Most relevant for the present work are adaptations. Adaptations are solutions to adaptive problems. Adaptive problems are anything that hinder the ability of genes to successfully replicate themselves and increase their abundance in a population. They are countless and specific and can relate to either survival – such as acquiring food (energy); or reproduction—such as attracting (or selecting) a mate. It is worth noting that natural selection operates on the level of the genes. Ultimately, it is copies of deoxyribonucleic acid (DNA) that are passed from one generation to the next, not traits themselves. The genes of DNA provide the building blocks for the

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<sup>12</sup> Darwin, *On the Origin of Species*.

<sup>13</sup> Darwin, *The Descent of Man*.

<sup>14</sup> David M. Buss et al., “Adaptations, Exaptations, and Spandrels,” *American Psychologist* 53, no. 5 (1998): 533–548.

macroscopic traits that are labeled adaptations. An adaptation is only recognizable in terms of the adaptive problem it has evolved to solve. Further, it need not be a physical characteristic<sup>15</sup>. Buss (2019)<sup>16</sup> provides a summary of the evolved psychological mechanisms (EPM) of the human mind:

- (1) An EPM exists in the form that it does because it solved a specific problem of survival or reproduction recurrently over evolutionary history
- (2) An EPM is designed to take in only a narrow slice of information
- (3) The input of an EPM tells an organism the particular adaptive problem it is facing
- (4) The input of an EPM is transformed through decision rules into output
- (5) The output of an EPM can be physiological activity, information to other psychological mechanisms, or manifest behaviors
- (6) The output of an EPM is directed toward the solution to a specific adaptive problem.

Therefore, the human mind is conceptualized as being comprised of numerous, domain-specific, modules, each designed to process information related to a particular adaptive problem and produce an output that will mitigate it. Such a conceptualization is useful for understanding why, when it comes to social dynamics, human behaviours are so often irrational, counterintuitive, hypocritical, and even dangerous. Social behaviour, including political violence, provides the perfect example of the mind as a disjointed system of many relatively independently functioning information processors.

## Evolution of Human Group Dynamics

Humans have been shaped through selection pressures to be extremely social<sup>17</sup>, a characteristic shared by the closest phylogenomic relatives to humans. Indeed, group living is common in all species of the *Hominidae*

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<sup>15</sup> David M. Buss et al., "Adaptations, Exaptations, and Spandrels," 535–538.

<sup>16</sup> Buss, *Evolutionary Psychology: The New Science of the Mind*, 44–45.

<sup>17</sup> Robert Axelrod and William D. Hamilton, "The Evolution of Cooperation," *Science* 211, (1981): 1390–1396.



family, bonobos (*Pan paniscus*)<sup>18</sup>, chimpanzees (*Pan troglodytes*)<sup>19</sup>, and gorillas (*Gorilla gorilla*)<sup>20</sup> with the genus *Pongo* being the notable exception<sup>21</sup>. Living in groups must have produced many benefits in order for it to become common among primates and ubiquitous for humans (see Lidfors, 2018 for a review<sup>22</sup>). For instance, living in a group of allies provides an individual protection from rivals (as well as potential predators). Parenting responsibilities could also be shared amongst kin living in close proximity. Learning can also take place between individuals. Coalitions working together could produce a food surplus, first through hunting larger game, and then from the advent of agriculture. Access to high-quality, calorie-rich, nutrient-dense food sources has been hypothesized to be the turning point for human evolution, as it produced circumstances that favored the evolution of the relatively large, and complex cerebral cortex and intelligence of humans<sup>23</sup>. Perhaps not antagonistic to this idea, it has been proposed that the increase in size of a species' typical social group is directly related to the evolution of larger, more complex neocortices in primates<sup>24</sup>. Undoubtedly, ingenuity and creativity have allowed humans to solve adaptive problems in novel ways. For instance, other animal species are able to live in cold climates as a result of the long process of evolving physical adaptations such as blubber and thick fur. Humans lack such physical adaptations but have been able to survive and thrive in cold climates largely due to creating other solutions, such as fire or wearing the pelts

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<sup>18</sup> Craig B. Stanford, "The Social Behavior of Chimpanzees and Bonobos: Empirical Evidence and Shifting Assumptions," *Current Anthropology* 39, no. 4 (1998): 399–420.

<sup>19</sup> Frans B. M. de Waal, "The Integration of Dominance and Social Bonding in Primates," *The Quarterly Review of Biology* 61, no. 4 (1986): 459–479.

<sup>20</sup> Juichi Yamagiwa, John Kahekwa, and Augustin Kanyunyi Basabose, "Intra-specific Variation in Social Organization of Gorillas: Implications for Their Social Evolution," *Primates* 44 (2003): 359–369.

<sup>21</sup> Anne Russon, "Orangutans," *Current Biology* 19, no. 20 (2009): R925–R927.

<sup>22</sup> Lena M Lidfors, "Living in groups," In *Encyclopedia of Evolutionary Psychological Science*, eds. Todd K. Shackelford and Viviana A. Weekes-Shackelford, Springer, <https://doi.org/10.1007/978-3-319-16999-6>.

<sup>23</sup> Hillard Kaplan, Kim Hill, Jane Lancaster, and A. Magdalena Hurtado, "A Theory of Human Life History Evolution: Diet, Intelligence, and Longevity," *Evolutionary Anthropology* 9 (2000): 156–185.

<sup>24</sup> Robin I. M. Dunbar, "Neocortex Size as a Constraint on Group Size in Primates," *Journal of Human Evolution* 22, no. 6, (1992): 469–493.

(adaptations) of hunted animals. Such creative solutions to adaptive problems are exclusive to humans, despite similar tendencies to live in groups existing across the animal kingdom. Therefore, it's possible that human intellect co-evolved with the complexity of social groups.

In addition to sociality, many behaviours common to humans, such as non-reproductive copulations<sup>25</sup>, have been documented in other species of the *Hominidae* family. However, none of the Great Apes matches humans in the level of complexity in their social relations. Given the long evolutionary history of selecting sociality, human psychology is finely attuned to the behaviours of conspecifics. It is common wisdom that humans are very quick to form groups. Colloquially, anyone who has been to high school can attest to the intensity of human group dynamics. Sherif and colleagues (1961)<sup>26</sup> demonstrated the extremity of group processes in their famous Robber's Cave experiment. Adolescent boys taking part in a summer camp were arbitrarily separated into two groups, and then pitted against each other in a week of sporting competitions. The conflict between the groups escalated so much that the experimenters had to intervene to prevent violence. The main focus of the experiment was about how group tensions could be diffused in the process of forming a larger group with superordinate goals. In this case, two groups in competition with each other were combined to form a new group that was in competition against a shared, external problem, to great success.

Henri Tajfel<sup>27</sup> conducted classic social psychology research on the ease of group formation. Expounding upon Tajfel's minimal group paradigm, Rebecca Bigler and colleagues<sup>28</sup> have demonstrated that children can form

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<sup>25</sup> Joseph H. Manson, Susan Perry, and Amy R. Parish, "Nonconceptive Sexual Behavior in Bonobos and Capuchins," *International Journal of Primatology* 18, no. 5 (1997): 767–786.

<sup>26</sup> Muzafer Sherif, O. J. Harvey, B. Jack White, William R. Hood, and Carolyn Wood Sherif, *Inter-group Conflict and Cooperation: The Robbers Cave Experiment* (Norman, OK: The University Book Exchange, 1961).

<sup>27</sup> Henri Tajfel, "Experiments in Intergroup Discrimination," *Scientific American* 223, no. 5 (1970): 96–102.

<sup>28</sup> Rebecca Bigler, Lecianna C. Jones, and Debra B. Lobliner, "Social Categorization and the Formation of Intergroup Attitudes in Children," *Child Development* 68, no. 3 (1997): 530–543.

intense, and long-lasting group affiliation based upon the arbitrary assignment of t-shirt color. Even brief, random group assignment under laboratory conditions is enough to illicit negative attitudes towards adults who are (experimentally) swapped between groups, from the members of the original group who are not swapped – a migrant bias effect<sup>29</sup>. The latter study demonstrates in-group favoritism characteristic of human social dynamics. Besides the ease of group formation, humans demonstrate an (often) extreme preference for in-group members, and corollary aversion to out-group members. These preferences manifest both psychologically and behaviourally. For instance, individuals have a tendency to exaggerate the similarity of members of an out-group, as well as a tendency to underestimate the similarities of members of an in-group (out-group homogeneity effect<sup>30</sup>). Ambiguous behaviour is also more likely to be perceived as hostile when coming from strangers (i.e., out-group members<sup>31</sup>). Humans have likely evolved such biases as a means of managing the threats posed by other humans. Conspecifics would have represented a major danger, either through aggression or disease<sup>32</sup>. Therefore, aversion or apprehension about strangers would likely have benefited ancestral humans and acted as a solution to adaptive problems. The tendency for in-group – out-group prejudices, hostility, and even violence, is a lasting result of selection favoring the avoidance of the dangers posed by other groups.

Although living in groups dispenses ample benefits to have been selected across evolutionary history, it also posed unique adaptive problems between the constituents<sup>33</sup>. Generally, living in close proximity means that

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<sup>29</sup> Mark Rubin, Stefania Paolini, and Richard J. Crisp, "A Processing Fluency Explanation of Bias Against Migrants," *Journal of Experimental Social Psychology* 46, (2010): 21–28.

<sup>30</sup> Charles M. Judd, Carey S. Ryan, and Bernadette Park, "Accuracy in the Judgment of In-Group and Out-Group Variability," *Journal of Personality and Social Psychology* 61, no. 3 (1991): 366–379.

<sup>31</sup> William Nasby, Brian Hayden, and Bella M. DePaulo, "Attributional bias among aggressive boys to interpret unambiguous social stimuli as displays of hostility," *Journal of Abnormal Psychology* 89, no. 3 (1980): 459–468.

<sup>32</sup> Carlos D. Navarrete and Daniel M. T. Fessler, "Disease Avoidance and Ethnocentrism: The Effects of Disease Vulnerability and Disgust Sensitivity on Intergroup Attitudes," *Evolution and Human Behavior* 27, no. 4 (2006): 270–282.

<sup>33</sup> Lidfors, "Living in Groups".

individuals find themselves in competition for limited resources. The more of any shared resource (such as the food) than one individual takes for himself, the less of this resource available for the others in the group. Each individual's personal interests drive him to take as much of the resource as he can, a mindset that will eventually exhaust the resource. This situation has been described as the "tragedy of the commons"<sup>34</sup>. The tragedy of the commons represents one of the major adaptive problems that must be overcome for larger, more complex groups to evolve. One of the solutions is status hierarchies, whereby individuals are allowed priority access to a resource at the deference of others in the group (see Cummins, 2016)<sup>35</sup>. Status hierarchies are particularly common amongst pack hunting species, in which a kill must be immediately divided between the members of the group. Among species in which hierarchical structure is not fixed and inherited, there are two means of attaining status: dominance and prestige<sup>36</sup>. Dominance is status achieved through size and physicality. Prestige is status achieved through knowledge and skills. Thus, there are multiple means ancestral humans could have ascended status hierarchies. At the top of a hierarchical structure may be found another solution to the adaptive problems of group living: leaders. Delegating decision-making authority to select individuals is extremely useful in arbitrating the allocation of acquired and common resources, which would reduce conflicts over consumption. Leaders would also facilitate organization and coordination of joint efforts to accomplish a larger task through a division of labour. For example, a large animal would have been difficult and dangerous for one ancestral man to hunt on his own, but his success would be greatly increased (as would his companions') if he formed a coalition with other men to hunt. Such a coordinated effort would have been aided by the appointment of a leader. In exchange for such efforts the leader would usually

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<sup>34</sup> William Forster Lloyd, *Two Lectures on the Checks to Population* (Oxford: Oxford University Press, 1832).

<sup>35</sup> Denise D. Cummins, "Status and Social Hierarchies," in *Encyclopedia of Evolutionary Psychological Science*, ed. Todd K. Shackelford and Viviana A. Weekes-Shackelford (Springer, 2016).

<sup>36</sup> Joseph Henrich and Francisco J. Gil-White, "The Evolution of Prestige: Freely Conferred Deference as a Mechanism for Enhancing the Benefits of Cultural Transmission," *Evolution and Human Behavior* 22, (2001): 165–196.

receive larger, or more desirable, shares of resources. However, he would also face greater risks, such as during hunting, or from discontent within his group. Leadership entails the gamble of accepting risk in exchange for the possibility of greater rewards through cooperation. Coalitional action would not only be limited to hunting prey animals but could also be targeted towards other humans as well. This is the basis of modern political violence.

Only humans and chimpanzees have been observed forming coalitions that attack and kill conspecifics<sup>37</sup>. This phenomenon seems particular to males of both species. It has been hypothesized that men have evolved adaptations specifically designed to facilitate hunting and coalitional warfare (i.e. the male warrior hypothesis<sup>38</sup>. This is not to suggest that aggression is not common across all *Hominidae* species – it is, having evolved as strategy that confers advantages on the perpetrators. Buss and Shackelford (1997)<sup>39</sup> outlined seven adaptive problems for which aggression would be a solution: co-opting the resources of others, defending against attack, inflicting costs on same-sex rivals, negotiating status and power hierarchies, deterring rivals from future aggression, deterring mates from sexual infidelity, and reducing resource expenditure on genetically unrelated children (through infanticide). These adaptive problems are just as salient within the nebulous, modern geo-political structure as they would have been in ancestral human tribes. There is a debate about whether the culmination of aggression – homicide – is itself an adaptation<sup>40</sup>, or merely a non-selected by-product of violence surpassing its designed purpose<sup>41</sup>. Nevertheless, aggression remains in human societies as a result of

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<sup>37</sup> Manson et al., “Intergroup Aggression in Chimpanzees and Humans,” *Current Anthropology* 32, no. 4 (1991): 369–390.

<sup>38</sup> Melissa M. McDonald, Carlos D. Navarrete, and Mark Van Vugt, “Evolution and the Psychology of Intergroup Conflict: The Male Warrior Hypothesis,” *Philosophical Transactions of the Royal Society B: Biological Sciences* 367, (2012): 670–679.

<sup>39</sup> David M. Buss and Todd K. Shackelford, “Human aggression in evolutionary psychological perspective,” *Clinical Psychology Review* 17 (1997): 605–619.

<sup>40</sup> Joshua D. Duntley and David M. Buss, “Homicide Adaptations,” *Aggression and Violent Behavior* 16, (2011): 399–410.

<sup>41</sup> Martin Daly and Margot Wilson, *Homicide* (Hawthorne, NY: Aldine, 1988), 438.

intense selection pressures that have selected it over evolutionary time. The modern political landscape presents some slightly new manifestations of group dynamics that produce novel settings for the ancient adaptation of aggression.

## Political Violence

It is tempting to think of contemporary political violence as the product of political parties, nation states, mass media, or any number of recent innovations of group dynamics, but the antecedents of this violence are integral, evolved features of human behaviour. How then can political violence be defined in modern contexts? By its nature, violence should include aggression, which can be defined as any behaviour that is intended to harm another living organism<sup>42</sup>. Violence usually carries a connotation of severity of consequences. The World Health Organization<sup>43</sup> defines violence as: “The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation.” Therefore, violence connotes physical force, either real or threatened, with the intent of causing harm. Likewise, “political” indicates a relation to a system of human governance – deriving from Aristotle’s treatise *Politics*, “concerning the polis” (city state)<sup>44</sup>. Political violence can be considered the use of force among people for aims related to governance or leadership.

Politics is inherently social. Obtuse as this conclusion may be, it is important to clearly recognize that societies and governments only function as a product of, and through the maintenance, of human social interactions. It is easy to discuss politics as something “other”, existing and acting as

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<sup>42</sup> Jeff Greenberg, Toni Schmader, Jamie Arndt, and Mark Landau, *Social Psychology: The Science of Everyday Life, 2nd Edition* (New York: Worth, 2019), 448.

<sup>43</sup> Etienne G. Krug et al., eds., *World Report on Violence and Health* (Geneva: World Health Organization, 2002), 5.

<sup>44</sup> Jowett, Benjamin, trans., *The Politics of Aristotle*, (Oxford: The Clarendon Press, 1885).

an independent agent. Government and society are not purely external forces operating on individuals, like gravity or radiation. Rather, they are forces in which individuals take active participation. Yet, it is absolutely the case that the degree of involvement may vary between political systems, and between individuals within a given system. These discrepancies in involvement can be a source of conflict between groups. Modern instances of political violence, such as the protests in Hong Kong<sup>45</sup> (ongoing as of writing), can be thought of in the same light as a group of ancestral men revolting against a leader. Although this may seem reductionist, the core of the issue remains the same: the perception of inequity in resource distribution. Political rights and freedoms are perceived to be a resource, just as food, land, or mates would be. If one group monopolizes a resource at the expense of another, conflict will emerge.

Within a society, political violence may take many forms. At the pinnacle of intensity, political violence results in armed conflict between two or more groups – a civil war<sup>46</sup>. Likewise, the severest of intergroup conflict is easily discernable in the form of outright physical violence. Both within a society and between societies, the victors of a conflict stand to reap substantial rewards. Throughout human evolutionary history, coalitional warfare would have been a route for victors to gain resources, including and especially mates (see Savage and Palmer, 2016<sup>47</sup>). Although most of the Hong Kong protestors would not mention “finding a mate”, or “inequal resource allocation” as a cause for the violence directed towards the government, issues of wealth, freedom, and social status are unmistakably linked to the protests. These issues are by no means neutral to survival and reproduction, and thus human minds have evolved to attend to them. Therefore, at one level of analysis, political violence concerns local issues,

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<sup>45</sup> Bill Neely and Patrick Smith, “Inside the Hong Kong University Siege: ‘Some are scared, some have hope,’” *NBC News*, November 20, 2019, <https://www.nbcnews.com/news/world/inside-hong-kong-university-siege-some-are-scared-some-have-n1086591>.

<sup>46</sup> Timothy Besley and Torsten Persson, “The Logic of Political Violence,” *The Quarterly Journal of Economics* 126, (2011): 1411–1445.

<sup>47</sup> Chet R. Savage and Craig T. Palmer, “Sexual Access as a Benefit of War,” in *Encyclopedia of Evolutionary Psychological Science*, ed. Todd K. Shackelford and Viviana A. Weekes-Shackelford (Springer, 2016).



such as universal suffrage, but at another level of analysis, most of these local issues are related back to adaptive problems related to survival and reproduction. This difference in levels of analysis distinguishes the proximate and ultimate causes of behaviour, derived from Tinbergen's (1963) famous four questions<sup>48</sup>. Proximate levels of explanation consider the mechanisms of how a behavior is produced, while ultimate explanation account for why, from an evolutionary perspective, the behaviour exists<sup>49</sup>. Often, proximate causes are rooted in ultimate causes. Therefore, political violence may occur because a populace dislikes a certain law enacted by the government, or because one group has developed antipathy towards a rival group, but the reason these conflicts exist is because of the activation of psychological adaptations responding to perceptions of adaptive problems, such as conditional acquiesce to leadership, out-group threats, and resource allocation.

As a final example, evolutionary theory provides useful explanations for phenomena that are intuitively difficult to understand, such as suicide terrorism. The topic of evolutionary psychology and terrorism is expansive, worthy of book length coverage<sup>50</sup>, but it can be briefly introduced presently. Suicide terrorism seems contrary to adaptations that have been built to aid an organism's survival and reproduction. It is difficult for most people to comprehend how a person could decide to sacrifice his/her own life for the purpose of ending the lives of strangers. Religiosity has been stressed as both a proximate and ultimate cause for suicide terrorism (religion itself being evolved) but does not itself constitute a sufficient cause since many religious people do not engage in suicide terrorism<sup>51</sup>. Kin selection may provide the route through which suicide terrorism is maintained. In his

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<sup>48</sup> Niko Tinbergen, "On Aims and Methods of Ethology," *Zeitschrift für Tierpsychologie* 20, (1963): 410–433.

<sup>49</sup> Ernst Mayr, "Cause and effect in biology," *Science* 134, (1961): 1501–1506.

<sup>50</sup> Max Taylor, Jason Roach, and Ken Pease, eds., *Evolutionary Psychology and Terrorism*. (New York: Routledge, 2016).

<sup>51</sup> James R. Liddle, Lance S. Bush, and Todd K. Shackelford, "An Introduction to Evolutionary Psychology and Its Application to Suicide Terrorism," *Behavioral Sciences of Terrorism and Political Aggression* 3, no. 3 (2011): 176–197.



seminal 1964 work, Hamilton<sup>52</sup>, explained how traits can be selected via kin selection, even if they are deleterious to an individual organism. As mentioned, evolution operates on the level of the units of inheritance – genes. A trait that is harmful to an individual can still be selected if it is sufficiently beneficial to the individual’s relatives, who share genetic similarity to the individual. From the gene’s perspective, the harm to an individual is offset by the benefits to others who are likely to carry the same gene. This is an alternate way in which genes may increase their prevalence in a population. Liddle and colleagues<sup>53</sup> point out that suicide terrorists are usually acclaimed as martyrs within their groups, and their families often receive financial and social status benefits for the sacrifice of their kin. Thus, the genes of the suicide terrorist may not replicate through linear reproduction but may increase the likelihood that the copies of the genes shared by the terrorist’s kin are more successful in survival and reproduction. Even when tangible benefits for the family do not materialize, the kin altruism mechanisms may be “hijacked” by the strong group affiliation within such militant organizations that mirrors kinship patterns. It is no accident that terrorists may refer to each other using kin designations such as “brother”. Such associations may trigger psychological mechanisms that are designed to respond and provide benefits to genetic relatives. Such considerations may not be made consciously by terrorists, but the results are the palpable. Thus, suicide terrorism provides a useful illustration of how human evolved psychology could produce behaviours that, on the surface, seem to be counterintuitive to the process of natural and sexual selection.

## Conclusion and Future Directions

The extraordinary benefits of living in groups have driven human evolution to an extreme sociality that has, at least in part, contributed to the extraordinary success (in terms of population growth, and expansiveness

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<sup>52</sup> William D. Hamilton, “The Genetical Evolution of Social Behavior, I and II. *Journal of Theoretical Biology*, 7 (1964): 1–52.

<sup>53</sup> Liddle et al., “An Introduction to Evolutionary Psychology and Its Application to Suicide Terrorism,” 188.

of inhabited environments) of the species. Living in groups carries specific adaptive challenges which have subsequently driven adaptations. The complexities of modern political systems are inherently rooted in evolved, coalitional psychologies. The affiliative nature of humans disposes a quickness for group formation, and strong demarcation of in-group and out-group members. As such, human group dynamics across history, and today, are marked by aversion to out-group members, and tendency for violent confrontation when individuals of one group feel threatened by another group. It is worth noting that acknowledging that aggression is a human adaptation is an acceptance of neither inevitability nor acceptability, much in the same way that the ability to convert excess calories into fat stores in adipose tissue for future use is not accepted as inevitability condemning humans to morbid obesity and the associated shortened lifespan<sup>54</sup>. The success of policies designed to reduce (political) violence will be determined by the strength of the research on which they are based. Therefore, future research will need to improve in order for major behaviour consequences to be implemented.

One of the directions for future research is further identifying and disentangling individual characteristics that dispose specific acts of political violence. Just as not every religious person engages in acts of terrorism, neither do all individuals perpetrate violence during times of inter-group conflict. There have been countless studies attempting to identify variables associated with the perpetration of violence, including individual features such as personality, neurology, and endocrinology; as well as external features such as childhood experience, and socioeconomic status. However, a further refinement of these numerous independent and dependent variables is needed. Political violence is not homogenous, therefore, there are probably meaningful differences in, for instance, willingness to perpetrate physical violence against fellow citizens within a given nation-state who differ in political ideology, and willingness to perpetrate violence against individuals outside of one's country. Given the strong in-group, out-group distinctions that humans naturally draw, this research would investigate

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<sup>54</sup> David W. Haslam and James W. Philip, "Obesity," *The Lancet* 366, no. 9492 (2005): 1197–1209.

differences in exactly where and why individuals differ in where they draw the line of “one of us” and “one of them.” Individuals draw dozens, maybe hundreds of such lines in their lives, but are not necessarily equally prone to violence against all out-groups. For some, racial differences are more salient than national differences, while for others, religion is primary variable for group affiliation. Of course, these grouping variables may not always be independent of each other. The complex interactions between individual differences in in-group categorization and out-group violence will require many additional studies, data, and sophisticated statistical modeling in order to represent these relationships.

The extant literature on human violence is already truly massive and in desperate need of replication, revision, refinement, and coalescence. Such an undertaking would be herculean, and possibly even outside of human capacity. However, one of the “dirty secrets” about the study of human behaviour, is the incompleteness of the disciplines. As yet, no metatheory has been established to comprehensively unite the breadth of research on the human mind and behaviours. Attempts to do so recall the South Asian parable of the blind men attempting to describe an elephant, with each touching a different part (trunk, tusk, tail, etc.) and subsequently summarizing the nature of the elephant in a partially correct, but incomplete manner (cited in Larsen and Buss<sup>55</sup>). Until all of the research collected thus far has been catalogued and analyzed in relation to each other, researchers and policy makers will continue to misunderstand human behaviour and implement ineffective and costly practices in the attempt to mitigate violence. Perhaps the greatest potential for future research lies in artificial intelligence, super computers, and machine learning. Any potential scientific theory about human violent behaviour would have to synthesize the glut of existing data. Simply compiling all of the relevant studies could take an entire lifetime for human, perhaps even longer. Artificial intelligence could much more quickly scan, identify, and catalogue the numerous relevant studies. Extremely fast information processors would also be

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<sup>55</sup> Randy J. Larsen, and David M. Buss, *Personality Psychology: Domains of Knowledge about Human Nature 6<sup>th</sup> Edition* (New York: McGraw-Hill, 2017) 13–14.

needed to analyze the sheer volume of data and model the variables. Hypothetically, the output would be a theory represented mathematically in an algorithm that organized all of the relevant variables needed to predict human violence. Such an algorithm would likely be colossal and compose hundreds, maybe thousands, maybe millions, maybe billions of variables. Thus, the ultimate goal for research on human violence, and behaviour more generally, needs to be finding a way to leverage emerging information processing technologies to synthesize existing research into a workable theory that can limit the scope and precisely direct future research. The process of scientific research is much less efficient than it could be, and metascience and the philosophy of science need to consider these questions about how the process of gathering information about the natural world can be improved as new technologies emerge in the 21<sup>st</sup> century. Such recommendations may seem lofty and tangential to an introduction to evolutionary psychological perspectives on political violence, but such considerations need to be made in order to move the discipline forward and come closer to actually answering the questions being asked. Most importantly, such improvements will help to mitigate and prevent the effects of human violence.

In closing, it is worth noting, that at present, the goal of living in a frictionless, peaceful society is beyond the capacity of the human species. Thomas More was truly correct when labeled such a paradise as *Utopia* – “nowhere”<sup>56</sup>. As outlined, living in groups presented adaptive problems for which aggression has been a useful solution. Assuming that humans can transcend their deeply evolved minds simply through collective desire and demands is naïve. Yet, it is equally untrue that evolution conveys genetically determined<sup>57</sup>, or unchangeable adaptations<sup>58</sup>. Evolutionary psychologists are quick to point out that evolutionary history is not a necessary

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<sup>56</sup> James Romm, “More’s Strategy in Naming the Utopia,” *The Sixteenth Century Journal* 22, no. 2 (1991): 173–183.

<sup>57</sup> Laith Al-Sharaf, Kareem Zreik, and David M. Buss, “Thirteen Misunderstandings about Natural Selection,” in *Encyclopedia of Evolutionary Psychological Science*, ed. Todd K. Shackelford and Viviana A. Weekes-Shackelford (Springer, 2018).

<sup>58</sup> Cosmides and Tooby. “From Evolution to Behavior: Evolutionary Psychology as the Missing Link.”

future<sup>59</sup>. Advancing scientific theories that accurately summarize human behaviour as emerging from an evolved psychology, is the best hope for successful policies that will reduce (political) violence. It is a towering goal, but if scientific progress is made in the giant leaps described above, there is every reason to believe that more effective policies can be implemented. However, the potentially dramatic efficiency of a metatheory of human (violent) behaviour, would raise additional questions about the ethics of application. These considerations are grave and will need serious deliberation in due course. Drawing conclusions now would be premature, however, it is better to have these primary discussions before such applications are made. Studying evolution by natural and sexual selection can help explain the present, but science and technology are advancing at a pace that leaves it difficult to predict the future of human political violence.

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<sup>59</sup> Al-Sharaf et al., "Thirteen Misunderstandings about Natural Selection."

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