

## Introduction and Overview

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Consider the following question. What would be likely to happen if a group of humans was returned to a ‘state of nature’, divested of the elaborate mechanisms of control that we assume restrain our impulses in everyday civilised life? Many people would probably expect that the likeliest result would be a breakdown of order and a resurgence of primeval self-interest, with increasing aggression, possibly spiralling into violence. This is the theme of William Golding’s dystopian novel *Lord of the Flies*, published in 1954. It is the imagined story of a group of British schoolboys shipwrecked onto a remote oceanic island. While they initially agree a set of rules for communal living, their behaviour soon deteriorates. Factions emerge, and hostilities erupt, followed by ghastly murderous violence. The book became a worldwide best-seller and was later turned into a stage play and several film versions. It was placed on reading lists in schools and colleges in many countries. The story appears to confirm what many people assume: that once the veneer of socialised conduct is stripped away, human beings naturally resort to ‘the law of the jungle’ based on evolutionary survival strategies.

In 2018 a Swedish documentary maker, Magnus Lindeen, produced a film about a social experiment which tested this idea. The experiment took place in the 1970s and involved a group of strangers who agreed to be cast away for three months on a specially designed raft, the *Acali*, to be sailed across the Atlantic Ocean from Spain to Mexico. The film included original footage from the journey and interviews with the surviving members of the group who met in Stockholm to recall their experiences of the expedition (Lindvall, 2018). The experiment itself was set up by a Mexican anthropologist, Santiago Genovés, who had previously taken part in the celebrated *Ra* expeditions, led by Thor Heyerdahl. The idea was to recreate a “state of nature” and to examine how the six women and six men in the crew, including Dr. Genovés himself, behaved toward each other as the journey progressed.

The anthropologist fully expected that due to the intense pressure of communal living, and lack of any privacy, relationships within the group,

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including sexual rivalries, would gradually descend into enmity and violence, a regression similar to the fictional one imagined by Golding. However, the participants initially cooperated happily and showed little sign of mutual hostilities. When Genovés then deliberately tried to incite conflict between them by exposing confidential comments they had made about each other, it had the opposite effect of uniting the group against him.

The course of this “real world” experiment calls into question the prediction above that without the surrounding structures of orderly society, humans will naturally revert to distrust, antagonism, and “brutish” behaviour. This investigation cannot of course on its own disprove the possibility of that happening. But it shows it is by no means inevitable, and that our capacity for cooperation and mutual aid is as firmly rooted, if not more so, than any inclination to resort to selfishness and aggression in order to survive.

This book poses a major question that arises from this debate: Is violence ‘hard-wired’? Is the tendency to be violent, in other words, a fixed and elemental feature of the human brain which cannot be significantly changed and which will always exert a destructive influence on human behaviour? This is one of the fundamental questions of philosophy which has been debated over the last two millennia. It is also a key topic for the biological, psychological and social sciences, and any conclusion has substantial implications for how societies organise and police themselves. A decisive answer to this question is still unavailable and may remain out of reach for many years to come. But the persistent and pessimistic tendency to view many people as born with a predisposition to act aggressively toward others and beyond a ‘cure’ is open to serious challenge. Such a view of human behaviour can lead to unnecessarily restrictive and punitive interventions which are unjust for the individual and needlessly costly for society. Current scientific research and international policy developments actually suggest that much can be done to prevent and intervene successfully with many kinds of violent behaviour. This supports the idea that violence as a concept can itself be ‘rewired’ to enable new possibilities in constructing a safer and more peaceful world.

This book focuses on that major issue and has three main aims. The first is to draw together and evaluate the implications of recently acquired knowledge about human violence from across the full spectrum of scientific disciplines. This knowledge offers fresh perspectives and a new understanding of why violence occurs and what the main approaches to reducing it should be. The second aim is to address the pessimism which often pervades discussions about this problem by

emphasising the potential for greater confidence about effectively intervening with violent people and in violent situations. It is true that we are a long way from eradicating violence, and we may ultimately never succeed in doing so, but nevertheless we have made much progress in the past few decades in designing new ways of successfully understanding and working with those who act violently. The third aim here is to link the full range of interventions currently being developed and tested around the world to a global strategy for tackling the problem, which has been established by the World Health Organization. This strategy offers the opportunity to integrate and implement effective interventions on a scale that has not been considered before. Taken together, the potential synthesis of new knowledge, greater confidence and innovative international policy makes it timely for a 'new look' at the old problem of human violence and offers the prospect of a major step forward in producing a safer world.

## I.1 Background

The scientific literature on human violence is now very extensive. As it grows larger on an almost daily basis, any attempt to cover it in its entirety is an almost insuperable task. So we have attempted here to give at least a sense of what the key recent developments have been. While this is not a systematic review of all research relevant to violence, it is an attempt to undertake a comprehensive survey of recent innovations across the breadth of scientific disciplines which can contribute to an improved understanding of causes, and thereby provide potential remedies. The potentially baffling mass of information now available can be summed up using a number of integrative concepts, and here we have used the *biopsychosocial model*. The complexity of violent behaviour and the multiplicity of factors which lead to it mean that the lenses of biology, psychology and sociology are all needed in various combinations to capture the full picture. Any single violent act will have both immediate triggers and background influences which converge to make it more likely a violent response will be elicited. Some violent acts will be primarily driven by neurological damage; different forms of it will arise from powerful emotions or personal conflicts; while other violence will be mostly generated by social conditions. The end point of harm to another person may be the same, but the focus of solutions (from clinical treatment to political change) will be very different according to the immediate triggers and the more distant background factors leading to the act. Adopting a biopsychosocial approach enables an examination of violence which is comprehensive and systematic. It reflects the real complexity of

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the problem while providing a conceptual structure for the huge diversity of data and theory in this area.

We approach the problem of violence here from a direction which emphasises the potential for real change toward less interpersonal violence in many parts of the world, and in this respect we follow in the footsteps of Norbert Elias and Steven Pinker. Together these authors have developed and revitalised the idea that human beings are becoming less, not more violent, over time (Elias, 2000; Pinker, 2011) and that this improvement has been achieved through concerted action at the level of both society and the individual. Contrary to compelling evidence that the twentieth century was the most lethal period in human history, Pinker provides extensive data on reductions in the frequency and severity of human violence over several thousand years. Thus while there was a high level of lethality in the twentieth century in terms of absolute numbers, it is argued that the proportionate rate of violent death was less than it had been in many previous eras. Pinker (2011) summarises a number of possible explanations for this apparent trend, including the pacification of societies and the empowerment of women. His analysis has been criticised a number of times particularly in terms of the quality of the data which he uses to make the case for a reduction. Inevitably, given his wide historical scope ranging from prehistory to the present, much of the evidence is speculative at best. Estimates of the number of people killed in ancient massacres involve a large element of guesswork, and rely on many assumptions that may be questionable. We in contrast are more closely focused in timescale while remaining broad in theoretical scope and using systematic reviews of the research evidence as much as possible. The emphasis here is only on trends since 1945 but the message is largely the same, and the data, like those presented by Pinker for the same time period, while still flawed in some respects, are generally more robust. We also operate with an awareness of the importance of recent, more nuanced views of these broad historical patterns. Wrangham (2019), for instance, argues that any overall historical trend could mask contrasting processes with a tendency for humans to become less violent in some ways but not in others.

In contrast to these observed trends, the common view of human violence is often pessimistic, tending toward the belief not only that people are more violent now than they have ever been but that the roots of this violence are fixed aspects of 'human nature'. Violence, in other words, is widely seen as 'hard-wired', metaphorically creating a picture of human cognitive and neural structures as primarily if not entirely a result of biological evolution, genetically programmed at the individual level,

and in that respect immutable. This ‘mark of Cain’ perspective ranks nature clearly over nurture and Hobbes’s image of short, brutish lives over Rousseau’s idea of a natural human capacity for benign social relations. Our contention underpinning the book is that, when the evidence on the psychosocial causes of violence and the effectiveness of violence interventions are considered, such pessimism is unjustified. While we are nowhere near a solution yet, there is plentiful evidence of incremental reductions in the propensity for human violence when a systematic and intensive approach is taken to working with violent individuals and their relationships with those around them.

The potential for change has accelerated in the past two decades because of recent significant developments in global policy toward the problem of human violence. Since 2000 the World Health Organization (WHO) has been actively pursuing a coordinated public health approach to interpersonal violence which, given its remit and global reach, has the capacity to impact the problem worldwide and not only in rich countries. This Global Campaign for Violence Prevention provides a framework for national programmes designed to tackle violence using evidence-based, largely psychosocial, approaches. In this book we attempt to map the elements of the biopsychosocial approach onto this framework and to examine the evidence for various types of intervention which are endorsed by it. Such an integration of science and global policy shows the potential for national governmental action to address the problem.

Taking these elements of knowledge, and slightly recasting the metaphor employed earlier, renewed confidence, and innovative policy together create the possibility of violence being ‘rewired’. We are not here proposing any new biological rewiring via novel neural pathways or connections. On the contrary, we wish to rewire the biopsychosocial model itself by rebalancing the emphasis given to each of the different elements within it and the pathways between them.

When initially formulated by Engel (1977) the biopsychosocial model was viewed as an important innovation, even though at that stage the psychological and social elements were in some respects adjuncts to the biomedical domain rather than being assigned genuinely equal weight. The idea’s status was later searchingly questioned by McLaren (1998), who did not consider that it possessed the essential ingredients of a scientific model and considered it wholly unsuitable for use in psychiatry, a view shared by Benning (2015). Even when its level of acceptance was appraised twenty-five years after Engel’s proposal, that was still within a primarily clinical focus (Borrell-Carrió et al., 2004). More recently its application has been endorsed, though for different sets of reasons, by several authors. Smith and colleagues (2013) argued that the model can

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be used in a way that is thoroughly evidence-based. Lehman et al. (2017) added ‘systems dynamics’ elements to it which they considered strengthened its validity and applicability. Wade and Halligan (2017) regarded it as affording the best prospect of viewing healthcare problems from multiple perspectives and of delivering appropriate services accordingly. The last suggestion comes closest to uniting the model with a public health approach to a problem such as violence.

Even within this supposedly integrative approach, the traditional view that violence is hard-wired and built-in remains tenacious. The biochemical or neural levels of explanation are almost always presented as preceding and underpinning the psychosocial levels, and the latter end up assimilated into an overarching biological framework. So biopsychosocial models can superficially appear inclusive and comprehensive, but almost invariably they tend to privilege the bio- over the psychosocial (Boyle, 2013; Johnstone et al., 2018). Reconceptualising this model based on current evidence involves understanding that all three levels are in an ongoing dynamic, interactional, and interdependent relationship with each other and that psychological and social factors can influence the biological just as much as the reverse. Being powerless, for instance, has significant psychological and biological consequences. ‘Rewiring’ in this way also reminds us that the neural circuitry that exists can be changed by effective interventions, and new pathways can be forged between each of the domains. Rapidly increasing discoveries in the study of neural plasticity are an example offering new insights into the possibilities for change at both individual and cultural levels (Costandi, 2016). In this context, an *ecological model* may be more suitable to capture the intricacies of the interconnections between levels in any comprehensive explanation of human violence and thus as the basis for effective public health interventions (Heise, 1998). This approach complements the biopsychosocial model in some respects by again drawing on factors from different levels. But rather than integrating variables to explain action at an individual level, it also represents an attempt to explain the societal and cultural context of violence, and can thereby lead to proposals for addressing such issues at a far broader level. We draw on this model to complement our overall approach at various points below.

## 1.2 Defining Terms

Before proceeding further, it is crucial to address the scope of our focus on violence, the important issue of definitions, and the differing forms of violence covered in this book. This is a formidable task: the patterns by which aggression can be expressed are enormously varied. Aggression

can be manifested, and violence can ensue, from an almost bewildering array of situations. These range from conflict between siblings, playground bullying, sexual rivalries, family feuds, gang fights, affrays in bars, or road rage to parental abuse of children, partner violence, workplace harassment, street robbery, human trafficking, rape, homicide, familicide, torture, and further onward in scale and seriousness to massacres, war, and genocide. Thus the terms *aggression* and *violence* cover an enormous variety of actions, of the processes believed to underlie them, and of the differing patterns they take. To date, as far as we can discern, no one has produced a satisfactory definition of these terms that has achieved a consensus across the range of fields in which they are studied. The two words are sometimes used interchangeably, despite widespread agreement that they refer to different phenomena. But they are very difficult to separate, and there are several ways in which their meanings overlap. One difficulty central to this is the difference between behaviour – the physical actions people make and the things they say – and the thoughts or feelings that precede or accompany them and may give rise to them. That could be seen as a difference between external (violent) and internal (aggressive) events. But behaviour is also sometimes described as aggressive; and thoughts or feelings are often described as violent.

*Aggression* is most frequently used to describe the experience or expression of antipathetic reactions on the part of one person toward another, though they may also be directed against the self. In either case they may consist of thoughts, feelings, attitudes, motivations or behaviours, but in each case they typically involve an urge to demonstrate those reactions or to inflict damage or some other unwelcome outcome on the recipient. The latter, in Baron and Richardson's (1994) widely used phrase, is generally 'motivated to avoid' such an occurrence. Words used to depict this include anger, acrimony, hostility, hatred, fury, rage, vengefulness or spite.

The word *violence* is more often, though by no means exclusively, used to refer to observable behaviour. It entails the direct infliction of physical, sexual, emotional or other forms of harm on another person. That can be done by assault on the body of the person, and traditionally, a focus on this has been central to most definitions codified in legal statutes in the criminal law. However, the meaning of *violence* has been progressively extended in recent years to include verbal utterances of the kind linked to some of the feelings just mentioned. It is now considered as also including coercive control of one person by another (as in some forms of partner violence or personal intimidation), and more widely still to encompass any situation in which any person is wilfully deprived of legitimate rights by someone else (as in slavery or human trafficking).



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The foregoing outline primarily describes what are sometimes called *direct* forms of violence. The perpetrator acts in such a way as to cause bodily or psychological harm to the victim. Equally however, both aggression and violence can be *indirect*, as when someone spreads a malicious rumour about another person, undermines them by removing beneficial opportunities, ignores or marginalises them ‘passive-aggressively’ or deprives them of the essentials of life as in child neglect.

The WHO have tackled this issue of definition by characterising interpersonal 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, mal-development or deprivation’ (World Health Organization, 1996: cited in Krug et al., 2002), p.5. Subsequently it has been specified as that violence ‘which occurs between family members, intimate partners, friends, acquaintances and strangers’ and includes child maltreatment, youth violence, intimate partner violence, sexual violence, and elder abuse (World Health Organization, 2014, p. vii). We follow here the WHO approach of distinguishing interpersonal violence from warfare, which, as a form of collective or organised violence, has its own dynamics and special complexities. This leads us to include all types of physical violence from fighting to homicide occurring between two or more people within an otherwise largely pacified society. Obviously there are areas that are difficult to classify; for example, gang warfare in a fragmented society is a form of interpersonal violence bordering on civil warfare. However, the existing distinctions are worth maintaining.

Our core focus here therefore is on aggression as defined by Baron and Richardson (1994) as any act intended to harm another person who is motivated to avoid such harm. We include many types of violence within this core psychological focus, but a central concern is what creates within a person a tendency toward *aggressiveness* defined by Berkowitz (1993, p. 21) as ‘a relatively persistent readiness to become aggressive in a variety of different situations’. We include psychological aggression in the absence of physical violence, especially family abuse which causes suffering in itself but is also a common precursor of future violence. To reflect the biopsychosocial approach, in places we also acknowledge the arguments for expanding this psychological definition to incorporate sociological ideas of structural violence based on wider forms of rights violations, such as economic exploitation. We remain, however, concerned with violence by one person or group toward another. Regrettably we exclude here review or discussion of the problem of suicide, which globally leads to more deaths each year than



criminal homicide. We regarded this as requiring discussion of many other factors and as being beyond the scope of the present inquiry.

There is one other important distinction worth noting, in conceptualising the difference between *reactive* and *instrumental* aggression. The former refers to aggression that follows directly from feelings of anger, hostility or other strong emotions, which are discharged in response to perceived threat or provocation; this is sometimes said to have the objective of reducing an unpleasant or aversive internal state in the aggressor. Given its connection to the ‘heat of the moment’, and the discharge of negative feeling, this is sometimes called ‘hot’ aggression. Instrumental aggression, on the other hand, denotes situations where aggression is used, or individuals are prepared to use it, in a planned or premeditated way to achieve some other purpose, for example in the crime of robbery. This is sometimes described as ‘cold’ aggression. While the usefulness and even the validity of this distinction has been criticised by some researchers, mainly because the two patterns sometimes overlap, there is good evidence that it is meaningful to separate them, based on both psychometric (Cornell et al., 1996; Polman et al., 2007) and neuropsychological (Baker et al., 2008; Tuvblad et al., 2009) research.

### I.3 Context for This Book

The genesis of this book was a systematic review which we and others conducted to examine the effectiveness of risk assessment tools and interventions for predicting and managing violence (Hockenhull et al., 2012; Leitner et al., 2006; Whittington et al., 2013). That review was commissioned in 2001 by the main health research funding body in England and was deliberately and unusually broad in its scope while retaining the rigour of ‘gold standard’ systematic review procedures. Some aspects of the review are discussed below in Chapter 8 in relation to pharmacological interventions for violence. Conducting the review made us aware of both the strengths and weaknesses of the current evidence base in relation to violence prevention and treatment. The literature is very large and contains evidence of some effectiveness in reducing the propensity to act aggressively in both clinical and non-clinical groups of violence perpetrators. Significant improvements have been demonstrated with high-risk individuals who have lengthy histories of violence using psychological, pharmacological, and environmental interventions. On the other hand, some of these improvements are quite short-lived, or at least are only measured over short time periods such as a matter of months, and need to be replicated if they are to be trusted as truly robust. Equally, understanding the changes that occur requires a

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broader overview of why violence arises, including an awareness of both physiological and psychological factors and a contextualisation of violent behaviour within political structures which generate injustice and persecution. So here we have taken the wide-ranging evidence-based emphasis of the original review and attempted to integrate it within a broad conceptual framework that can be mapped onto national policy objectives. In this way we hope current scientific knowledge can be used to improve and advance strategies to address violence as a public health issue.

We have written this book with two audiences primarily in mind. The first group is policymakers working at all levels within national and local governments who need an overview of the key strategies that can be adopted to address interpersonal violence in their country. Working from a public health perspective which emphasises prevention as much as possible over treatment and management, we discuss here the wide range of potential interventions that can be considered to tackle this problem. Some of these interventions map onto the WHO's 'best buy' strategies identified in Chapter 6, but others with credible evidence beyond this 'menu' are also considered. The second audience we have in mind is practitioners across those disciplines with an academic or clinical interest in the problem of interpersonal violence who wish to locate their expertise within the broader biopsychosocial framework. Psychologists, for example, will likely have a firm grasp of the cognitive and behavioural approaches discussed in Chapters 4 and 9 but may wish to contextualise these in a broader framework. The framework here thus incorporates biological and sociological perspectives within an action-oriented public health approach to the problem of violence. Alongside these two specialist groups, we also hope to interest a wider public audience who are concerned about the issue of human violence. We have therefore aimed to keep the discussion here relatively non-technical and to avoid an over-reliance on specialist terms as much as possible.

**I.4 Plan of the Book**

The book has two parts – the first concerned with explanations of why people act violently and the second with interventions which have been used to address the problem. We begin in Part I by taking a state-of-the-art look at a range of theoretical perspectives, each of which views the problem of violence differently. Each of these perspectives has generated important evidence which must be considered in designing health-based strategies for tackling the problem. In Chapter 1 we set the scene by examining recent trends in the prevalence of human violence and

different health-related ways of viewing the concept of violence. In Chapter 2 we look at the origins of human violence through the lens of evolutionary theory where we start to challenge the view that violence is a 'hard-wired' feature of human conduct, i.e. an element of our biological nature from which we cannot escape. In Chapter 3 we consider the genetics of violence and evaluate the status of evidence concerning the possible role of hereditary factors in creating persons disposed to act violently. In Chapter 4 we consider the various psychosocial processes which can underpin the development of a propensity toward the use of aggression. We then end Part I with an examination of the idea of structural violence and its various permutations in Chapter 5. Violence is a multifaceted subject and many other angles could be adopted to view the problem. But we believe these various biopsychosocial perspectives cover much of the field and provide a strong foundation for the public health approach.

In Part II we shift toward an emphasis on potential solutions derived from the fundamental perspectives in Part I. In Chapter 6 we examine the WHO strategy in detail as it provides a policy platform for large-scale evidence-based interventions based on national action plans. In Chapter 7 we examine research-led advances in the field of violence risk assessment and consider how well any proneness to violence can be identified, at least in individuals considered to present some elevated risk. The final three chapters then explore the recent evidence on interventions for violence-prone individuals. These are considered, respectively, at the pharmacological level (Chapter 8), the psychosocial level (Chapter 9) and finally at the broader social level using multilevel programmes tackling structural and other factors (Chapter 10). We conclude with an outlook toward the future in terms of developing effective interventions rooted in a comprehensive understanding of the phenomenon of human violence. Effective interventions for violence are emerging and improving at a steady pace and the potential for an evidence-based solution to this enduring problem has never been greater.