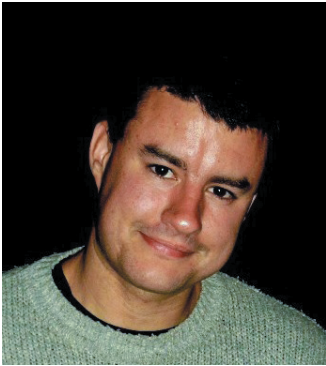


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Verbal and Non-verbal Communication as Evolutionary Restraint Mechanisms for Nonkilling Conflict Management





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Cover photo: Fisherman's mark on an oar (A Guarda, Galiza).
Photograph by Iolanda Mato Creo.



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Abstract

Across species, unrestrained aggression among con-specifics has been strongly selected against due to increased fitness costs, making intraspecific lethality relatively rare or atypical. Evolutionary selection has instead favoured mechanisms for rule-based ritualized restraint such as song duel display contests or mark-making practices related to territory. These mechanisms fall within an escalating fan of agonistic behaviours ranging from avoidance to various forms of non-contact displays and restrained ritualized forms of aggression. This dissertation considers the role of restraint mechanisms for the prevention of potentially lethal aggression as an evolutionary driver for the development and complexification of hominin communicative abilities, including articulated language and symbolic cultural practices.

‘Talking,’ ‘singing,’ ‘marking,’ or ‘reading’ oneself –and whole groups– out of potentially lethal aggression offer greater chances of survival than a pattern of unrestrained ‘all-out’ physical fighting. Studies I and II start out by presenting ethnographical evidence from Galizan case studies of song duels and mark-making practices, which are then presented in terms of cross-cultural and cross-species comparison. Study III focuses on analogous practices found within the urban Hip-Hop street culture. All three studies present a pattern of formal and functional continuity of restraint mechanisms across cultures but also across species, indicating a common phylogenetic origin. Gender, age and cultural differences found in the three studies also point towards a higher relevance of restraint mechanisms in segments of a population that are more likely to engage in potentially lethal aggression (particularly young adult males) and in societies where the risk of lethal aggression is present.

The findings of this dissertation suggest that restrained aggression can serve in certain contexts as a powerful tool for inhibiting escalated and potentially lethal aggression, with important implications for the design of violence prevention strategies. A revision of policies that imply the disruption of restraint mechanisms is invited.

Abstrakt på svenska

Ohämmad aggression mellan medlemmar av samma art innebär stora evolutionära kostnader, vilket medfört att dödligt våld är relativt ovanligt hos djur och människor. Arvsmekanismer har istället främjat modeller för regel-baserad och ritualiserad återhållsamhet såsom sångdueller och territoriemarkning. Den här sortens återhållsamhetsmekanismer hör till en bred skara beteende alltifrån direkt undvikande till olika former av icke-fysisk och ritualiserad aggression. Den här avhandlingen undersöker betydelsen av återhållsamhetsmekanismer som en evolutionär drivkraft för uppkomsten och utvecklandet av människans kommunikativa förmågor, inklusive verbalt språk och symboliska representationer.

Att genom prat, sång, markeringar eller texter hitta alternativ till potentiellt dödlig aggression ger större hopp om överlevnad än ohämmat fysiskt våld. Studierna I och II presenterar etnografiska fallstudier från Galicien om sångdueller och territoriemarkningar och jämför dessa med liknande fall i andra kulturer och hos andra arter. Studie III fokuserar på motsvarande praxis inom den urbana hip-hop-kulturen. Samtliga studier illustrerar ett mönster av formell och funktionell kontinuitet i återhållsamhetsmekanismer bland olika kulturer och arter, vilket tyder på ett gemensamt socio-evolutionärt ursprung. Skillnader ifråga om kön, ålder och kultur tyder vidare på en ökad grad av återhållsamhetsmekanismer i befolkningsgrupper som löper större risk att drabbas av dödligt våld (såsom unga män) och i samhällen där risken för dödligt våld är överhängande.

Resultaten från avhandlingen antyder att återhållsam aggression i olika kontexter kan fungera som ett effektivt redskap för att förhindra eskalerande och ohämmat dödligt våld. Resultaten har viktiga konsekvenser för utvecklandet av våldsförebyggande program, och avhandlingen argumenterar bland annat för att verksamheter som underminerar återhållsamhetsmekanismer (såsom anti-graffitikampanjer) bör granskas och problematiseras.

Acknowledgements

Os galegos actuaes descemos espritoalmente dos galegos primitivos, porque a vida do noso país endexamáis foi interrumpida por enteiro, e daí que os diversos logos de Galiza sexan simpres evolucións dun mesmo etnos. Por eso as pedras ouriceladas dos nosos montes teñen para nós, baixo a súa forma natural, un engado creador de mitos, e, ao pousarmos os ollos no segredo dos petroglifos, sentimos que o pasado revive en nós como non podería revivir en calisquera investigador forasteiro. Ali está o pensamento dos nosos proxenitores. Ali, nas pedras ouriceladas dos montes galegos, vive a cruz e o circo, como signos irmáns. Como as estrelas e o sol, a noite e o día, a morte e a vida. Enxendrounos a preocupación cósmica, axuntounos a protección dos deuses, compenetrounos o cristianismo, e aínda hoxe viven xuntos por un aceio de inmortalidade.

– Castelao, *As cruces de pedra na Galiza* (1950: 30).

During the 1936-39 Spanish Civil War my grandfather Ramiro Pin and his brother were both forcibly drafted into the insurgent's army as many fellow peasants from Galiza, a land that had fallen within the territory of fascist rebels within the first month of the conflict. His memories of the war were grim and having returned home he faced a long struggle with typhus brought back from the front. His brother had died blown up by artillery fire. As a child, my grandfather would tell me that in the frontlines, both himself and fellow combatants from either side of the lines would systematically fire to miss their purported 'enemies', aiming high above or far below their actual positions. My grandfather Ramiro, unwittingly, infused my curiosity for nonkilling and restraint.

It would take many years for this curiosity to unfold as a doctoral research project. For this to happen, a catalytic invitation from my supervisor to-be Prof. Douglas P. Fry to attend a week-long workshop on "Aggression and Peacemaking in an Evolutionary Context" held on October 18-22, 2010 in the Lorentz Center, Leiden University, The

Netherlands, was crucial. Listening to and exchanging ideas with some of the leading scholars in the field was a privilege and seriously motivated me to systematically address my previous musings on the subject. I am especially grateful for the exchanges with Prof. Brian Ferguson and Prof. Agustín Fuentes, who also kindly provided feedback to Study I, as well as Prof. Kirk Endicott, Prof. Karen Endicott, Prof. Klavs Sedlenieks and late Prof. Robert (Bob) Sussman (1941-2016), with whom I continued to correspond and meet.

The idea of undertaking this doctoral project was born in Leiden, but its completion was made possible through the encouragement and trust of both my supervisors, Prof. Douglas P. Fry and Prof. Kaj Björkqvist. Being a recidivist doctoral candidate with a serious issue of untamed curiosity for all matters beyond the subject in question, their caring understanding for my constant relapses into unrelated matters and subtle reminders to get back to business were critical in getting me to somehow complete this endeavour. Having landed in a somewhat alien field, their advice along the way helped me feel at home and dare to explore new avenues of thought and inquiry. I am especially grateful to both of them, but also to the rest of the Developmental Psychology and Peace, Mediation and Conflict Research 'corridor' at B5 of Vasa's *Akademill* for always making me feel at home as I visited time and again every autumn and spring. Patrik Söderberg not only advised fellow doctoral candidates on 'the process' but also kindly translated this dissertation's abstract into Swedish.

Gratitude must be extended to the reviewers, Prof. Darcia Narvaez and Prof. Piero P. Giorgi, whose work and dedication I have admired for years. I am extremely honoured and humbled for their acceptance to examine my work and thankful for their remarks. Special thanks must go to Prof. P. Giorgi for acting as the opponent during the disputation.

During the period of doctoral research I served as Director of the nonprofit Center for Global Nonkilling. Few positions outside academia allow and encourage staff to develop their own research agenda as part of their work responsibilities. For insistently inspiring, motivating and supporting me in all possible ways, I will remain indebted to Prof. Glenn D. Paige (1929-2017). His invitation to open-ended scientific

exploration looking at new facts and questions through a ‘nonkilling lens’ has driven the research leading to this dissertation.

Since September 2014 I have also served as lecturer at Åbo Akademi University’s Master’s Programme in Peace, Mediation and Conflict Research. The exchanges and interaction with students over the years have been extremely enriching and motivating and I am grateful to all of them for the opportunities for mutual learning. As part of the Programme’s activities, four “Explorations in Peace and Conflict Research” annual conferences were organized where some of the ideas featured in this dissertation matured. I am especially grateful to Ingrida Grigaitytė for co-organizing with me these annual gatherings.

Part of the research conducted as part of this dissertation was made possible through the generous financial support of Koneen Säätiö with a grant for the study of Finland’s non-linguistic writing in the light of evolutionary restraint mechanisms. Åbo Akademi University kindly provided a research grant that allowed the completion of the dissertation’s *kappa* and the preparation for its public disputation.

I must confess the merit of my undeclared co-authors: Mínia and Návia. Study II was written mostly during late nights with Mínia (now 4 years old) on my lap, sleeping or gazing at the papers and books spread across the table. Návia (now 1 year old), in turn, cuddled patiently as Study III was being completed. Without Iolanda’s patience, support and understanding the whole endeavour would hardly be imaginable. I am also grateful to both my parents not only for nurturing my curiosity from early on but for caring to read manuscript and provide feedback.

Each of the three published studies has its own history and many are to thank, from early fieldwork to final editing. For their valuable input for Study I am indebted to Bruce Bonta, Robert K. Dentan, Charles Keil, Olivier Urbain, Thomas Fee, Jimmy Mans, Celso Alvarez Cáccamo and José Luis do Pico Orjais. Oliver T. Perrin’s comments and suggestions deeply shaped Study II, also encouraged from the start by Prof. Ben Haring, who had invited me to present preliminary findings at the “Decoding Signs of Identity” symposium held in Leiden University, The Netherlands. For their help with Study III, I acknowledge the support of Alexander Crooke and Séchu Sende.

Even in the era of Internet and digital contents, the role of librarians and fellow scholars in pointing towards rare bibliographic materials cannot be underappreciated. Manuel José Ferreira Lopes (1943-2006), Director of both the Municipal Library and Ethnographical Museum at Póvoa de Varzim, generously introduced me to the subject of Galizan and Portuguese marks providing copies of rare books and articles. Tuve Skånberg, who had already screened British and Nordic libraries in search of the same subject for his own dissertation, welcomed me to his home (and photocopying machine) in Skåne and later own facilitated an international academic gathering at the Swedish *Riksdag* in Stockholm. At Åbo Akademi University, Prof. Ulrika Wolf-Knuts and Prof. Anna Maria Åström also facilitated access to key materials. I also acknowledge the insights and materials provided by Pentti Rislä (Österbottens museum), Martin Sunnqvist (Societas Heraldica Scandinavica) and Sandis Laime (University of Latvia).

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Frojám (Galiza), January 2019

Joám Evans Pim

List of original publications

- Study I:** Evans Pim, J. (2013). Man the Singer: Song Duels as an Aggression Restraint Mechanism for Nonkilling Conflict Management. In: D.P. Fry, ed., *War, Peace and Human Nature: The Convergence of Evolutionary and Cultural Views*. New York: Oxford University Press, pp. 514-540.
DOI: 10.1093/acprof:oso/9780199858996.003.0026
- Study II:** Evans Pim, J. (2018). 'Writing and Reading Ourselves Out of Trouble': Evolutionary Insights on Non-Linguistic Marking Systems. *Egyptologische Uitgaven*, 32, pp. 9-31 (Special issue "Decoding Signs of Identity").
- Study III:** Evans Pim, J. (2018). Preventing Violence through Hip Hop: An Evolutionary Perspective. *Journal of Peace Education*, 15(3), pp. 325-344.
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1. Introduction

In the process of research design the subject usually precedes the object. In this case, the opposite is somewhat true. My interest for marks and song duels was slowly transformed from considering them purely local ethnographic features to elements that allowed for the understanding of the evolutionary role of restrained aggression in humans and other species. The slightly unconventional journey deserves explanation.

I became interested in the family marks engraved on the funeral stones of the Santa Maria a Nova cemetery of Noia (Casas, 1936; Chamoso Lamas, 1949; Ferreira Priegue, 1987; González Pérez, 2003) together with the fishermen's marks of the small town of A Guarda (Alonso, 1985; Ferreira Lorenzo, 1995) around 2003 after a visit to the Póvoa de Varzim Museum. The striking similarity between the old fishermen's marks in display (Graça, 1932; 1942; Lopes, 1979) and the medieval gravestone marks of Noia was intriguing. The parallel was noted by Casas (1936) while Filgueiras (1966; 1995) also highlighted commonalities between the marks of A Guarda and Póvoa de Varzim and those of Northern Europe (*bomärke*, *bomærke*, *puumerkki*, *peremärk*, *hausmarke*, *gmerk*, etc.) suggesting a diffusionist explanation. Then ignoring the almost universal occurrence of mark-making practices, Evans Pim et al. (2006) rather naïvely argued that the closeness between Galizan and Portuguese marks with their Nordic counterparts was likely the result of cultural contact following Viking raids and permanent settlements in the turn of the first millennium CE.

However, marks of one form or another are present in cultures throughout the world, suggesting other processes of parallel evolution in the face of a recurrent human problem. A survey on the extensive cultural use of marking systems was presented by Evans Pim, Yatsenko and Perrin (2010), evidencing the cross-cultural importance of marks for the identification of territory and objects and highlighting their universality (Perrin, Evans Pim and Yatsenko, 2010: 7). Learning from past mistakes, Evans Pim (2010) presented in that volume a study on the marking practices of Brazil and South America dissecting previous diffusionist explanations (Lévi-Strauss, 1992 [1955]; Lévi-Strauss and Belmont, 1963). The writings by Perrin (2010, 2011, 2013) comparing

human and non-human mark marking were instrumental in generating a better understanding of the relevance of marks in terms of cross-species regulation of aggression.

Song duels are also part of my adolescent experiences in the small fishing town of Rianxo where I was raised. During the local end-of-summer festivities and after long nights of partying youths got together in the main square at dawn to participate in an improvised ritual lyric display. We challenged, exposed and insulted each other in turns while a participating audience of several dozen peers sung a chorus at regular intervals between the contestants' improvised stanzas. The audience ensured that the display of loaded verbal aggression did not overflow into direct physical violence as grievances and accusations were publicly aired under the pretence that they were all mere humorous inventions. Being a rather clumsy participant when facing proficient adversaries, I had at the time no idea of how teenagers in Rianxo were engaging in a shared cultural practice with parallels across the world. Reflecting upon the fact, it may have well been that it was these song duels that kept night life in Rianxo relatively free from the street fights that were common and dangerous in other nearby towns.

The complex ritual *regueifa* ceremonies were long gone, disappearing around the middle of the 20th century. Scholars (Suárez, 1982; Lisón Tolosana, 2004) and informants agreed that one of the main reasons for their decay was the proliferation of unrestrained fighting in disrespect with traditional rules. A 1930 newspaper cutting explains how a *regueifa* celebration in the village of Aldaris, Lousame, escalated into a full fledged battle between youths from neighbouring villages.

UNA REYERTA

En la aldea de Aldaris, inmediata a las minas "San Finx", con motivo de la celebración de una "regueifa", se suscitó una reyerta entre varios jóvenes del Ayuntamiento de Lousame y del de Rois, a consecuencia de la cual resultaron gravemente heridos Amable Prado y Remigio Pouso Godón, de arma de fuego y blanca. Dada la gravedad del primero, se ordenó su ingreso en el Hospital de Santiago. El Juzgado se personó en el lugar del suceso instruyendo las diligencias del caso. Además de los mencionados hubo otros heridos, aunque de carácter leve.

Figure 1. Newspaper cutting from *La Voz de Galicia*, September 10, 1930

However, in the 1990s *regueifa* benefited from a cultural revival through popular Galizan *agro-rap* performers that summoned youths to reconnect to and reclaim the improvisational styles practiced by their forbearers (Colmeiro, 2017; Prego Vázquez, 2012). Even if the convergence of traditional Galizan song duels with global Hip Hop freestyle was evident at the time, there was little sense of *regueifa* being part of a wider shared cross-cultural pattern, beyond closer matches such as Basque *bertsolarism* or Portuguese *desafios* and *desgarradas* (Pinheiro Almuinha, 2016; Mallea-Olaetxe, 2003; Garzia, Sarasua and Egaña, 2001). Only after coming across a book by Gluckman (1965) that included an account of Inuit and Tiv song dueling performances as a mechanism for conflict resolution, was I awoken to the cross-cultural connections of *regueifa*.

I grasped the relevance of marks and song duels in the context of human and non-human restrained aggression after reading a chapter by Fry, Schober and Björkqvist (2010) where cross-cultural and cross-species examples were provided. Singing, feather fluffing, push-ups, aerial persecutions, roaring bouts, neck slamming and other forms of displays among non-human animals were presented analogously to human haranguing, sorcery, wealth amassment, hunting, singing or wrestling displays and tournaments. The first and last of the authors of that chapter were to become co-supervisors of this dissertation. Fry has written extensively on restraint (1990; 2005; 2006: 230; 2007: 186-192; 2014; 2018; Fry, Schober and Björkqvist, 2010; Miklikowska and Fry, 2012; Fry and Söderberg, 2013; Fry and Szala, 2013) while Björkqvist had done so on aggression, particularly regarding sex differences in aggression, another aspect that is addressed in this dissertation (Björkqvist, 1994; 2018; Björkqvist, Österman and Kaukiainen, 1992; Björkqvist, Österman and Lagerspetz, 1994).

In spite of being a well-known and documented behaviour in ethology, social sciences have been mostly refractory to studying the role of restraint in humans. This is likely related to the “historic and current systemic bias of the disproportionate amount of attention given to violence and war” (Sponsel, 1996: 113-114), while human behaviours that reduce or inhibit potentially lethal aggression, from serious fights, to homicide, to war, are poorly studied and usually not well understood.

The focus of this dissertation was greatly influenced by the ‘nonkilling lens’ offered by Paige (2009 [2002]). Although a political scientist, Paige called for a paradigm shift away from violence-accepting science, that by assuming lethality as “inevitable and acceptable for personal and collective purposes” sees “less urgency to understand and to remove the causes of lethality” but also “to understand the causes of nonkilling”, i.e., why and how in spite of –and precisely because– their potential for inflicting lethal injuries in conspecifics, human societies are able to keep potentially lethal aggression at bay through a wide set of nonkilling behaviours including restraint, empathy, cooperation or peacemaking. Calling for a “factual revolution”, Paige (2009 [2002]: 79-80) invited scholars to initiate a “purposive recovery and discovery of evidence for nonkilling human capabilities that tend to be overlooked or deemphasized by violence-accepting assumptions.”

By addressing song duels and environmental marking through a ‘nonkilling lens’ the set of articles presented in this dissertation invites the exploration of how such behaviours can contribute to minimize the likeliness of occurrence of potentially lethal aggression. This, in turn, places such behaviours as part of the wider set of restraint mechanisms that are relevant both cross-culturally and across species. And, finally, it allows us to rethink how the evolution of such behaviours toward more complex forms of human verbal and non-verbal communication may be equally explained in terms of their evolutionary importance for reducing fitness costs by keeping killing at bay.

Study I explores song duels presenting the case of Galizan *regueifa* and related contest singing events on the basis of a thorough literature review and ethnographic field-work. The Galizan case example is then compared in cross-cultural terms. The presence of almost identical forms of song duels in societies of differing social complexity –including those that would epitomize human natural environments or Environment of Evolutionary Adaptedness– sustains that song duels can likely be considered together with analogous forms of restrained aggression as a species-typical behaviour. Finally, human song dueling is presented in a cross-species comparison with analogous non-human behaviours of restrained agonism. The presence of a behavioural trait not only across human natural and unnatural environments but also

across different species is interpreted as evidence for its consistence with an evolutionary trait that has been selected for in terms of fitness.

Study II uses a similar logic, again relying heavily on Galizan traditional mark usage to draw cross-cultural examples with other societies. The study is based on the field-work carried out for this dissertation in the fishing community of A Guarda, Galiza, where traditional marking practices have remained in use up to the present, ethnographic interviews in other Galizan communities where more restricted mark use (i.e., cattle or tree marks) had been used until recently, and an extensive review of the literature, particularly through a global survey co-organized by Evans Pim, Yatsenko, Perrin (2010). Human mark-making behaviour is subsequently presented in the light of cross-species comparison with analogous environmental marking in non-human animals, reaching parallel conclusions to those of song duels.

On the basis of the two previous studies, Study III analyses both sets of practices –song dueling and mark-making– in a clearly unnatural environment in terms of the Environment of Evolutionary Adaptedness (EEA)¹: contemporary urban street culture represented by Hip Hop. The EEA (Tooby and Cosmides, 1990) –or the analogous concept of Adaptively Relevant Environment proposed by Irons (1998)– has been identified as the prevalent conditions of Pleistocene humans prior to the deep social transformations that begun with the Neolithic Revolution some 10,000 years ago.² The continuity not only of formal characteristics

¹ Appeals to the EEA within evolutionary psychology, sociobiology and other approaches (Goetz, 2010; Pinker, 2011) have often served to defend views on human innate proclivities to killing, in spite of overwhelming anthropological evidence against such a view (Ferguson, 2013; Fry, 2013: 15-20).

² Within Anthropology a general agreement exists that for over 95% of its existence (200,000 years of anatomically modern humans vs. a variable fraction of the last 10,000), *Homo sapiens* have lived and organized socially as small-band hunter-gatherers, also referred to as nomadic foragers (Bicchieri, 1972; Sponsel, 2010; Giorgi, 2010; Fry, 2013). Even though extrapolations always need to take into account the influence of surrounding state societies, contemporary small-band hunter-gatherers provide an extraordinary window to understand the species-typical social arrangements of humans during the Late Pleistocene (126,000 to 12,000 years ago). These societies have been characterized by an ethos of egalitarianism, cooperation, generalized reciprocity or sharing, extended alloparenting, restrained aggression, and embeddedness within nature. Economic self-sufficiency, small group size, and non-hierarchical and unsegmented social organization or lack of fraternal interest groups, all

but most importantly of the underlying functions in Hip Hop's freestyle rap and dance battles and graffiti tagging, in terms of minimizing potentially lethal agonism, advances a strong argument on how song duels and environmental marks are salient forms of restraint mechanisms that have been strongly selected in terms of evolutionary fitness, being recurrently present in both natural and unnatural environmental with both formal and functional continuity.

The fact that not all societies resort to song duels or marks –as those specifically addressed in the three studies of this dissertation– to curtail potentially lethal aggression does not underscore the overall thesis, which acknowledges the wider variety of analogous verbal and non-verbal displays and other restraint patterns which essentially serve the same function. However, all societies use one form or another of restrained aggression –and usually have a plethora of options available– while the cases addressed in this dissertation illustrate the underlying pattern of their evolutionary relevance.

1.1. Restraint and the Avoidance of Direct Physical Aggression

In a recent publication Fry (2018: 250) argued that “a new paradigm is emerging that acknowledges the predominance of cooperation, restrained aggression, and peaceful behavior”. This new paradigm –moving away from the violence-centric view that had been criticized by Sponsel (1996) and Paige (2009 [2002])– is characterized by the acknowledgement of the importance of what Fry calls “the 5Rs in human and nonhuman primate sociality”: *Restraint, Ritualization, Relationship, Resolution and Reconciliation*. While the systemic bias of focusing almost exclusively on violence has aided the development of claims presenting killing and warring as an evolutionary adaptation (Dart, 1953; Chagnon, 1988;³ Wrangham and Peterson, 1996; for a critique, Fry, Schober and Björkqvist, 2010), the large corpus of mammalian data evidences how the 5Rs shape the patterns of limited and controlled intraspecific aggression – particularly, by inhibiting or minimizing the likeliness of potentially lethal aggression. As Fry and Söderberg (2013: 271) point out:

favoured cooperative and egalitarian practices intended to safeguard harmonious nonkilling social relations (Sponsel, 2010).

³ Chagnon (1988: 985) goes all the way to state that “Violence is a potent force in human society and may be the principal driving force behind the evolution of culture”.

in mammals the killing of conspecifics is an atypical and infrequent form of aggression compared to displays, noncontact threats, and restrained aggression, so perhaps also for humans the development of an evolutionary model based on restraint as a widely documented phenomenon across species, rather than on rare killing behavior, merits consideration.

Fry and Szala (2013: 451-452) state that the idea of killing as an evolutionary adaptation becomes evidently flawed when considered in phylogenetic perspective, our own species ancestral Environment of Evolutionary Adaptedness (EEA) and nomadic forager analogies, and, particularly if, “for a long-lived species, fitness costs and benefits of extreme or lethal aggression are considered vis-à-vis those of restrained agonism”. On the contrary restraint presents itself as a core feature of the evolution of aggression in humans: “The species-typical pattern of agonism in humans *IS* the use of restraint, not an evolved proclivity toward homicide or warfare”. In spite of the disproportionate attention given to escalated fighting and conspecific killing, agonistic behaviours actually span over a broader horizon that includes other competitive activities encompassing territoriality, threat and warning signals, spatial displacement and avoidance as well as the establishment of patterns of dominance and submission.⁴

As Paige (2009 [2002]: 40) argues, “If human beings are by nature killers, if even half of humanity were inescapably homicidal (...) world population long ago would have spiralled into extinction” and, yet, “despite appalling conditions of material deprivation and abuse, the human family has continued to create and sustain life”. Although humans have the obvious potential to engage in potentially lethal

⁴ A clear conceptual difference must be established between interspecific (predatory) aggression –with alimentary purposes– and intraspecific agonism, which, across species and in normal conditions is not specifically *intended* to damage or destroy other individuals of the same species and, thus, very rarely becomes lethal. The *intentional* wounding or killing of conspecifics, done systematically in large scale, is, arguably, a specifically human and relatively recent cultural phenomenon, which can be defined as ‘violence’ (Giorgi, 2009: 97, 102). Human violence shares parallels with abnormal or pathological patterns of escalated aggression seen among other species in unnatural environments, including captivity, crowding or social disorganization (Natarajan and Caramaschi, 2010), which is markedly different from adaptive aggression connected to food, sexual selection, social status and/or territory.

aggression, the rates of killing can hardly justify considering it as a species-typical behaviour. If killing were species-typical it would mean that it is commonly shown by members of the species; while as a species-atypical behaviour it would be displayed less frequently (Verbeek, 2018: 293). According to the UNODC (2018) data, 48 of the 230 listed countries and territories have homicide rates of less than 1 per 100,000, while 10 have a rate of *absolute zero*. El Salvador, with 60.1 per 100,000 in 2017 had the world highest rate, but 80% of all listed countries and territories had rates fewer than 10 per 100,000.

Such rates are nothing to sneeze at but can hardly justify the consideration of killing as a species-typical behaviour. However, counting individual murders alone, an average child in the US will have viewed 16,000 simulated killings and 200,000 acts of violence by the age of 18 (Osofsky, 1999). This illustrates the distorted cultural assumptions regarding violence –which are often uncritically shared by scientists– that legitimize claims and beliefs regarding human intraspecific killing as an evolved adaptation. On the contrary, evidence suggests that in intraspecific agonism “nonkilling has been favored by natural selection in humans” (Fry, Schober and Björkqvist, 2010: 102), or, in other words, “*In nonhuman and human primates, as well as in mammals generally, natural selection clearly has favored judiciously employed aggression over escalated, severe forms of violence*” (Fry and Szala, 2013: 454).

Fry and Szala (2013) defined four escalating categories of agonistic behaviours that are dependent on the risk of potentially lethal injuries: 1) *Avoidance*; 2) *Non-contact displays*; 3) *Restrained ritualized aggression*; and 4) *Unrestrained aggression* (see Figure 2). In this introduction, cross-species examples of these categories are presented while more detailed examples of some of the common cultural manifestations are also provided. The classification is permeable and some behaviours span across different categories. For example, marking behaviours such as warning signals can fall within the scope avoidance mechanisms, although frequency, competitiveness and additional information conveyed by marks (i.e., size, age, social status) makes them equally relevant forms of non-contact display. Similarly, acoustic signals such as *Indri indri* spacing calls fall within avoidance, while escalated acoustic agonism such as Marsh wren (*Cistothorus palustris*) matched counter-singing or urban car ‘sound-offs’ fall within non-contact displays.

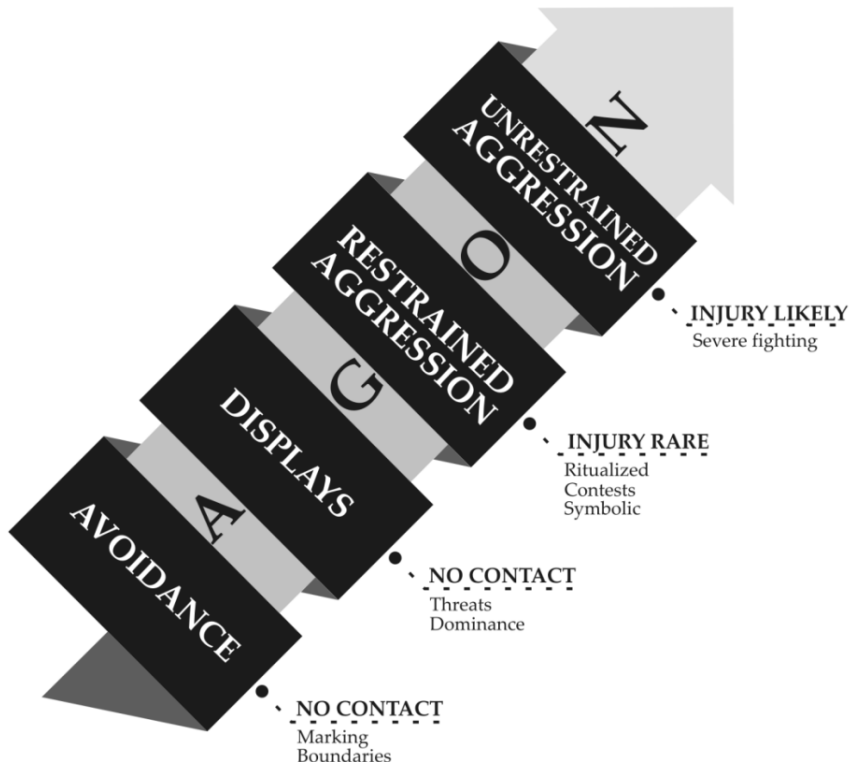


Figure 2. Escalation of agonism in relation to risk of potentially lethal injury. Adapted by the author from Fry and Szala (2013: 454, fig. 23.1). *Agon* (from the Greek *ἄγων*) was the mythological personification of contests, displays and solemn disputes, and the origin of the contemporary term ‘agonism’.

Agonistic behaviours that are less likely to lead to injury tend to present themselves more frequently across species than escalated aggression, but often a progression takes place when low-intensity agonism does not settle conflicts, leading to escalated forms. Among ungulates for example, red deer (*Cervus elaphus*) stags engage in roaring bouts at a safe distance to compete for sexual access during the mating season. If adversaries do not “settle for less costly –but less reliable– signals of quality” (Archer, 1992: 199), they may escalate to a form of non-contact display called parallel walking –involving a slow lateral display where two males walk in parallel– allowing adversaries to directly assess the physical characteristics of the opponent (Maynard Smith, 1982). If these forms of non-contact display fail to resolve the conflict, it will likely escalate to a form of restrained ritualized aggression consisting in antler

wrestling –analogous to other forms of ungulate head-butting– that although energetically costly, rarely leads to serious injury (Fry, Schober and Björkqvist, 2010: 104-5). Similarly, male mule deer (*Odocoileus hemionus*) “fight furiously but harmlessly by crashing or pushing antlers against antlers, while they refrain from attacking when an opponent turns away, exposing the unprotected side of its body” (Maynard Smith and Price, 1973: 15), suggesting that unrestrained aggression is strongly selected against due to increased fitness costs.

Avoidance –just as escape– is a form of negative reinforcement aimed at reducing the likeliness of aversive stimulus –in this case, and particularly, of fitness risks from potentially lethal injuries. Flight and avoidance are extremely important components of agonism although usually downplayed in the face of rarer escalated aggression (Fromm, 1973: 36). Marking behaviours –whether associated to territoriality or not– are a key example of avoidance. Marks, as warning signals, convey information to conspecifics about the presence –sometimes past or recent– of another individual that may also be simultaneously making a claim to a given territory. Roamers or intruders will typically retreat or avoid the demarcated area or marked trail to minimize chances of potentially lethal aggressive response from the resident/s –this is the so-called mechanism of conspecific avoidance– or other roaming individuals in the vicinities (Giuggioli, Potts and Harris, 2011; Reynolds, 2007). Warning signals include non-visual scent marks through faecal, urine and cutaneous glandular secretions or depositions (Barja, de Miguel and Bárcena, 2005), visual marks through scratching, biting, rolling, clawing, and rubbing on trees, dens, caves, the ground and other surfaces (Burst and Pelton, 1983) or a combination of the above. Human marking practices presented in Study II and Study III share important commonalities with non-human marking patterns.

Territorialism, although often seen as a causal factor of aggressive behaviour, actually serves to prevent potentially lethal engagements (Gottier, 1972). Territoriality transcends marking practices and also involves a variety of noncontact displays, from howling contests among howler monkeys (*Alouatta caraya*) (Garber and Kowalewski, 2011) to the Wagah-Attari evening border ceremonies among Indian and Pakistani guards. Although not all human societies display territoriality, the state system is based on boundary dynamics, often creating “sociopolitical

black holes” in borderlands –areas where often many activities (settlement foundation, farming, hunting, etc.) were limited or avoided to minimize border disputes (Groube, 1981: 191).

Across species, the establishment of boundaries that are regularly marked significantly decreases the intensity, frequency and duration of contests and aggressive interactions among neighbours (Kokko, 2008; Sillero-Zubiri and Macdonald, 1998). This decrease can be explained in the basis of

- 1) residents circumscribing their activity within the marked area, thus limiting incursions into other individual's or group's areas;
- 2) potential intruders recognizing the marked boundary and avoiding intentional or accidental entry, which is associated with a probable aggressive response –negative reinforcement in the face of aversive stimulus;
- 3) marks increasing the stability of the boundary and minimizing the need for contests, displays or aggression to reinstate it – certainty (Heap, Byrne and Stuart-Fox, 2012: 874).

Ethnographic examples of intragroup avoidance and intergroup avoidance are common.⁵ Using a sample of 21 simple hunter gatherers societies from the Standard Cross-Cultural Sample (SCCS), Fry (2011) identified the presence of various forms of intra- or intergroup avoidance in 76% of the sample. Among the Ju/'hoansi (!Kung), for example, Lee noted the common hunter-gatherer pattern of 'voting with one's feet', meaning "to walk out of an unpleasant situation" (Lee, 1972: 182) either as part of individual mobility or group fissioning. Individuals would rather move away with relatives in other bands rather than tolerating an unpopular leader or sustaining troubling or stressful relationships (Lee and Daly, 1999: 4). Group fissioning as a means to neutralize intra-group tensions has been considered as a crucial mechanism in the structuration of Bronze and Iron Age societies in Galiza (Currás Refojos, 2014) and Portugal (Lillios, 1991).

⁵ For example, walking away in anticipation of potential or actual conflict within fission-fusion atomistic societies (intragroup avoidance) or moving away from areas where other group's foraging or hunting activity is detected (intergroup avoidance).

Noncontact displays are a second type of agonism where, rather than avoiding an adversary, confrontation without actual physical contact takes place, equally removing the risk of potentially lethal injury. These include barking, howling, yowling, stalking, screaming, roaring, rattling and grunting bouts, body posturing, push-ups, fixated staring, facial threats, chasing, spitting, belching, branch-breaking, urinating and defecating on top of adversaries, 'stink fights', genital displays, chest beating, pounding, thumping, head-tossing, lunging, piloerection, tooth displays, matched counter-singing, song duels, displays of anger, exchanges of insults, harangues, sorcery challenges, wealth contests, hunting, dancing battles, boom-car 'sound-offs', etc. Noncontact threats and other forms of displays that do not involve psychical contact "vastly outnumber actual contact events" (Fry and Szala, 2013) while the pattern of avoiding escalated fighting is a consistent strategy across species (Maynard-Smith & Price, 1973; Parker and Rubenstein, 1981).

To refer a few examples in non-human animals, among California male sea lions (*Zalophus californianus*) most forms of agonism involve calling or chasing displays, giving the fitness risks from potentially lethal injuries that physical fights imply (Jacobs, et al., 2008). Just as red deer and other ungulates (Jennings and Gammell, 2013), "males of many antelope species show aggressive noncontact displays, and only rarely fight", particularly avoiding straight fights with peers (Blank, Ruckstuhl and Yang, 2015: 63). Wild pig (*Sus scrofa*) sounders witness very little intragroup overt physical aggression and damaging physical aggression between adults is rare, opting instead for noncontact parallel walking, 'heads up' or 'shoulder-to-shoulder' displays (Camerlink et al., 2016). Within the same species, intergroup aggression, in spite of often overlapping home ranges, is even rarer and "the strategy is usually one of avoidance" (Marchant-Forde and Marchant-Forde, 2005).

The variety of noncontact displays in humans is equally immense. Although some forms –including the song duels and counter-marking discussed in the three studies of this dissertation– share profound cross-species commonalities, others present great cultural complexity with adversaries competing "through displaying their most clever lyrics, haranguing endurance, hunting prowess, sorcery skills, and wealth amassment abilities" (Fry, Schober and Björkqvist, 2010: 108). Such competitions are not only serious but also important social institutions

and mechanisms to resolve and manage conflicts. The *potlatch* of the peoples of North America's Pacific Northwest Coast (Mauss, 2002 [1925]; Codere, 1950) or Alorese 'wealth feuds' involving pig raising (DuBois, 1944: 124-5), where although "no one's pigs are safe" the "expression of personal hostilities" did not put human lives at stake, only prestige, status and esteem. These examples represent what Codere (1950) called "*fighting with property*" and Young (1971) labelled "*fighting with food*" (for other Melanesian examples, see Sahlins, 1963; Oliver, 1967 [1955]: 386-395), just as song duels as a way of *fighting with words*.

Restrained aggression, a third type of agonism, is a form of ritualized physical aggression that often occurs after the two previous strategies have been exhausted by the adversaries without settling the conflict. Restrained or ritualized aggression has also been described as 'non-damaging aggression' and characterized by absence of significant injuries as outcomes, in contrast with 'damaging aggression' which is characteristic of unrestrained contests (Camerlink et al., 2018) and where serious injuries are more likely. Although physical fighting does take place serious injuries are rare and mostly accidental.

By limiting or other-wise restricting the extent of physical contact (i.e, body parts that are off-limits for blows or bites, what weaponry is to be used and how, rules of engagement, etc.) the chances of potentially lethal injuries are greatly minimized, while motivations from which conflict arises, such as the establishment of dominance or access to resources, can still be settled, making escalated and potentially lethal physical fighting unnecessary to solve conflicts (Natarajan and Caramaschi, 2010; Fry, 2005: 78). As Lorenz (1966: 113) explained:

When in the course of its evolution, a species of animals develops a weapon which may destroy a fellow member at one blow, then, in order to survive, it must develop, along with the weapon, a social inhibition to prevent a usage which could endanger the existence of the species.

This inhibition is channelled through restraint mechanisms and particularly agonistic alternatives to the use of potentially lethal weapons systems intended for interspecific predation. Fry and Szala (2013: 453; 460) point out how "Intraspecific agonism, including

physical aggression, tends to be much less bloody than predatory aggression, and is rarely lethal in mammals”, while “across the primate species –human and nonhuman– agonism reflects self-restraint as a central principle”. For example, in a study that recorded over 15,000 agonistic events among rhesus monkeys (*Macaca mulatta*) only 0.4% represented actual physical fighting, while 99.6% consisted in restrained aggression (Symons, 1978: 166). Similarly, another study registered 1,314 sparring matches among pairs of male caribou with only 6 escalated fights breaking out (Alcock, 2005). In humans, overall patterns and differences in homicide rates among countries and territories illustrates the mammalian pattern of restraint being the norm.

This argument is evidenced through a study by Gómez et al. (2016) in which conspecific lethal violence in 1,024 mammalian species from 137 families was examined together with data from 600 human populations, resulting in an overall conspecific killing percentage of 0.30% in relation to all deaths. Although simple hunter-gatherer band societies matched phylogenetic predictions, certain historical periods and forms of social organization showed anomalously high levels of lethality compared to phylogenetic inferences.

In the face of potentially lethal injury, ritualized aggression is in the best interest of adversaries as even an evidently superior individual that would likely win over an opponent in an all-out physical fight may still sustain costs in morbidity and mortality, besides other loss of fitness due to time and energy costs or damage to relationships. Bernstein (2008: 59) argues that restraint mechanisms must be functional in any social unit to preserve the benefits of sociality that would be undermined by unrestrained aggression:

If aggression increases the probability of injury to at least the recipient, then life in a social unit will require the development of means to prevent and control aggressive solutions to problems engendered by conflict and competition in socially living individuals. If aggression is elicited, then it must be limited, controlled, and regulated in such a way that it terminates with minimal risk of injuries.

It has also been argued that ritualized aggression allows adversaries to “assess which of them would win a fight to the death without either

incurring the potentially catastrophic costs of an actual fight to the death" (Roscoe, 2007: 486), although the ability for complex mutual evaluation and assessment has also been questioned (Elwood and Arnott, 2012). In any case, restrained behaviours seem to be both quantitatively and qualitatively *the* standard channel for agonistic behaviour, rather than a result of strategic options on the basis of the assessment of particular adversaries. This is evidently the case for social species, where regardless of the assessment of physical fighting abilities of the opponent, loss of fitness is very much related to breaking social norms on aggression and how this can damage valuable relationships or lead to ostracism or retaliation by the larger group.

Examples of restrained aggression include some of the above mentioned cases of ungulate sparring contests involving antler wrestling or head-butting, but also neck fights among lizards, rattlesnakes and giraffes. Going back to Alorese 'wealth feuds' (DuBois, 1944: 124-5), pig amassment could escalate into mutual spear and stone throwing, although this was done in a ritualized way in which "no one was hurt". Escalation into unrestrained aggression among the Alorese could bring about homicide or feuding. The pattern of spear throwing and dodging is also present among the Tiwi of Australia (Paige and Paige, 1981: 51; Goodale, 1971; Hart and Pilling, 1960: 80-83). Fry (1990, 2005, 2014) and Fry and Szala (2013) extensively documented the cross-cultural patterns of restrained wrestling and fighting, as evidenced among the Netsilik Inuit, Slavey, Dogrib, Ingalik, Siriono, Ona, Yahgan or Ache, just to mention simple hunter gatherer examples. Dian Fossey's (2018 [1983]) account of a non-contact display between two silverback male gorillas after a territorial incursion by one of the groups illustrates the pattern:

Toward the end of the day Uncle Bert unwisely chose to move over to Beethoven's side of the ravine, accompanied by a disorderly procession of his group members (...). The tyro silverback's foolhardy action could not be ignored by Beethoven, who glared at the straggled line in the ravine below before deliberately strutting down to meet them, leaving his own group members behind. The two group leaders, approached to within four feet, halted parallel to one another, and assumed rigid stances with their gazes averted (...). Suddenly, unable to endure further strain, Uncle Bert stood bipedally, chestbeat, and loudly slapped down the vegetation between himself and Beethoven.

This was all that was needed to trigger the older male, who had been a study in tolerance until then. Roaring indignantly, Beethoven charged Uncle Bert. The young silverback ignominiously fled downhill followed by the rest of his group, all screaming hysterically. Rather than pursue, Beethoven simply stood where he was and stared down scornfully (...).

Unrestrained aggression, the last category, makes potentially lethal injuries more likely as the barriers set by ritualization disappear. In spite of cultural and scientific overrepresentation of such forms of extreme agonism, unrestrained aggression “is exceedingly rare among mammals” (Fry and Szala, 2013: 454). Unrestrained aggression poses high risks of loss of fitness, including potentially lethal injuries to self or kin, diversion of energy from critical activities including feeding, reproduction and avoiding predators and losing social support and valuable relationships. Detailed evidence has been put forward regarding the strong aversion of humans to kill (Grossman, 1996; MacNair, 2002), while some indications of aversion has been suggested for chimpanzees (Roscoe, 2007). Although aggression is natural in humans as in other animal species, uninhibited, escalated aggression with the intent to harm or kill is usually considered as pathological behaviour with different underlying neurobiological processes that distinguish it from adaptive aggression (Bedrosian and Nelson, 2012: 24-25). Giorgi (2009) and other scholars emphasize the distinction between violence as a specifically human cultural phenomenon from adaptive aggression that is rarely directed toward conspecifics with the intention of causing damage or death.

Miklikowska and Fry (2012), using the ‘hawk-dove’ game-theoretic model proposed by Maynard Smith and Price (1973), argued it is agonistic strategies that settle for restrained aggression that fare best, as overly-aggressive players are more likely to accumulate costs to fitness as the simulation continues in time. Maynard Smith and Price (1973: 15), although refraining from applying their model to humans, find that a behaviour analogous to restrained aggression, and not pure dove or pure hawk strategies, turns out to be the evolutionary stable strategy, as no other strategies provide higher reproductive fitness. Thus, following Blanchard and Blanchard’s (1989: 104) argument “successful individuals [in evolutionary terms] will be those with techniques which enable them to avoid agonistic situations involving serious possibilities of defeat or

injury, while leaving them to continue in more promising situations.” This idea is even accepted by sociobiologists (Alexander, 1971: 114), although instead of finding that ritualization inhibits potentially lethal aggression by its own merit, it is seen simply as an individualistic approach to evaluate if escalated lethal aggression would be in the self-interest of individuals (Ruse, 1985: 56; 1989: 48).

Roscoe (2007: 485) suggests that “the aversion to conspecific killing has its origins at a point in our past when it served to enforce the kind of ‘ritualized’, nonlethal fighting observed in many other species”. If such forms of restrained aggression were relevant to increase the species’ fitness in the past, the mechanism would have evolved “through homologous (shared evolutionary history) or homoplastic (convergent evolution) processes” (id., 488). Therefore, over extended periods of evolutionary time, natural selection would have strongly selected for behavioural patterns that channelled aggression through restrained mechanisms, while patterns of escalated unrestrained aggression would have been selected against on the basis of the higher fitness benefits of the former strategies and the higher fitness costs of the later.

Following Lorenz’s argument (1966: 124), unrestrained aggression is most dangerous in those species where lethal capabilities are strongest, making it precisely in those species where mechanisms to curb such potentially lethal aggression are most needed –be it through restraint, aversion or other combinations of elements. For example, Oryx antelopes (*Oryx spp.*) use their lethal spear-like horns to cause lethal wounds on predators when defending themselves, but refrain from using them against their conspecifics during head-butting restrained contests (Zillmann, 1998: 7). Effective lethal capabilities, such as Oryx horns, do not predispose for intraspecific lethal behaviour. This explains what Fry and Szala (2013: 457) described as rule-based restraint behavioural proclivities even in escalated aggression, i.e., refraining from biting or gauging vulnerable body parts of an adversary or ceasing an attack once an opponent gives up (Maynard Smith and Price, 1973: 15).

Similarly, in humans, even if agonism spirals from ritualized aggression, and deadly weapons come into hand, restraint is often found within escalated non-ritualized aggression. In battlefields or close combat, soldiers will often shoot above or under the enemy, as field

interviews with some Spanish Civil War (1936-39) veterans –for this dissertation– evidenced, in a well-documented cross-cultural pattern (Grossman, 1996) that has troubled military leaders, concerned about actually getting their troops to kill in combat and managing the psychological falloff during the aftermath. Many cultures, instead, display comparatively harmless –or at least non-lethal or less-lethal– combat tactics including the use of war clubs “to stun rather than to kill an opponent” or arrows being “shot in the air rather than at an antagonist”, or even, if unavoidable, “targeted on limbs or buttocks rather than on heads or torsos” (Roscoe, 2013: 478). Cases of severe lethal aggression across species often display disrupted natural patterns, including captivity, human encroachment and mental disorders. On the other hand, conspecific killing in humans often leads to psychological damage and disorders, particularly a subtype of posttraumatic stress disorder (PTSD) that had been designated Perpetration Induced Traumatic Stress (MacNair, 2002) or perpetrator trauma, with patients suffering higher severity than those suffering PTSD from other forms of traumatization.

The following subsections will present the main theoretical insights of restraint from a cross-species perspective adding cross-cultural examples that contextualize song dueling and mark-making within a larger set of human cultural practices. Although song duels and marks are particularly relevant for the ensuing discussion on the role of restraint as a driver for the development of complex human verbal and non-verbal communication, they must be understood within the wider toolset of aggression restraint mechanisms that have been strongly selected for in our evolutionary history. Although not all societies will use song duels or marks of the particular types addressed in the studies of this dissertation, they may recur to analogous verbal and non-verbal practices and certainly a wider variety of restraint behaviours which share basic underlying commonalities. A similar argument is valid for non-human animals. By placing song duels and mark making within this underlying pattern of restrained agonism a clearer picture emerges regarding their evolutionary relevance.

1.1.1 Ethological insights on restraint and ritualization

While relatively understudied in humans, restrained and ritualized aggression among conspecifics is a widely surveyed phenomenon among non-human animals (Hinde, 1970). Huxley (1914) had used the term 'ritualization' to explain courtship displays among crested grebe (*Podiceps cristatus*). The example evidenced how instrumental behavioural patterns are transformed into relevant metacommunicative signals –in this case, courtship signals. Later on, Huxley (1966: 250) defined ritual

as the adaptive formalization or canalization of emotionally motivated behaviour, under the teleonomic pressure of natural selection so as: (a) to promote better and more unambiguous signal function, both intra- and inter-specifically; (b) to serve as more efficient stimulators of releasers of more efficient patterns of action in other individuals; (c) to *reduce intra-specific damage*; and (d) to serve as sexual or social bonding mechanisms. Ritualized behaviour-patterns can all be broadly characterized as *display*. [emphasis added].

Ethologists agree that restrained and ritualized aggression among conspecifics is an evolved behavioural mechanism that emerged through natural selection over time (Huxley, 1914, 1966; Tinbergen, 1959; Lorenz, 1966). Ritualized aggression often involves the transformation of patterns from a noncommunicative instrumental activity into highly stereotyped metacommunicative signals that convey information which is unrelated to the original instrumental activity (a process called behavioural heterochrony). This was illustrated by Tinbergen (1959) in a study of ritualized aggression among lesser black-backed gull (*Larus fuscus*) where gull nest-building gestures were used to signal aggression and turn other gulls away without using 'overt' aggressive gestures. The use of stereotyped gestures minimizes potentially lethal aggression by sending unambiguous signals referring to the restrained nature of the agonistic behaviour in question.

Ritualized behaviours are often exaggerated, emphasized, stereotyped and repetitive in a strictly regulated form to avoid ambiguity or confusion with the original phylogenetically adapted pattern or with the patterns of unrestrained escalated aggression. Song dueling and mark making can be seen as redirected responses, as the urban street culture examples in Study III illustrate. The fact that such practices are allegorically referred to with the lexicon of lethality –graffiti tags are

‘bombed’, break dance moves are ‘bullets’ being ‘fired’, freestyle rap is about ‘battling’ opponents– reinforces the idea of redirection. Human ritualized displays such as song duels also exemplify the patterns of stereotyped, repeated and exaggerated behaviours, in this case developed from the basis of ordinary speech and prosodic vocalizations (Dissanayake, 1997: 37) and where the often rhythmic rigidity and the choral functions of the audience reinforces these characteristics.

Even when it is unrestrained or escalated aggression which is ritualized, stereotypy and adherence to rules are crucial to avoid ambiguity and potentially lethal escalation. For example, the display of weapons in similar patterns as of actual attacks is common in mammal threat displays, i.e. bared teeth in *canidae* or weapons (horns) pointing toward the object of aggression in ungulates. Although postures are common to actual physical escalated aggression, their ritualized display does not involve potentially lethal fighting, but simply “intention movements” which usually “end with one animal backing off, thereby avoiding serious injury” (Rogers and Kaplan, 2002: 19). The same can be argued for the case of human cultural practices, including the already mentioned Alorese or Tiwi spear throwing which could become seriously dangerous without consistent rule-based restraint (rigidity).

One of the early explanations (Burghardt, 2018: 31) for the emergence of ritualization and displays is that of motivational conflicts where two competing motivation systems –i.e., approach/withdraw, attack/flee, or feed/look-out-for-predators– override each other. The possible behavioural upshots of motivational conflicts are redirected, displacement and ambivalent behaviours emerging from conflicting stimulus responses. Displacement or redirection activities are frequent when animals experience agonistic situations. For example, territorial animals in boundary encounters will often experience conflict between approaching, attacking and withdrawing, and may instead opt for ritualized behaviours, as Tinbergen’s (1959) gull study illustrates. The escalating options for restrained agonism displayed in Figure 2 represent a range of alternatives in such situations without resorting directly to unrestrained and deadly dangerous physical fighting.

Boyer and Liénard (2006) suggested that ritualized behaviour in humans operated as an evolved ‘precaution system’ aimed at detecting

and reacting to inferred threats to fitness. Once external stimuli or self-generated thoughts reveal a potential hazard, safety motivation is triggered and appropriate action-sequences are carried out. Clues in the environment, such as a set of footprints or hostile attitudes from a particular individual or group signal that potential danger –including potentially lethal aggression– is likely or probable and should be addressed. Interpersonal intra-group aggression in human natural environments (EEA) is considered extremely dangerous due to dependence on conspecifics for access to resources, cooperation and information, which are all crucial to survival. Within this perspective restrained aggression such as song dueling or mark making is to be understood as a result of the activation of precaution and action-parsing systems. By addressing perceived conflicts within the safety of a rigidly ritualized song, dance, property, wrestling, tagging or other form of contest based on redirected activities, the dangers of escalation are curtailed. Similarly, ritualized marking of property or territorial boundaries prevent potential agonistic situations that could also easily escalate. Interestingly, Boyer and Liénard use ritualized behaviours commonly observed in patients with obsessive-compulsive disorders (OCD) as an analogy to understand precautionary devices, i.e., cases of pathological avoidance out of fear of insulting or assaulting others.

In any case, ritualized and restrained aggression make intraspecific escalated fighting uncommon and killing rare among most vertebrate species, including primates (Scott, 1969; Gottier, 1972; Montagu, 1973b; Gómez et al., 2016). Examples of the predominance of ritualized displays over unrestrained physical aggression include elephant seals (*Mirounga leonina*), where only 1 out of 67 aggressive encounters involved physical fighting, or the already mentioned rhesus monkeys (Symons, 1978: 166) and male caribou (Alcock, 2005) examples, where over 99% of aggressive encounters are non-contact displays or ritualized aggression. Gómez et al. (2016) after quantifying levels of conspecific lethality across 1,024 mammalian species from 137 families (including humans) concluded that for over 60% of the studied species there was no reported cases of intraspecific killing. Even if this pattern cannot be extended to invertebrate species in general, there are still thousands of arthropods species where no form of conspecific fighting occurs (Scott, 1969: 124).

As for humans, in spite of the dramatic overrepresentation of killing in the public discourse of Western industrialized societies, “conspecific killing in humans is species-atypical behavior” (Fry and Szala, 2013: 469), an assertion attested by global homicide statistics. For example, in 2016, the Macao Special Administrative Region of China, with a population of over 600,000, had one single incident of homicide, a number matched by Iceland that has about half the population. Japan, with a population of 126.6 million had 362 murders. We can certainly presume that considerably higher numbers of escalated fighting took place in all three territories, but the low prevalence of killing illustrates the effectiveness of mechanisms that inhibit intraspecific lethality in daily life. As argued by Miklikowska and Fry (2012: 50):

although homicide rates vary tremendously from one society to the next and also change over time within the same society, the vast majority of people never kill or attempt to kill anyone. It is difficult to see how the proposition that natural selection has favored males that kill over those who do not explains this inter-societal and intra-societal variation in killing and the fact that most humans do not ever kill.

Eibl-Eibesfeldt (2017 [1989]: 375) argued that cultural evolution phenocopies phylogeny making cross-species examples of non-human animal restrained aggression “fully comparable to culturally ritualized human duels”. Eibl-Eibesfeldt’s statement, and indeed the evolutionary approach adopted in this dissertation, does not imply adherence to any form of ‘biological determinism’ or ‘genetic reductionism’, particularly as it is widely accepted that human behaviours are shaped by complex interactions of environmental factors –including culture and its ongoing transformations– and biological ‘hardware’ (Eisenberg, 1972: 126), which in humans is also culturally affected during ontogeny and early childhood, i.e., postnatal abnormal social exposure (Moya Albiol and Evans Pim, 2012: 182-184; Prescott, 2002). Although cross-species generalizations can be problematical –and therefore the term ‘analogy’ is preferred– common patterns can be explained on the basis of phylogenetic relatedness and/or ecological and cultural convergence (Lockard, 1971: 172). Restraint mechanisms were indeed already present before the process of anthropogenesis emerged and therefore behavioural analogies or homologies can be traced back to hominid, primate, mammal and vertebrate evolutionary ancestors. Convergence,

on the other hand, is especially evident among human cultural manifestations of restraint, i.e., Inuit and Bronx song duels/freestyle and harpoon marks/tags. If “natural selection favors non-lethality among conspecifics” (Fry and Szala, 2013: 468), it makes sense to expect similar or analogous behavioural mechanisms inhibiting intraspecific lethality in humans to those present in non-human animals. The next section explored a diversity of human cultural manifestations that can be explained under the common backdrop of evolutionary restraint.

1.1.2 Restraint mechanisms in humans: a cross-cultural review

Although examples of restraint mechanisms have been presented in the sections above for both human and non-human animals, this section will provide a more detailed overview of cross-cultural practices of restrained agonism. Examples have been organized for convenience along five subsections, but in reality many of these occurrences are multifaceted, including, for example, a combination of wealth, song and dance displays with wrestling, elements of simulated warfare and territorial marking within complex ceremonies or institutions. Some of these combinations also include escalating forms of agonistic interaction, from avoidance or territorial marking contests to restrained physical aggression.

With this *caveat* in mind, the first set of examples (‘Keeping away from trouble’) explore some cases that would fall within Fry and Szala’s (2013) ‘avoidance’ category; the following two sets (‘Fighting with words’ and ‘Fighting with property’) represent ‘non-contact displays’ in general terms; while the two last sets (‘Fighting with rules’ and ‘Mock warfare’) would fall within ‘restrained ritualized aggression’, physical in the first set and somewhere in-between non-contact and restrained physical fighting in the case of simulated warfare. Of course, the following is merely an illustrative collection and not a comprehensive description of restrained forms of human agonism.

Keeping away from fighting: territory, marks and avoidance

If you touch this you will be defeated or will meet your death.

(Gao informant, in Watanoufene, 2001: 38)

The territorial environmental marking patterns of many species can be seen as analogous as the mark uses that are presented in Studies II and III, but also in other cultural manifestations that do not necessarily involve the use of graphic devices. One such example is Rappaport's (2000 [1967]) classical analysis of Maring stake-planting ritual and ritualized boundary fights, which are part of the broader *kaiko* ceremonies affecting "population dispersion, the movement of food, goods, and personnel, and both intra- and inter-group social relations". The *kaiko* is initiated by planting stakes in territorial boundaries while casting spells "to send both the enemy spirits and their corruption back to the enemy territory", and simultaneously felling trees (and their associated spirits) across or in the direction of the border –a form of symbolic invasion. Rappaport aptly framed these ceremonies as "display behavior"⁶:

Every participant in the stake-planting procession has an opportunity to gauge the size or strength of the entire assemblage and of its constituent units, and the enemy is also exposed to this display. Enemies are said to be afraid to come to the border, or anywhere near it, to witness the spectacle. They therefore view the procession only from a distance at best... (2000 [1967]: 169)

In general cross-species terms, territoriality evolves when the benefits of having more or less exclusive access to the resources of a demarcated area –such as food, mates or breeding space– are greater than the energy costs of extensively marking its borders to claim dominance (Brown, 1964). Marking the boundaries of a claimed territory with "olfactorily conspicuous scent marks or visually conspicuous marks such as scratches" is associated with lower defence costs (particularly, less chances of potentially lethal aggression to occur), which in turn increases the ability to invest more energy in the exploitation of the territory's resources and decreased stress (Heapa, 2012: 874). The Norwegian proverb "good fences make good neighbours" ("*Gode gjerder*

⁶ The assessment, dominance and avoidance patterns seen in non-human agonism are paralleled in the Maring example, although the ritual also serves as a strong deterrent: "the enemy gets the impression that a very large number of men participated in the ritual, and this might serve to temper any bellicose plans he might entertain for the future" (2000 [1967]: 170).

gir gode naboer”) illustrates Maring stake-planting ceremonies as a strategy to keep inter-group relations away from potentially lethal aggression, and the ethological finding that with the establishment of boundaries through frequent marking aggressive interactions between neighbours are minimized (Kokko, 2008; Sillero-Zubiri and Macdonald, 2008). Among Somali pastoralists, for example, “Ownership of new land is signified by marking rocks and branding trees along the line of entry with the tribal mark” (Lewis, 1955: 89).

Across cultures, territorial boundaries are marked following cross-species patterns of restrained agonism. Boundary marks, placed on stones, wooden posts or trees, were referred to in European Antiquity and Middle Ages as ‘monuments’ (from the Latin ‘*monēre*’, meaning ‘to warn’, ‘to admonish’) and directed to possible trespassers.⁷ Newman, in a study of blade-marks in the Iron Age and early medieval periods, noticed how these intentional grooves were produced on crossslabs, high crosses, bullaun stones, Ogham stones, inauguration/assembly stones, all “icons of tribal and cultural identity, and, moreover, most of them are sacred” and “in one sense or another all of these stones mark boundaries or points of transition” (2009: 425-426). In various instances, stones with ‘blade marks’ warn

the traveller that they are now in border territory [...] emitting very clear signals of ownership and the force of arms, the importance of boundaries as places of assembly where laws and treaties were enacted and renewed suggests that the blade marks on the stone should be considered against this backdrop (Newman, 2009: 427).

Interestingly, the word ‘mark,’ from Proto-Indo-European **merǵ-* or **mereǵ-*, has a clear semantic value that refers both to ‘boundary,’ ‘borderland,’ ‘frontier’ apparently evolving through ‘sign of a boundary’ to ‘sign in general,’ but also from the boundary signs to the

⁷ The fact that in a number of cultures marks, regardless of their actual graphic design, receive the names of weapons could be a reminiscence of their agonistic origins. For example, Russian beehive marks (*bortnye znamena*) were placed on trees protecting access to honey bee nests and were often linguistically designated using terms for armour or weapons (Chernetsov, 2010).

territories they enclose.⁸ Alternatively, the relation could be opposite, evolving from the signs placed in boundaries to the boundaries themselves. On the other hand, the English word ‘boundary’, from the Old French ‘*bonde*’ (‘boundary stone’), is related to the Proto-Indo-European form **bhend-*, meaning ‘to bind’, ‘to compel’.

The etymology is coherent, as marks in general serve to establish (or claim) ownership or rights of usage over a certain object or territory in order to avoid or minimize agonistic interactions. Marks used by humans on boundary stones, trees, doorways, flags or insignia are tied to the definition of territory, identity, collective organization, hierarchy and social integration, just as in marks made by non-human species (Perrin, 2011: 627). As a “highly developed outgrowth of the environmental marking common to many animals”, marks

[...] communicate to outsiders, potential trespassers or guests alike, that the area has been claimed in some way. The presence of the mark might stimulate strangers to avoid the area, or cause them to engage in ritualized behavior if they enter it. Furthermore, when marks are known across a wide geographic area, and a mark-maker from one place then displays the mark when going to another, it can be recognized by others, enabling them to identify the stranger in some fashion. Determinations regarding who is a guest and who is a trespasser can in many cases be directly related to whether a given mark is recognized, and what behavior is thus stimulated (Perrin, 2010: 26).

Conversely, marks also define who is an insider and obligations towards the group.⁹ Just as Maring men had to participate in stake-planting to be

⁸ In Medieval Europe, the term *mark* or *march* designated border territories (opposing heartlands) often entrusted to a *marquess*, just as the same Persian term *marz* (مرز) was used in the Parthian and Sasanian Empires in earlier periods in relation to frontier territories, ruled by *marzbān*, guardian of the *marz* (Mojtahed-Zadeh, 2006). The Roman Empire’s equivalent is the *limes* (related to ‘limits’ and ‘liminal’).

⁹ In the coastal communities of Galiza and Northern Portugal mark use strongly set the boundaries of the social group regarding outsiders, namely those who did not live directly or indirectly on fishing, who in Póvoa were referred to as *peixes de couro* (‘leather fishes’), a designation that, interestingly, was not directed at mark-bearing fishermen from neighbouring Galiza, “to whom these warnings and restrictions did not apply”. This is analogue to the ‘dear enemy’ ethological metaphor regarding intrusions by neighbours whose marks are acknowledged, or to low-level scent marking by

fully recognized as group members, villagers in the Swedish-speaking community of Tölby (Korsholm, Finland) had the responsibility to maintain and repair communal fencing, an obligation signalled through 'fence marks' (*trodmärken*, from *tróða*, 'pole'). In social species the definition of territorial boundaries is often a collective effort, allowing for claims to wider ranges and reducing the energy costs of extensive marking. Such collective mark-making eventually transcends agonism to become a defining characteristic of group identity. Just as Rappaport (2000 [1967]: 171) explains how among the Maring "a man becomes a member of a territorial group by participating with it in the planning of *rumbim*", Clastres (1987 [1974]: 184) attested how for the Kadiwéu of Brazil "An initiated man is a marked man. (...) The mark is a sure sign of their membership in the group" (also see Evans Pim, 2010).¹⁰

Just as other cultural forms of restrained agonism, territorial displays in humans involve not only the living, but also the dead. The Maring fear reprisals from the ancestors of their enemies as much as from the living, and the continuing presence of the opponent's ancestors in occupied lands are a troubling deterrent. Pliny the Elder's expression "*terra nullo magis sacra merito, quam quo nos quoque sacros facit*" ("nothing makes land more sacred than what makes us sacred")¹¹ illustrates a continuing cross-cultural pattern of using the remains of the ancestors to sacralize and lay firm claims to territorial borders, protecting the people, objects and animals within the territories they demarcate, but also turning borderlands into places of liminality not only to express the territorial limits of social groups but also to bring bordering groups together through ritualized activities —trade, public hearings, ritual offerings, common ceremonies, etc.— has been discussed by many authors (Ferro

subordinate males that ensures tolerance by resident dominant males —that otherwise, if unfamiliar with the mark, would become aggressive.

¹⁰ In relation to this, marks often play an important role in initiation and rites of passage. Among the Wayúu of the Venezuela-Colombia border (see Study II), clan marks were tattooed in adolescence and served to allow ancestors to identify their relatives in the otherworld, so they could provide them with food and drink (Goulet, 1981; Hernández de Alba, 1936). Yoruba facial scarification marks follow a similar pattern (Ajisafe, 1924: 15). In most societies —as this dissertation's examples from A Guarda and Póvoa de Varzim reflect— marks are adopted in early adulthood, an age when individuals, and particularly males, are most likely to engage in potentially lethal aggression, as discussed in all three Studies of this dissertation.

¹¹ In Marcus Junianus, *Justini Trogi Pompei Historiarum Philippicarum epitoma*, LXIII 154.

Couselo, 1952; Edwards, 2006 [1990]; Pena Graña, 2010 [1991]: 15). Fears of borderlands often lead to avoidance of the areas, usually remaining uncultivated (Ferro Couselo, 1952: 43-45) and becoming what Groube (1981: 191) called “sociopolitical black holes”. This is etymologically illustrated by the common Galizan and Portuguese term for Neolithic burial mounds *anta*, which is likely derived from the Indo-European *ánta*, meaning ‘end’, ‘edge’, ‘limit’, ‘border’. Another Galizan term for these burial mounds often placed in territorial borders is *arca*, perhaps related to the Latin *arceo*, meaning ‘to ward off’, ‘to prohibit [access]’.

Regarding the graphic devices used as marks in Study II of this dissertation, some of the oldest known marks of this kind encompassing genealogical information are the several thousand engraved stone plaques found in Late Neolithic burials (3,500-2,000 BCE) across SW Iberia, which clearly exemplify this pattern. Lisboa (1985: 193) was the first to offer an explanation of the recurring geometrical designs that viewed the inscriptions as “ordered and meaningful,” and considered them as having a “heraldic function”. Bueno Ramírez (1992) also considered the design patterns of the stone plaques as ethnic identifiers and Lillios (2002: 142) held that they were representations of textile patterns with heraldic value, a class of material mnemonics recording lineage status and affiliation through a system of decorative elements. Following the structure of the plaques, the base rows would indicate lineage, or generational distance between individuals; the next set of horizontal lines could represent a mark of cadence (individual within a generation: 1st son or daughter, 2nd, etc.); and the straps could indicate gender. This is precisely the same underlying basis present in the mark system of A Guarda that was studied as part of this dissertation’s field work and which is common throughout the world.

According to Lillios (2002: 149), the SW Iberian plaques “would be the oldest examples of objects in the world with clear heraldic properties”, identifying conflicting or competing individuals and groups and legitimising access to territory or resources. This practice consistently exemplifies “the need for non-literate people to record and remember their past and ancestry” (id.). Placed in burials, marked plaques would help identify and memorialize individuals at death through their personal histories and those of their lineage, also establishing social distinctions in relation to power hierarchies. The pattern of burial

placement could indicate their use as signs demonstrating continuing use of a burial site and its associated territory by a group, or to help the dead reconstitute their social world in the afterlife (Lillios, 2002: 149), another cross-cultural pattern of mark use. In Lillios' view (2003: 146), the lineage affiliation and genealogical histories recorded through engraved designs objectified inherently ephemeral memories in a process critical to political identity and thus power, based on the control of access to territorial resources and alliances.¹²

Beyond the claim of an individual or a group, in many human societies – where marks represent lineages of ancestors as well as the current mark-bearers– marks sacralize and offer magic protection to the objects, animals and territories that bear them. They also provide those who recognize them with a continuous record of presence across time, as illustrated by the accumulations of *tamgas* in 'encyclopedias' in the North Caucasus studied by Yatsenko (2013, 2010) indicating clan/family unity and dominance over a certain territory, just as urban "Solidarity walls demonstrate bonds among different gangs and are another example of the function of graffiti in marking social networks" (Adams and Winter 1997, 349). Such accumulations are most frequent in borderlands that become places of liminality, expressing not only territorial boundaries of social groups but also binding neighbouring groups together in ritualized interaction. Occasions such as public hearings or assemblies to resolve disputes or sign or renew treaties, fairs or ritual offerings, all held in spaces which are neutral regarding jurisdiction, share commonalities with the noncontact displays or other forms of ritualized behaviour that characterize the boundary practices of some non-human animals.

Just as the presence or absence of marked objects or animals in a territory emphasizes rights of access and usage to the area –such as herds across pastoral lands or beehives in a forest– the marking of certain objects in human societies can also be seen as a development of territorial marking

¹² In a more recent work, *Heraldry for the Dead*, Lillios (2008: 5) argues that the social changes in the Late Neolithic "would have instigated profound changes in mnemonic practices in order for groups to maintain and legitimate rights to [...] economic and symbolic resources". These practices would include the "mimesis of ancestral landscapes" and the creation of spaces of liminality between the living and the dead, transcending normal time and space.

common to other animal species, that use marks to protect resources within a demarcated area –most importantly food. Among the Zulu:

Taboo signs helped to protect ‘private property’ where occasions for doubt might arise. Or they served as reminder of a claim which though generally acknowledged had to be reasserted at times when temptation arose to disregard it. In both circumstances the affixing of a taboo sign or property mark implements a right inherent in a superior status and defines, within limits, the extent of the sphere of action and of control pertaining to it (Raum, 1973: 490).

Cross-culturally, marked items are closely tied to the livelihoods of each society that could be subject to appropriation by other individuals or groups: fishing nets and equipment in the case of A Guarda, chestnut trees –heavily relied upon in the traditional diet– and other species planted in common lands in the Galizan mountains, agricultural tools in Finnish villages or reindeer herds among the Sámi. Going back to etymologies, just as the term *mark* was used by the emerging Persian and European proto-states to define their borderlands and the lands they enclosed (i.e., ‘*Danmark*’, as ‘mark of the Danes’), households used the term *bomärke* (Swedish¹³), from ‘*bo*’ (‘house’, ‘den’ or ‘nest’, but also ‘to live’, ‘to exist’) + *märke*, on a smaller geographical scale.

Among the Inuit of Alaska, lance-heads, arrowheads, whaling or walrus harpoons, all of which usually remain in the bodies of the hunted prey, bear the mark of the village community, so that if another group finds the dead animal it should notify the original hunters, who would then divide it with the finders (Boas, 1899). In the same way that fishing nets lost at sea would be returned if found in coastal Galiza because of the mark, returning marked animals gone astray to their rightful owners is a common cross-cultural practice (Humphrey, 1974; Landais, 2001). As Baroin (2010: 237) explains, “marks are a warning to potential thieves, as they show them which group’s retaliation they will be confronted with if indeed they choose to steal the animal” (Baroin, 2010).

¹³ Aso the corresponding *bumerke* (Norwegian), *búmerki* (Icelandic), *bomærke* (Danish), *puumerkki* (Finnish) or analogous *peremärk* (Estonian) [*pere*, ‘family’, ‘household’], *huismerk* (Dutch), *hausmarke* (German), *marca de casa* (Galizan) [*huis*, *haus*, *casa*, all meaning house or home], etc.

*Splitting off sharp words, little sharp words, like
the wooden splinters which I hack off with my axe.
(Inuit informant, in Gluckman, 1965: 304)*

Irenäus Eibl-Eibesfeldt, founder of the study of human ethology, argued in his 1989 book with the same title that “too little attention has been paid to this aspect of the evolution of speech” (2017 [1989]: 375), referring to ritualized verbal fighting. In Eibl-Eibesfeldt’s view, “verbal conflict is an extreme example of ritualized fighting” and it is “the possibility to conduct conflict verbally” that greatly contributes to reducing the chance of potentially lethal injury in human aggression. Fry and Szala (2013: 469) put forward a similar argument: “As in other species, most agonism in humans occurs without any physical contact. With language available, a plethora of possibilities has been devised to deal with competition that minimize risks to life and limb.”

However, very little has been argued in favour of considering the relevance of restraint as a driver for the emergence of human complex communication, including articulated language but also non-verbal forms of symbolic communication –including gesticulated aggression, i.e., eye contact, angry or obscene gestures, appeasement gestures, etc. Huxley (1966: 257-8) stated that during vertebrate phylogeny ritualization evolved toward more complex ceremonies, with higher mammals, including primates and the *Homo* genus, displaying a wider variety of ritualized behaviours in which individual learning gained importance. Huxley considered the emergence of human language abilities a development of and a part of adaptively formalized ritualized behaviours.

As Fry (2009: 190) notes, conflicts are “handled by toleration, avoidance, and a plethora of safer, nonphysical approaches such as verbal harangues, arguments, discussions, reprimands, song duels, and mediations assisted by others”. Although these common, every-day attitudes and behaviours are responsible for the management of most human interpersonal and intergroup conflicts, and that the human capacity for linguistic and non-linguistic communication greatly enhances such capacities, they are often overlooked or taken for granted

(Fry, 2006: 13). West Bengal 'shouting affairs' (*gâlâgâli*), usually involving village factions, are a good example, documented by Nicholas (1965: 30). Although the verbal arguments of everyday life are likely the most common forms of verbal aggression, other more elaborate ritualized displays illustrate the cross-species analogy, already pointed out by Kroodsma (1979: 514) who had noted the formal and functional similarities between Marsh Wrens' song duelling and human verbal duels such as those of the Inuit, the West Indies calypso, or Turkish boys insult exchanges, all "serving as an intragroup competitive strategy that is an alternative to actual fighting".

Turkish male adolescent verbal dueling, like Galizan song duels and also freestyle rap (see Studies I and III), have a lyrical component as the response must rhyme with the opening insult –mostly of sexual content–, although these are not improvised but taken from an established retort tradition (Dundes, Leach and Özök, 1970; Hickman, 1979). Insult exchanges provide "a semipublic arena for the playing out of common private problems" affording boys "an opportunity to give appropriate vent to the emotional concomitants of the painful process of becoming a man" (Dundes, Leach and Özök, 1970: 348-349). Turkish boys verbal duels are paralleled in the African-American tradition by 'playing the dozens' (also called simple 'playing' or 'sounding'), although here insults are targeted mainly to the opponents mother (Abrahams, 1962; Mitchell-Kernan, 1972; Lefever, 1981; Bruhn and Murray, 1985; Gates, 1988). Lefever considers 'the dozens' as

a protective device against being victimized. By playing the game, young black men learn how to face up to an antagonistic society and to deal with their conflicts both the larger white society and within their own family and peer groups. Rather than resorting to physical means to resolve conflicts, the dozens evolved as a way to develop self-control and handle one's temper.

Garner (1983: 50) suggests that the "rhetorical power of the game resides in the fact that performers project conflict but resolve it without fighting", regulating personal behaviour to conform to community norms than shun physical aggression. Hip Hop freestyling rap battles are historically rooted in 'playing the dozens' (in fact, Bo Diddley's 1959 "Say Man" is often pointed out as a precursor to Hip Hop) and

'signifying', which in turn are part of the African song duel traditions. As part of what Lehmann, Welker and Schiefenhövel (2008: 262) call "song as ritualized speech", song duels represent "improvised verbal combats that follow strict formal rules and are carried out among males as a device of social conflict resolution".

Although ethnographies seldom capture the complexity of ephemeral oral improvisation,¹⁴ some classical examples have been well documented. Hoebel (1941) described the 'nith' song duels or contests of the Inuit (first studied by Rasmussen, 1976 [1929]) as a juridical instrument to "settle disputes and restore normal relations between estranged members of the community", serving more as a means of psychological satisfaction and relief than as a tool for restitution (Hoebel, 1941: 681-2). In his book *The Law of Primitive Man: A Study in Comparative Legal Dynamics*, Hoebel (1954: 329) explained the nature of the "song-duel complex" as a "substitute for violence to close issues of dispute without recourse to steps that may lead to feud". Self-regulation and self-control are also evident in Inuit song duels, as the demonstration of anger—acting as if insults were not ironic—would simply give oneself away leading to three transgressions:

- (1) acknowledging the possible truth of the insult, (2) bringing the event into the real world and thus precipitating overt conflict and (3) not performing properly in the speech event and thus declaring oneself a poor participant and an outsider to the community (Eckert and Newmark, 1980: 204-205).

Gluckman (2009 [1965]) similarly considered song duels in his *Politics, Law and Ritual in Tribal Society* as a preferable form of 'derision', considering how "Other methods of redress are either feeble or involve drastic killing, so that only thus can a man be publicly shamed, without a worse chain of mutual reprisals being started" (Gluckman, 2009 [1965]: 308; see also Gluckman 1954, 1963; Balikci, 1970; Eckert and Newmark, 1980). Within Inuit society, certain offences usually related to

¹⁴ This may be the reason that, surprisingly and in contrast with the wide scope evidenced in Study I of this dissertation, some manuals of anthropology considered song duels a "rare form of social control found both among the Eskimos and in central Nigeria" (Miller, 1979: 447). In fact, they are not at all rare, but rather have gone mostly unnoticed, just as other forms of restrained agonism.

hostility, greed, jealousy, laziness, thievery, pretentiousness, immodesty and sexual access, “could make existence within the community impossible” as “the accused would find his position [impossible] as the known committer of a serious offense, and the rest of the community would find intolerable their position as implicit accusers and witnesses to his guilt” (Eckert and Newmark, 1980: 198). The only alternative to a song duel contest would be the (self-)removal of the conflicting individual(s) through murder, suicide or withdrawal, but dueling enabled both the accused and accuser to remain within the community.

Bohannon (1957: 142-7; 1967) in turn presented the song duels of the Tiv of Nigeria (also see Keil, 1979: 99; Ojaide, 2001), that as the Inuit, also involved drumming, although in a more notorious way –the ritual is referred as ‘drumming the scandal’. Tiv contests, involving singing, drumming and dancing could continue for days or weeks and although it “was a favorite method of settling disputes”, it could escalate into physical fighting, particularly if a compromise appeasing contenders is not reached. As Brenneis (1978: 281) emphasizes discussing the verbal duel of the Fiji Indian Community: “Only the gamelike and playful definition of the duel makes it possible; insult unrestrained by traditional practice could be deadly serious.”

The pattern of agonistic song dueling has been evidenced across societies with strikingly similar characteristics, from the Maltese ‘*Spiritu pront*’ (Herndon and McLeod, 1980) or the Sardinian ‘*Gara poetica*’ (Mathias, 1976) to the ‘*Gayo*’ of northern Sumatra in Indonesia (Bowen, 1989) or the ‘*Git*’ of the Rāute Tibeto-Burman hunter-gatherers (Fortier, 2002). Song duels often go hand in hand with other forms of ritualized agonism, including wealth displays (i.e, the Sori of Papua New Guinea, Chodkiewicz, 1982), dance tournaments (i.e, the Tiv) or mock warfare (Galizan ‘*atranques*’ by the ‘*Generais da Ulha*’). Among the Inuit, explained Hoebel (1967: 92), “Homicidal dispute, though prevalent, is made less frequent” not only by song dueling, but to other forms of displays (such as drum duels or wealth contests) but also regulated combat, including wrestling, butting or buffeting, frequently interweaved with verbal forms of duels.

Fighting with property

In olden times we fought so that the blood ran over the ground. Now we fight with button blankets and other kinds of property and we smile at each other!

(Kwakiutl informant, in Boas, 1966: 119)

Just as other cultural practices that are presented here in the light of restrained agonism, wealth amassment displays across cultures are part of complex institutions that go beyond the creation of alternatives to potentially lethal physical aggression, including war. In most cases, complex rituals, ceremonies or institutions satisfy other important social functions such as reuniting the community, affirming kinship bonds and other alliances, developing trade, etc. (de Laguna, 1952). Classic anthropological examples of wealth amassment displays, such as the *potlatch* gift-giving feasts of the peoples of North America's Pacific Northwest Coast, or the competitive pig exchanges of Melanesian societies, illustrate this category.

Potlatching has been defined as "competitive ceremonialism" (Stanish, 2017: 149), where groups and leaders compete for prestige and influence through the amassment and distribution of goods. The *potlatch* exemplifies destructive agonism, although through the symbolic destruction of property and not the physical destruction of opponents – it is gifts that can symbolically 'kill' the adversary. For example, during a ceremony a chief would break a ritual copper (allegorically considered a 'weapon' or 'means of strife') and give the fragments (considered as 'dead') to his opponent, who in turn would destroy his own valuable copper returning both to his adversary (Boas, 1966: 94).

It has often been presented as an analogue for war, both in emic conceptions, where gift-giving ceremonies are figuratively presented as fighting, war or blood-baths,¹⁵ and in anthropological analysis. Helen Codere (1950: 118) borrowed the Kwakiutl designation for potlatching, 'Fighting with Property', for her study on the subject, arguing how "'Fighting with property' instead of 'with weapons,' 'wars of property' instead of 'wars of blood,' are Kwakiutl phrases expressing what has proved to be a fundamental historical change in Kwakiutl life."

¹⁵ The Kwakiutl term for *potlatch* is *p!Esa* which means "to flatten" (Codere 1950: 120).

Codere suggests that although potlatching predates colonization and at some point potlatching and warring were perhaps “interchangeable means of gaining prestige” (1966: 122), the ceremonies would have gained intensity as a result of the European process of ‘pacification’ that eventually brought an end to warfare as such among the indigenous peoples of the Pacific Northwest. Potlatch was “planned like campaigns against the enemy” (Codere, 1951: 119), an idea that had already been noted by Marcel Mauss in his *Essai sur le don* (1925), arguing that

The potlatch is a war. Among the Tlingit it bears the name of ‘War Dance’ (...). In the same way as in a war one can take possession of the masks, the names, and the privileges of their owners who have been killed, so in a war between properties, property is killed –either one’s own, so that others cannot have it, or that of others, by giving them goods that they will be obliged to reciprocate, or will not be able to do so (Mauss, 2002 [1925]: 142, note 141).

Although in some occasions overt physical violence could take place, these “feasts and ceremonies were supposed to be free of physical strife, a peaceful time when other forms of intergroup relations prevailed” (Donald, 1997: 103-4). This was achieved through a strong system of rules that were recognized as legitimate by all parties, so that “Rules of exogamy and other kinds of exchanges, including goods and codes of honor do not necessarily end serious conflict or violence, but they make genocidal slaughters much less likely” (Chiot and McCauley, 2006: 116). Other scholars (Gardfield, 1947; Goldschmidt and Haas, 1946; Goldschmidt, 1994) have also highlighted the importance of potlatching as an affirmation of a group’s territorial and resource access rights, which are tacitly acknowledged by hosted rivals therefore reducing the likelihood of conflict. This idea of a rule-based agonistic regulatory mechanism was already noted by Mauss, who argued how the distinct social rules around gift-giving rituals served to channel deeper hostilities toward alternative forms of ritualized aggression (Kuokkanen, 2004: 84). As de Laguna (1952: 4-5) explains:

the same potlatch cycle provides occasion for creating and airing of ill-feeling, since the etiquette of rank may be used to shame an enemy, or an inadvertent slight be interpreted as an intentional

insult. The patterned joking which occurs at the more convivial stages of the series may be manipulated to pay a direct compliment, to provide good-humored fun, or to make a nasty remark about one's relatives. Other potlatches have as their primary purpose the wiping away of an insult or the reaffirmation of social status which has been jeopardized.

Most anthropological attention has been given to the larger and more complex *potlatch* ceremonies, but smaller and less serious "play-potlatches" were enacted. Consistently with Huizinga's (2002 [1938]) *Homo ludens* theory, smaller potlatches created moments and spaces where normal social rules of rank and roles could be subverted allowing for issues of rivalry and social tensions to be collectively addressed in a climate of self-reflexivity (Codere, 1956: 344-347). This is akin to how Galizan *regueifa* was also casually performed at the end of communal work days or in minor festivities, without the formalities of the full wedding ceremony, allowing for temporal interstices of liminality where conflicting issues could be brought out into the open. Galizan wedding *regueifas* and North American potlatches –together with other displays– share what Huizinga considered a common agonistic cultural ethos, often involving eating, drinking, but mainly spending excessively, which eventually lead to banning efforts by colonizers.¹⁶

Potlatches share deep commonalities with similar ceremonies found across cultures. Alaskan Inuit had analogous gift-giving ceremonies gravitating around rivalry and status validation, although the "insults and bragging present in the Kwakiutl potlatch were replaced with good natured joking and humility in the Alaskan form" (Risdale, 2011: 13).

¹⁶ Just as *potlatch* practices were prohibited in 1885 in Canada in an amendment of the 1880 Indian Act, under the argument that it was an uncivilized wasteful practice, prohibitions and limitations on the degree of expenditure and number of guests allowed in Galizan wedding ceremonies were established and enforced as early as 1493. Although we have no information available, it seems that Galizan *regueifa* ceremonies in the context of weddings must have also shared characteristics with rites of redistribution and reciprocity of wealth similar to other agonistic 'fighting with wealth' displays. "Excesses" were condemned and prohibited by the Catholic Monarchs (Queen Isabella I of Castile and King Ferdinand II of Aragon) in their *Pragmática* issued in Barcelona on October 14, 1483 (González González, 1985: 124-5), using very similar terms as those applied in Canada regarding the banning of the *potlatch*. In turn, banning attempts are reminiscent of persecution and disparaging of Hip Hop practices in spite of their potential to minimize potentially lethal aggression (see Study III).

Melanesian competitive exchanges –most notably pig exchanges– are another canonical anthropological example of wealth contests, present in a large number of societies that gravitate around what Sahlins (1963) called the ‘big man system’ where political competition was mostly settled by “the ability to give outsiders more than they can possibly reciprocate” (1963: 293). In a reformulation of Codere’s (1956) Kwakiutl study, Michael Young’s (1971) *Fighting With Food* illustrates the dynamics of Melanesian competitive food exchange ceremonies, arguing that on Goodenough Island “peace not merely ‘permitted’ the elaboration of food exchanges, but given the cultural premises, virtually necessitated it” (1971: 256). Beyond Melanesia, similar wealth contests involving pig feasts have been studied in the island of Nias, off the coast of Sumatra, where contests were likewise settled on the basis of who could “sustain greater loss” (Beatty, 2015: 125).

Another well known Melanesian case for anthropological discussion is the *kula*, a ceremonial exchange system of the Massim archipelago, including the Trobriand Islands, where it is the circular trade of valuable symbolic objects that serves to build and maintain social status. While Trobrianders settled conflicts amongst communities with shared allegiances –between which “War could never occur”– through the “arbitrament of competitive food exchange, *buritila’ulo*” (Malinowski, 2013 [1935]): 182), the *kula* “is to a large extent a surrogate and substitute for head-hunting and war” (2013 [1935]): 456) between distant island communities. This argument had initially been casted by Lenoir (1924: 387, 394-5, 403) and later on acknowledged by Fortune (1932: 210): “the exchange of the ornaments, useless in itself, makes strongly for peaceful relationships between potentially hostile internationals. It is a good point.” (Also see Dalton, 1977).

Gregor (1994) and Fry (2012) consider the Xingu tribes an example of a ‘peace system’ based on trade and rituals allowing restrained aggression, together with intermarriage and overarching peaceful values. As one Xinguano explained, “We don’t make war; we have festivals for the chiefs to which all of the villages come. We sing, dance, trade and wrestle” (Gregor, 1990: 113). Each of the 10 Upper Xingu River basin specialized in certain manufactured goods (belts, necklaces, axes, bows, spears, ceramics, salt, cotton) creating the ‘need’ for reciprocal exchange ceremonies, which though not competitive in the

form of potlatches or agonistic food exchanges, did encompass other forms of restrained aggression, that were crucial at keeping inter-group relations free from lethal conflict.

Fighting with rules

"After the fight, it is all over; it was as if they had never fought before"

(Netsilik informant, in Balikci, 1970: 186)

Restrained physical aggression presents a wide variety of forms across cultures in terms of possible manifestations and their intensity, from mild buffeting and wrestling matches to the throwing and dodging of spears and stones, or the use of modified non-lethal weapons such as wax-tipped darts or arrows in simulated warfare. Restrained aggression is often placed in an interstitial space between playfulness and the possibility of escalated potentially lethal aggression, where abiding by the rules and the presence of an audience than guarantees abidance is crucial. This holds true in a cross-species comparison, considering how among non-human mammals, and particularly primates, "chasing and wrestling with peers is ubiquitous" (Jolly, 1985: 406), but also bearing in mind the importance of rough-and-tumble play or play aggression among human children, in terms of "allowing young individuals to practice adult fighting" (Fry, 1990: 323), which, as will be discussed, involves mainly restrained fighting. Fry (2005: 78) suggests that play aggression may actually provide "practice at participating in restrained, rule-based competitive struggles later in life" (Fry, 2005: 78). And although the "typical pattern of tournament contests in nomadic forager societies involves wrestling" (Fry, 2014: 174), this is not to imply that all societies practice one form or another of restrained physical fighting, as some societies have shown to consistently shun all forms of physical aggression (i.e., the Semai, see Dentan, 1968; Batek, see Endicott and Endicott, 2008; Paliyan, see Gardner, 2010; or Ifaluk, see Lutz, 1988, 1990) and instead use other strategies to settle potential conflicts.

Although traditional practices such as 'folk wrestling' have often been institutionalized as sports, often extracting them from their original social settings for inter- or intra-group conflict settling, originally such contests, "as a form of dispute resolution also can involve dominance struggles while allowing for the resolution of differences with less

injury that might occur during real aggression” (Fry, 2005: 74). Examples include the wrestling and buffeting contests that are integrated in the Inuit agonistic ‘tool-kit’ –which also includes mark-making and song dueling– but most styles of so-called ‘folk-wrestling’ likely have a common origin. Examples from the Ifugao of the Philippines, the Sirionó and Selk’nam of South America, the Hausa of West Africa, or South Indian Gopalpur villages illustrate a pattern.

Settling disputes in (mostly) bloodless wrestling or face-slapping matches is characteristic of Arctic peoples, and is well documented among Inuit band societies. Hoebel (1967: 92) argued that regulated combat (including wrestling, buffeting and butting) made interpersonal killing less frequent, with only social esteem and rank at stake. Inuit restrained fighting was set in a system of escalated steps of increased intensity: “When elders were unable to resolve a dispute, other forms of dispute resolution were resorted to, including song competitions and contests of strength such as wrestling and boxing” (Purich, 1992: 28). If previous strategies failed or were inappropriate to solve the conflict, physical fighting involved clear rules of restraint. During Netsilik Inuit fighting contests, blows were given in strict turns hitting forehead or shoulder (Balikci, 1970), while an audience supervised and enforced adherence to rules.

Among the Ifugao of the Philippines, wrestling matches (*I bultong*) were a binding mechanism (often referred to as ‘trial by ordeal’) to settle boundary disputes over conflicting territorial claims, usually involving rice patches –a rather serious issue. Boundaries were usually well marked –effectively preventing conflict to arise in the first place– but landslides, erosion or crumbling could lead to the failure of terraces, in which case boundary disputes likely emerged. Disputes could be settled through a wrestling match between adversaries –sometimes replaced by one of their relatives– or a different form of restrained aggression involving throwing *runo* stalks, eggs or spears at each other (*I uggub* or *alao*), in an escalating form, from eggs to *runos*, and from stones to spears, also depending on the seriousness of the offence –in adultery, for example, only eggs were thrown during the duel (Barton, 1919). In both cases “a peaceful result for the community rather than a mere test of strength is the most important outcome of the ordeal” that would be concluded through a peacemaking rite (*hidi*) “to thank and assure the gods that both parties will peacefully abide by it” (Serrano and

Cadaweng, 2016: 109-10). Barton's (1919: 98-99) account is worth quoting at length as the *I bultong* offers a clear analogy between human and non-human territorial agonism:

On the appointed day the two parties meet at the disputed boundary and occupy opposite ends of the disputed land. A party of mutual kin follows along and occupies a position midway between the adversaries. (...) The champions frequently work themselves down half-thigh deep in rice-field mud, water, and slime. Catching fair and even holds, they begin to wrestle, encouraged each by the shouts and cries of his kinsmen and by the calling of the old men and old women on the spirits of the ancestors. Each wrestler tries to push his opponent into the territory that that opponent is defending and to down him there. If A throws B in B's field, ten feet from the line on which they wrestle, A wins ten feet of the rice field at that point. Finally, there is a fall that more than likely capsizes one or both of them in the black mud. One point in the boundary is determined. Frequently the lower terrace is eight or ten feet lower than the upper one, but there are no injuries for the reason that the mud is at least two feet deep and is a soft place in which to fall. At every fifteen or twenty feet along the disputed boundary there is another wrestling match. Sometimes the champions are changed. The new boundary runs through every point at which there has been a fall.

The Patagonian Selk'nam nomadic hunter-gatherers engaged in wrestling contests also to solve their conflicts and disagreements. But while the Ifugao strongly trusted divine intervention in favour of the righteous contending party, the Selk'nam avoid fighting clearly superior opponents. However, the likeliness of injury was avoided by choosing soft ground to stage the fight, adhering to strict rules and being encircled by watching men, women and children. As Fry (2005: 76) notes, Selk'nam children not only observed their elders but also imitated them in rough-and-tumble play-wrestling that was likely instrumental for learning the ways of restrained aggression. Although wrestling "never degenerates into ill-feeling" it remained a serious affair:

The previous irritation and the heightened jealousy cause each to attack boldly; they summon their utmost strength and plant themselves against each other in desperate rage, until finally one

must succumb, either by being pressed against a tree or thrown on the ground. With this the existing disagreement has been settled to some extent, at least for today, namely, to the disadvantage of the one defeated. (...) One who had to leave as the one defeated took this dishonour very seriously; his people often reminded him of it (Gusinde, 1931: 645-6).

Similarly, the Sirionó of South America “do not fight with their fists” and “physical aggression is expressed in the form of a wrestling match, in which one participant tries to throw the other to the ground again and again until he is too exhausted to rise” (Holmberg, 1969: 39). The success of restraint is evidences in the Sirionó, where homicide is “almost unknown” and where “any other type of fighting is frowned upon and is usually stopped by non-participant men and women” (Holmberg, 1969: 156). Not abiding by the rules of restraint is seen as deviant behaviour that will cause social intervention.

Wrestling is often a form of addressing interpersonal conflicts but is also seen to be used for settling inter-group disputes. This is the case among Chukchi nomadic reindeer herders (Craig, 2002) in Russia’s Far East, where as matches could escalate “into more serious forms of conflict, the Chukchi are careful not to provoke violence” (Blanchard, 1995: 164). In Gopalpur, India, “intervillage competition is also expressed in wrestling matches that are held at the time of festivals” (Beals, 1974: 156). Matches involve “a relatively mild form of hand wrestling involving teams from different villages”, usually engaging “young men between the ages of 15 and 30” while helping “to replace warfare as an expression of hostility between villages”. As Beals argues, although escalated aggression could turn equally lethal,

(...) the matches restrict conflict to a particular time and place where it can usually be controlled by policemen and village officials. Although violence is more frequent in the Gopalpur region than in Elephant or Namhalli, its disruptive effects are blunted to a considerable degree by the conflict-resolving and regulating mechanisms inherent in ritual.

Although ethnographies frequently overlook detail in how and why societies engage in restrained fighting, glimpses are offered in many other accounts. For example, in the Tokelau Islands wrestling matches

(*fagatua*), were used to settle conflicts between communities (Huntsman and Hooper, 1996: 73), while Galizan restrained wrestling called *aloita* served similar purposes and was defined as a form of fighting that did not “cause offence” (Valladares, 1884). West African wrestling matches would go hand in hand with song duel tournaments, evidencing how they were bounded together as part of complex rituals of ritualized agonism. Coulibaly (2015: 154), discussing Senegalese traditional wrestling, points out how “it is agreed that *laamb* has been used to build peace, solve disputes, and reconcile communities, villages, and ethnic groups”. Hausa wrestling had already been noted by visitors in the early 20th century “as a means of settling certain classes of disputes” (Alexander, 1905: 388). Among the Mardu of Australia, fights took place “in an atmosphere of great public drama and menace, so that honor is satisfied, but with a minimum of physical violence” (Tonkinson, 1978: 124). In North America, the Slave, Dogrib and Ingalik bands resorted to wrestling matches between a husband and the suitor to settle who would remain in the relationship (Helm, 1956; Osgood, 1958: 204).

Competition over female partners is also a frequent driver of disputes among the Tiwi of Australia, although instead of wrestling as the Ingalik, they opt for a somewhat more dangerous spear throwing-dodging tournament that has in some instances –mostly accidental– caused lethal injuries (Hart and Pilling, 1960: 80-83). After an often older male has accused his opponent of seduction, the contest is set for the next day:

(...) everyone in the community gathers in a circle in open space. The accuser stands at one end of the circle and the defendant at the other. The elderly accuser is ceremonially painted and is carrying a ceremonial spear in one hand and hunting spears in the other. The young defendant is not painted and is holding either one or two hunting spears or throwing sticks depending on how defiant he is (the throwing sticks are less defiant). The ritual begins with the accuser reciting in minute detail the life history of the defendant, including the many favors that he and his relatives have done for him and his relatives, even the most remote of favors to the most remote of kin. This procedure, dramatizing the antisocial character of the defendant’s alleged behavior, lasts for at least twenty minutes. The elder man throws aside his ceremonial spear and begins throwing the hunting spears at the defendant, who dodges them. The defendant is not allowed to throw his

spears at the elder. The skill required of the defendant is to lose artfully to the elder without being hurt or making his loss seem too feigned. He is not to embarrass the elder accuser or else community opinion would be against him, but if he has any ambitions of gaining prestige and success he must also beware of making a fool of himself. A skilful young defendant may allow the old man to throw appears for some time, then finally let one of them draw blood without causing great injury. If this occurs, the audience considers the defendant to have behaved admirably and the elder to have retained his honor. The defendant is almost forced to conform to this ritual since if he chose to engage in a real fight or allowed the elder accuser to be embarrassed, steps would be taken by the community, including his own relatives (Paige and Paige, 1981: 51; for a more detailed account, see Hart and Pilling, 1960: 80-83).

Other spear throwing contests include those of the Arrernte, also from Australia, who like the Tiwi, “encourage public contests between disputants” through spear throwing, in a normally “harmless ritual performed before the assembled relatives” (Pearson, 1974: 209). Similarly, the Murngin of Arnhem Land, also in Northern Australia, perform an analogous ritual called *makarata* or *nirimaoi yolno*, “a kind of general duel and a partial ordeal which allows the aggrieved parties to vent their feelings by throwing spears at their enemies or by seeing the latter’s blood run in expiation” (Warner, 1937: 174). While helping “to settle old fights and lead to a general friendliness” (id., 393) the Murngin were extremely careful in not getting anybody killed, which in fact never happened in Warner’s 20 years of field work among them. The Maori of also engaged in spear throwing displays, although using special spears with blunted ends that could do no serious harm (Buck, 1949: 238).

Xinguano tribes from the Upper Xingu River basin of Brazil also came together in mourning and inaugural ceremonies of chiefs, during which the groups traded but also engaged in wrestling, wax-tipped spear throwing and insult exchanges, evidencing the escalating fan of agonistic alternatives to lethal aggression. As Gregor (1994: 250) explains,

It is a form of controlled warfare: of pleasure in others’ pain, of biting verbal aggression, and of military displays of weapons and warriors. Yet it occurs in a highly regulated context of peaceful relations, kinship, and mutual pleasure.

Mock warfare

"What is sometimes referred to as 'war' in northwest California was simply this type of retaliatory activity, expanded to involve fellow villagers of the aggrieved parties. Such feuds could be settled with the aid of a go-between, who was paid for his services. When a settlement was arranged, the opposing parties would face each other, the men doing an armed 'war dance' in front of the settlement money while singing songs to insult the other side. If the women were successful in restraining the men from further violence, the settlement would conclude with an exchange and breaking of weapons".

Bright (1978) on the Karok of California

Mid-way between non-contact displays and restrained physical fighting are a diversity of cross-cultural examples of simulated or mock warfare, often comprising similar forms of attack with spears or other weapons. Whole groups and not only individuals become involved in highly ritualized collective displays. The already mentioned Alorese mutual spear and stone throwing, as part of the escalation of pig 'wealth feuds', would fall into this category (DuBois, 1944: 124-5).

The Abelam of Papua New Guinea perform a very similar ritual, where enemy villages engage on a ceremonial ground in which "spearmen advance and throw spears at warriors from the recipient group. These warriors are especially selected for their ability to dodge; no reciprocation is allowed and casualties are said to occur" (Forge, 2009: 113). Even if injury is possible, usually no injury at all occurs and engagement remains largely as a non-contact display.

In the Kurumugl Highlands of Papua New Guinea, Schechner (1977) argues, 'warfare' is mostly a ritualized social drama, involving the attack-displays for the capture and defence of pig meat that involved counter-singing and ritual combat. The ceremonial confrontation creates a space and time of liminality where a sense of *communitas* emerges allowing the transformation of intergroup relations from enemies to friends and allies that, at least temporally, become one. The carefully

planned ceremonial invasion, ritual combat, speechifying and sung insult exchanges, and the final distribution of the meat as part of the gift exchange, feasting and storytelling, complete this form of ritualized aggression:

From about one to five in the afternoon the two groups engaged in fierce ritual combat. Each cycle of singing and dancing climaxed when parties of warriors rushed forward from both sides. Spears ready for throwing, and, at apparently the last second, did a rapid kick-from the knee step instead of throwing their weapons. The weapons became props in a performance of aggression displaced, if not into friendship, at least into a non-deadly confrontation (Schechner, 1977: 72).

Among the Trobriand islanders “warfare could be fought between neighbouring villages but more commonly, in such a context, dispute led to yam challenges (*buritilaulo*) or fights (*yowai*) without weapons or with only sticks” (Leach, 1983: 137). Although raiding could be often deadly, ‘warfare’ was essentially a ritualized battle, later on transmuted into the Trobriand style of cricket, as presented by Gary Kildea and Jerry Leach in their 1975 documentary *Trobriand Cricket: An Ingenious Response to Colonialism*. The Trobriand colonial ‘conversion’ from spears to cricket bats illustrates how sport has often taken over the social sphere of ritualized aggression. Similar mock hostilities are found among the Manus (Mead, 1956: 71) and Siwai (Oliver, 1955: 393) of Melanesia.

A parallel can be found in Galizan rural villages of the Ulha region, where during the *entrudo* (Carnival) horse-riding parties dressed up as ‘Generals’ (*Generais*) and militiamen –in imitation of Napoleonic military paraphernalia– confronting analogous expeditionary forces of rival parishes. The ceremony in its current form likely incorporated elements from the 1808-1814 Peninsular War in which French troops were decimated by Galizan rural guerrillas –with captured or imitated uniforms being incorporated into the ceremonious mock warfare rituals.

Horse-riding parties from one parish –formed by a variable number of villages– ‘invade’ a neighbouring parish, confronting its inhabitants and their analogous ‘military’ party in a song duel –called *atranque* and being formally similar to *regueifa*, although in recent decades it has ceased to be improvised. It must be noted that no military structure as

such was present in Galizian parishes, and therefore no 'real' version of the 'mock' forces existed– which does not mean that collective conflicts between parishes (particularly regarding territorial boundaries) were uncommon and indeed could result in potentially deadly conflicts. In fact, strict adherence to ritual verbal fighting was crucial for the whole engagement not turning into a fully blown riot:

In the territorial boundary between parishes the army of the invaded country is awaiting. And then there is a moment of danger, of true and authentic danger that the whole thing may turn into a pitched battle of unimagined scope, as lyric arms have not yet been drawn and the stringency of the defending army can lead to a catastrophe far away from carnivalesque humour (Bouza Brey, 1949: 408-9; our translation).

The ritualized lyric song duel between 'generals', after a detailed account of grievances involving the parishes and its members, would usually end with a 'peace treaty' between the parties followed by confraternization of the gathered 'troops' in the taverns of the 'invaded' parish. As Bouza Brey (1949: 409) explained, "It is a tribal defence of the territorial boundaries of the parish that only by being vented in verse can be resolved peacefully". As fights amongst the youths of neighbouring parishes would be a constant in Galizian rural society,¹⁷ the cyclical ritualized 'wars' held in Carnival allowed for the regulated expression of hostilities, often (although not always) ending in the reconciliation between antagonistic neighbours.¹⁸

¹⁷ A similar pattern is found among the Andean Quechua, where "villages have ideological traditions of localism, and the entire history of the region is full of intervillage conflicts, some legalistic, some violent. Ritualized fighting between villages is a feature of the largest annual festival" (Salomon, 1981: 427).

¹⁸ The annual Carnival *foliões* with ritual verbal duels between the neighbouring parishes of Mormentelos and Castinheira, in Vilarinho de Conso, is headed by the '*boteiros*' and celebrated each year alternating between each of the two localities. The villagers of the two parishes confraternize in a dinner which is constantly interrupted by '*bombas*' (bombs), improvised lyric statements that target the members of the other community, and that are countered in a prolonged duel. Similar customs were found in Maceda and Viana do Bolo (Pinheiro Almuinha, 2016: 161-2). In other parts of Galiza and Northern Portugal ritualized drumming contests are frequent during Carnival and other seasonal festivals –Portuguese '*zés-pereiras*' are considered the likely forerunner of the famous Rio Carnival parade contests. In A Guarda, the notorious '*trovoadas*' (storms) of drummers confront each other during the August '*Festa do Monte*', often grouping extended families and neighbourhoods (*bairros*) (Fernández Santomé, 2012). Although

In an 1875 account Vicenti (2008 [1875]: 146-148) describes the (mis)fortunes of the Oca parish 'militia' in its expeditions and encounters with neighbouring forces. After crossing the first parish border a first clash occurred but was solved peacefully, with the 'home guard' allowing safe passage to the incoming army. However, later on in the evening the parties of the parishes of Oca and Arnois incidentally met face to face and immediately charged violently against each other "leaving the ground behind them sown with broken spears, bundles, tinsel, and bruised or injured enemies" (Vicenti, 2008 [1875]: 148).

These previous examples are consistent with what Maynard-Smith and Price (1973: 15) called the 'limited war' pattern across species, where natural selection, instead of developing "maximally effective weapons and fighting styles for a 'total war' strategy of battles between males to the death" instead favoured the resolution of intraspecific conflicts through a 'limited war' strategy, "involving inefficient weapons or ritualized tactics that seldom cause serious injury to either contestant".

1.2 Aim of the thesis

This thesis explores an evolutionary model for the emergence of complex human communication based on the premise that restrained mechanisms to minimize potentially lethal intraspecific aggression served as a driver. For this purpose, the thesis presents a cross-cultural and cross-species study of two specific forms of verbal and non-verbal communication, song dueling and marking behaviour, which are analysed within the larger context of restrained and ritualized aggression. Both behaviours are a noted component of intraspecies communication that serve for the recognition of boundaries, threat or warning signals and meta-communicative signals, all related to the prevention or minimization of potentially lethal aggression.

Although within the field of human ethology (Eibl-Eibesfeldt, 2017 [1989]) human verbal aggression has been acknowledged as a form of

the ritualized release of aggression through drumming is usually kept within the rules, violent outbursts have occurred and are well remembered (Uris Guisantes, 2002).

ritualized fighting, theories of the evolutionary emergence of human articulated language and other forms of complex communication have failed to note how by significantly minimizing the chances of potentially lethal injuries, complex communication improves fitness. By presenting the evidence of functional continuity of meta-communicative verbal and non-verbal signals in both human and non-human animals, the study exposes how complex human communication would have evolved in the light of natural selection pressures that favour nonkilling behaviour.

The goals of the thesis can be summarized as follows:

- 1) To explore the evolutionary role of song duels on the basis of cross-cultural and cross-species comparison (Studies I and III)
- 2) To explore the evolutionary role of mark-making on the basis of cross-cultural and cross-species comparison (Studies II and III)
- 3) To explore sex and age differences of restrained meta-communicative aggression in relation to increased likeliness of potentially lethal aggression (Studies I-III)
- 4) To advance an explanatory model for the evolutionary emergence of complex human communication on the basis of its potential for minimizing the fitness costs of potentially lethal intraspecific aggression (Studies I-III and Introduction).
- 5) To question conventional academic assumptions regarding the emergence of writing and the use of literacy as a dividing principle between societies and individuals (Study II)
- 6) To inform praxis regarding the potential of using evolved mechanisms of restrained aggression in intentional violence prevention programs and the risks of suppressing cultural expression of restrained aggression (Study III and Introduction).

2 Method

The evidence presented in this thesis emerges from a combination of ethnographic field work, carried out in several Galizan rural communities, and cross-cultural and cross-species comparison built upon a review of previously published studies. The main objects of research, song dueling and marking, have only sporadically been the focus of ethnographic attention, in spite of some early and notorious attention to both practices. Although the song duels of the Inuit and Tiv are commonly cited in manuals of anthropology –sometimes misleadingly presented as rare or isolated occurrences– perhaps the volatility of improvised music made it less attractive to field ethnographers. Similarly, early ethnographic attention on marks (i.e., Boas, 1899; van Gennep, 1901, 1902, 1905) did not lead to the systematic collection of data on such cultural manifestations in later ethnographic field work.

Results rendered from a search in the Human Relation Area Files World Cultures database (eHRAF) suggest that song duels are a relatively rare manifestation across cultures. Besides the canonical Tiv case, just another six explicit occurrences emerge: the Aleut (Laughlin, 1980) in North America; the Marquesans (Handy, 1923: 340) in Oceania; the Khmer (Ebihara, 1971) in Asia; the Basque (Zulaika, 1988), Cretan (Herzfeld, 1985) and Bosnian (Lockwood, 1983) in Europe. Study I clearly evidences that this is not the case. Marking practices render a larger sample and one HRAF Outline of Cultural Materials (OCM) index subject category (422 Property in movables) includes ‘property marks’ as part of its definition. Other marking systems discussed in this thesis fall into alternative categories (i.e., 211 Mnemonic devices). However, although highly relevant, HRAF sources alone do not provide enough detail to document the cross-cultural patterns of mark-making.

In this context, the combination of new ethnographic field work on both phenomena and a systematic revision of previously published materials allowed to generate a broad picture for cross-cultural and cross-species comparison. Using Galizan case-studies of both song dueling and mark making as a point of departure for Studies I and II and for comparison in Study III also had an autoethnographic component (Ellis, Adams and Bochner, 2011), with both objects of research being retrospectively

considered as part of my own culture, identity and lived experiences: being a participant in song duel improvised contests as an adolescent; listening to oral stories from village elders regarding traditional wedding *regueifa* rituals and mark making together with the physical *loci* of such practices; and living in a marked environment. Although marginal in terms of data collection, the autoethnographical component informed research and was instrumental in bringing about the actual subject.

2.1 Ethnographic field work

For this thesis, ethnographic materials were generated through field work carried out in two separate locations: the fishing community of A Guarda (South West Galiza) and a number of small villages in the rural municipality of Lousame and the surrounding area (West Galiza). The selection of the sites responded to the need of capturing the studied practices in their traditional settings. A Guarda is actually the only Galizan locality where a traditional system of marks survives as a lived practice in its full integrity. Although accounts from the first half of the 20th century state that a number of other communities displayed the same system at the time (Moanha, Ogrobe, Bueu, Marim, etc.), visits and interviews conducted in all of these sites evidenced how marks had not only disappeared from living memory but also from the register of material culture –the material mediums for marked objects (usually wood or cork) can become almost as volatile as the oral medium of improvised song duels. Lousame, being my home region, was selected due to easy access and trust and because it had also been pointed out in the literature (Suárez, 1982) as an area where the traditional wedding *regueifa* ceremony had persisted in its original form up to the 1940s.

Fortunately, the living memory of the marks of A Guarda is likely to be safely kept for future generations, which is to be mostly credited to Antón Ferreira Lorenzo, chair of a local environmental group that since the early 1990s has collected marked artefacts and the stories of the respective mark bearers. Ferreira Lorenzo's 1995 brief pamphlet *As marcas dos mariñeiros da Guarda* served as a point of departure for preparing field visits. At the time field work commenced, ANABAM (*Asociación Naturalista do Baixo Miño*) had registered over 400 marks and built up a respectable collection of artefacts, publicly exhibited for the first time in 2014 (Pérez Pena, 2014) with a larger display being set up in

2018 at the local Maritime Museum. ANABAM has been particularly active in engaging the local community to preserve its traditions in a participatory way,¹⁹ which has rendered highly positive results.

Also prior to the actual field work and with the support of ANABAM and local primary school teachers, a four page questionnaire focusing on the community's marking traditions was distributed among the schools of A Guarda. This was inspired by the Irish Folklore Commission's 1937-38 Folklore Schools copybooks that engaged over 50,000 school children in collecting oral history, folktales and other valuable ethnographic information from their parents, grandparents and neighbours. Although only 19 completed questionnaires were returned, the information gathered was of great importance for preparing for and 'jump-starting' the field work. The questionnaires were not anonymous and asked informants if they would allow a follow up visit. The school survey was intended not only to refine the semi-structured interviews and key conversation points to be used in the field as well as to identify key informants in advance, but also to build local interest and traction in valuing and preserving marking traditions, beyond the actual research goals of this dissertation.

During subsequent visits to A Guarda, several school survey informants were met. In some cases a semi-structured interview was used to gather new information and to clarify issues, including those brought up in the surveys and previous literature. Some of these interviews were recorded in audio while in other cases only written notes were taken. However, most field notes were gathered casually during or after participant observation at the harbour, small taverns and private homes. Informants were mostly retired fishermen and took a strong interest in the subject in question. One of the strategies used to collect data on local marking practices involved generating mark genealogies (such as the one presented in Study II) which often lead to a snowball chain-referral in which one or more informants would lead me to relatives or neighbours that could assist in completing missing information. With about 6,000 inhabitants and a closely knit community, it did not take long for volunteer informants to start seeking 'the young man asking about

¹⁹ For example, see "Anabam pide colaboración para recoger símbolos de marineros de A Guarda", *Faro de Vigo*, November 27, 2012.

marks', especially after a local newspaper featured the story. Overall, some 60 informants were met during the various field visits.

The harbour was also frequently visited, being a place of gathering for both retired and active fishermen. The presence of marked artefacts (mostly oars and fishing nets) allowed multiple opportunities not only to analyse the objects in actual use, but most importantly to discuss with informants about their practices and visibly shifting patterns: in materials, from wood and cork to plastic and other synthetic products; in engraving techniques for marking; in relation to the presence of alphabetical initials shifting customary mark design; in changing work conditions, where ship owners provide all necessary equipment (compared to traditional practices where each sailor would provide their own net and instruments); and in naval technologies, with new ships allowing fishing in areas far off from the coast, where marks are less relevant. Although only a fraction of the largely redundant data and materials were presented in Study II, a more comprehensive elaboration of the materials is being developed aiming particularly at the preservation of the practice within the community.

Field work regarding *regueifa* was much more limited. Although the genre has benefited from a cultural revival in recent decades, the new settings do not necessarily reflect the patterns of agonism that were in place in traditional contexts. Compared to the very limited literature on Galizian marks, *regueifa* and other forms of Galizian song duels were object of more detailed academic attention. Besides a comprehensive literature review that informed Study I, a review of press archives was also carried out to try to illustrate the patterns emerging from pre-existing literature and informants. Following the claim by Suárez (1982) and Lisón Tolosana (2004), as well as by local informants, that wedding *regueifas* had been abandoned due to increased incidence of escalated violence, it was expected that some of those episodes may have transcended to the contemporary press.²⁰ Over a dozen occurrences

²⁰ One such example from the *La Voz de Galicia* issue of September 10, 1930, reproduced in the Introduction, actually presented a clear case of such escalation from the village of Aldaris, in Lousame. Although none of the informants in the area recalled this precise incident, one of the severely injured individuals was remembered and used to work in the nearby 'San Finx' tin and tungsten mines. This can be seen as supporting the explanation presented in Study I regarding how the disintegration of traditional

from the 1910s-1930s were found, including several cases of homicide and severe injuries. Archival research also revealed other relevant historical information, including a late 19th century picture of a *regueifa* ceremony in the Noia region.²¹

In the villages of Lousame and surrounding areas interviews were conducted with a total of 11 informants of between 80 and 100 years of age. Most of these individuals had witnessed traditional *regueifa* rituals first hand and/or had heard detailed accounts from their parents and grandparents. The *loci* of *regueifas* were also visited with informants, usually 'eiras', small communal threshing floors, where participants would gather for the ritual after the private wedding feast. Visiting the actual settings where *regueifa* used to take place (i.e., the Eira Velha or Eira d'Abaixo in the village of Frojám) served as a strategy to memorize and re-enact the events with greater detail. The gathered materials were only partially used in the published articles and this introduction, but are also being developed into a future publication.

During the field work period, an opportunity also arose through the kind invitation of Séchu Sendé to explore the pilot implementation of a new optional school subject called *Regueifa e improvisación oral en verso* (Regueifa and versed oral improvisation), prepared by secondary school teachers Manolo Maseda and Séchu Sendé. In 2016 the Galician Ministry of Education approved the curriculum for a 1-hour-per-week-subject that was taught for the first time amongst 8th graders (mostly 13/14-year-olds) during the 2016-17 school year. The experience is part of the *Regueifesta* educational project, which seeks to address capacities for self-management, social participation, cultural and environmental heritage, emotional intelligence, etc., through a broad set of actions, including school exchanges in Galiza and abroad, with song duels and oral improvisation as the driving thread. The project received the Educational Innovation Award from the Galician Government and has been adapted to early childhood and primary education at the *Escola de Ensino Galego Semente* in Santiago de Compostela.

societies disabled the functionality of song duels. With individuals breaking away from the dependency of community norms through external employment and the option to fulfil basic needs through the buying capacity offered by wages, breaking the norms of rule based aggression became a viable option for individuals.

²¹ Arquivo da Real Academia Galega, ES.GA.15030.ARAG/2.21.2.2./FS.Caixa 7-52

The new subject consisted of 36 one-hour-long weekly sessions and the programme was divided into 5 blocks: musical communication, history of *regueifa* and versed oral improvisation; rhetoric, poetic and linguistic communication; scenic and performed communication; creativity and sociocultural management. Oral improvisation was the driving element that aimed to develop social and relational skills (self-confidence, creativity, interpersonal relational abilities, memory, etc.) together with cultural, language and musical skills. Gender issues and sexism were addressed transversally. In methodological terms, the subject had few conceptual contents and many activities that allowed for practical experimentation of oral improvisation. Beyond the formal sessions in class, the pilot subject run in parallel to the second edition of the *Regueifesta* project allowing for extracurricular activities involving the rest of the school members and the community at large. Conflict resolution skills, or violence prevention as a goal, were not specifically addressed or made explicit in the curriculum, and were not part of the primary aims of the project, but insights from the observation of this educational experience and its use of Hip Hop were highly relevant for the development of Study III of this dissertation.

2.2 Cross-cultural and cross-species comparison

Comparison is crucial for both ethnological and ethological research. Ethnology uses ethnographic data from across cultures to generate analyses of commonalities, differences and variation regarding particular cultural traits, building from the early idea of the 'psychic unity of mankind' proposed by Bastian. Similarly, ethology compares behaviours across different species to better understand their evolution. For this dissertation, both cross-cultural and cross-species comparison of song dueling and marking behaviours was carried out, using the Galizan ethnographic materials as a point of departure.

For cross-cultural comparison, ethnographic materials representing all geographical regions were collected and analysed. Ideally a predefined sample such as the Standard Cross-Cultural Sample (SCCS) or eHRAF (Human Relations Area Files) World Cultures probability sample was to be used, but these samples often lacked the in-depth descriptions that were sought. Song duels and marking practices are seldom referred to

in ethnographies, not because of their rarity but perhaps because of their somewhat ethereal character that makes them difficult to capture –as referred, only seven explicit occurrences of song duels are rendered through eHRAF. However, as the studies were not aimed at generating statistical analysis of frequency or variability, ethnographic data was drawn from well documented cases representing geographic and cultural diversity. In Study I, a list of analysed materials for song duels can be found in Table 26.1. For Study II, addressing marks, Ostrobothnian (West Finland) examples were heavily relied upon for comparison with my own data from A Guarda, but also referring to materials that had been previously compiled by Evans Pim, Yatsenko and Perrin (2010) in *Traditional Marking Systems: A Preliminary Survey*.

The selection of Hip Hop for comparison of both song dueling and marking behaviour in Study III was done based on the assumption that contemporary urban settings where this street culture emerged and thrives are arguably as far away as our species has come from our evolutionary natural environments or ‘Environment of Evolutionary Adaptedness’, EEA (Tooby and Cosmides, 1990). Considering the claim that restraint mechanisms to prevent potentially lethal aggression are behaviours that have been strongly selected *for* within a general tendency that favours nonkilling among conspecifics, it made sense to test if such an evolved mechanism would still be present in settings where our species are farther removed from the EEA. In Studies I and II, cases provided on the basis of newly conducted ethnographic fieldwork or existing ethnographic and historical accounts, almost exclusively reflect rural, agricultural or forager societies that are likely closer in many aspects to the Environment of Evolutionary Adaptedness.

Shulman (1997: 65), considering the mismatch between the evolutionary socio-psychological conditions of the EEA and modern urban settings, suggested that “It is in cases of the extremes that the theory can be most fruitful”. On the basis of the two previous studies, Study III sets out to analyse the same set of practices –song dueling and mark-making– in a clearly unnatural environment in terms of EEA: contemporary urban street culture represented by Hip Hop. The continuity not only of formal characteristics but most importantly of the underlying functions in Hip Hop’s freestyle rap and dance battles and graffiti tagging, in terms of minimizing potentially lethal agonism, advances a strong

argument on how song duels and environmental marks are salient forms of restraint mechanisms that have been strongly selected in terms of evolutionary fitness, being recurrently present in both natural and unnatural environments with both formal and functional continuity.

Finally, cross-species comparison places song dueling and marking behaviours within the wider context of restraint mechanisms for the understanding of their evolutionary relevance. The presence of a behavioural trait not only across human natural and unnatural environments but also across different species is consistent with an evolutionary trait that has been selected for in terms of fitness. As the mechanisms for restrained and ritualized aggression are well studied and acknowledged by ethologists, cases were selected for illustration purposes on the basis of their similarity with human behaviours.

3 Overview of the original publications

3.1 Study I: Man the Singer: Song Duels as an Aggression

Restraint Mechanism for Nonkilling Conflict Management

Study I sets out to study human song duels in the framework of aggression restraint mechanisms. It starts out by presenting the example of Galizan *regueifa* song duel rituals in detail using previous literature, new ethnographic work and auto-ethnographical reflections. *Regueifa* is likely the oldest and most genuine form of Galizan song duels and reflects the nature of the institution. The detailed Galizan example is then used as a basis for cross-cultural comparison, using both 'canonical' and lesser known occurrences of song duels. An extensive survey of the literature was conducted for this purpose. Cross-cultural patterns and commonalities in song dueling are then compared with analogous non-human behaviours of restrained agonism also involving vocal exchanges and a wider array of non-contact forms of engagement.

The extensive presence of almost identical forms of song duels in societies of differing social complexity reinforces the importance of this and other forms of restrained aggression as a species-typical behaviour in humans. Parallels with forms of ritualized aggression in non-human animals suggests its origins may be traced back phylogenetically on the basis that evolutionary selection has favoured mechanisms for rule-based ritualized restraint that allows competition to openly take place without the threat of lethal physical aggression. The finding that song duels are prevalent among individuals that are more likely to engage or become exposed to potentially lethal aggression (in humans, mostly young adult males) reinforces how ritualized aggression has been selected for in terms of fitness.

Study I finally emphasizes the role of restraint as a driver for the emergence of complex natural language in humans, evolving from basic forms of hominid protolanguages that gained complexity following the needs of developing forms of social organization to minimize chances of injury from both intragroup and intergroup agonistic interactions.

3.2 Study II: Writing and Reading Ourselves Out of Trouble': Evolutionary Insights on Non-Linguistic Marking Systems

Study II starts out with a critique of the construction of the concept of writing and its prevailing definitions. By embracing an alternative and broader approach, the study places a Galizian example of a working marking system within the scope of non-linguistic writing. The marks of the fishing community of A Guarda are presented on the basis of ethnographic field-work carried out for this dissertation and then compared cross-culturally following an extensive review of the literature. Human mark-making behaviour is subsequently presented in the light of cross-species comparison with analogous environmental marking in non-human animals.

The study reveals how marked boundaries and social orders significantly reduce uncertainty, allowing us to effectively 'mark', 'write' or 'read' ourselves out of conflicts that at times could be potentially lethal. Acknowledging that early hominin marking was to some extent an inherent behaviour it is argued that across the evolutionary continuum toward modern humans such behaviour gradually shifted into established cultural practices that nevertheless retained commonalities with their original evolutionary function. Human marking practices became increasingly complex as selection pressures favoured behaviours that contributed to reduce human lethal potentialities in also increasingly complex social arrangements.

Study II finally suggests that just as language emerged as an amplification and extension of simpler forms of verbal displays, current forms of linguistic writing are also an outgrowth of previous forms of nonlinguistic marks and thus can also be understood in the context of ritualization and restraint.

3.3 Study III: Preventing Violence through Hip Hop: An Evolutionary Perspective

Study III builds upon the findings of the two previous studies regarding song dueling and mark making, testing the continuity of these practices in a clearly unnatural environment in terms of the Environment of Evolutionary Adaptedness (EEA): contemporary urban street culture represented by Hip Hop, particularly by its elements of freestyle rap, *breakin'* or breakdancing and graffiti *taggin'*.

For decades Hip Hop cultural practices have been disparaged for allegedly inciting and being responsible for the eruption of urban violence. This assumption, likely built upon pre-existing biases regarding the street culture and ethnic minorities where Hip Hop emerged, ignored how some of its core cultural elements initially served the purpose of providing at-risk youths with real alternatives to direct physical violence in their day-to-day lives, and continue to do so today.

The continuity not only of formal characteristics but most importantly of the underlying functions in Hip Hop's freestyle rap and dance battles and graffiti tagging, in terms of minimizing potentially lethal agonism, advances a strong argument on how song duels and environmental marks are salient forms of restraint mechanisms that have been strongly selected in terms of evolutionary fitness, being recurrently present in both natural and unnatural environments with both formal and functional continuity.

By presenting Hip Hop's freestyle song and dance battles and tagging territorial contests against the backdrop of evolutionary mechanisms to minimize potentially lethal aggression, the relevance and potential of Hip Hop for preventing violence comes under a new light, in sharp contrast with previous claims and assumptions that tried to explain the relation between Hip Hop and violence in terms of causation. On these grounds, the article also questions existing policies of criminalization and the risks of disrupting powerful mechanisms for restraint due to poor understanding of their cultural and evolutionary relevance.

4 Discussion

In 1963 Konrad Lorenz published his book *On Aggression* (the original title read *Das sogenannte Böse zur Naturgeschichte der Aggression*, “So-called Evil: on the natural history of aggression”). Some translations have included the subtitle “A Natural History of Evil”. Ten years later he would receive the Nobel Prize in Physiology or Medicine, together with Nikolaas Tinbergen and Karl von Frisch, “for discoveries in individual and social behaviour patterns”. Although in his book Lorenz acknowledged the crucial evolutionary role of ritualization and restraint, enabling the transformation of destructive aggression into socially acceptable, beneficial or harmless forms of agonism, the focus of attention remained largely on aggression. By keeping such a focus, Lorenz mirrored what Sponsel (1996: 113-114, also see Sponsel, 2017, table 1) described as the “historic and current systemic bias of the disproportionate amount of attention given to violence and war”.

If Lorenz, on the basis of both quantitative and qualitative distribution of cross-species behaviour, had emphasized restraint over aggression, a more adequate title could have been “On Restraint”, but such a book is yet to be written. However, as many critics pointed out, Lorenz failed to transpose the applicability of the inhibitors to intraspecific lethality to humans, instead presenting a darker picture of human nature. While defending that species with greater lethal capabilities, particularly carnivores with powerful weapons systems, “possess sufficiently reliable inhibitions which prevent the self-destruction of the species” (Lorenz, 1966: 207) this would not apply to humans on the basis that, in the absence of built-in weapons systems, “no inhibitory mechanisms preventing sudden manslaughter were [initially] necessary”. The sudden emergence of artificial weapons at a relatively recent point of human evolution would have “upset the equilibrium of killing potential and social inhibitions” (id.) bringing about the onset of carnage.²²

²² Although this is not what Lorenz referred to in his argument, in evolutionary terms the most recent 10,000 years of human existence have seen the emergence of species atypical behaviours in terms of intraspecific lethality, first in the Near East and then in other world regions, particularly coordinated intergroup violence (i.e., warfare) and political structures that support and expand inequalities (i.e., the State). Structural violence is coincident with social stratification and socio-political organization at the state level (Sponsel, 2010: 21). The distribution of this new pattern in geographical and

In fact, the studies and introduction of this dissertation prove Lorenz wrong on this point and instead reinforce the cross-species validity (including humans) of his claims regarding the crucial role of ritualization in the controlled release of aggression as well as the applicability of the principle of correlation between lethal capabilities and more developed mechanisms for restrained ritualized aggression. This aspect will be further developed in the gender and age differences sub-section of this discussion, arguing that the studied forms of restraint are prevalent in segments within populations that are at higher risk of engaging in potentially lethal aggression (i.e., young adult males).

Our species has certainly proven its intraspecific destructive potential, but also its ability to develop mechanisms for restraint with great inhibitory capacity. In spite of the biased overrepresentation of lethality in Western culture and science, the effectiveness of inhibitory mechanisms is evidenced by our lower level of conspecific killing compared to the panmammalian average as well as the average for primates (Gómez et al., 2016) but also by the variations in homicide rates across countries and territories (UNODC, 2018) that suggest it is cultural and socio-economic factors rather than biological imperatives that explain the diverging patterns of human intraspecific lethality. Cultural variability in relation to human mechanisms for the restrained release of aggression is discussed in the next sub-section.

Lorenz's (1966: 204) pessimistic view of human nature presented the capacity for conceptual thought and verbal speech as detrimental for the control of aggressiveness. While Eibl-Eibesfeldt (2017 [1989]: 375)

historical terms has been uneven, from the first known transitions into the Neolithic occurring roughly 13,500-10,000 BP years ago during the pre-agricultural revolution (Knauff, 1991) to the current existence of a small set of small-band hunter-gatherer societies. In evolutionary time, however, the past 10,000 years –and much less time if we consider other world regions and particular societies– represents a very short period. This has led a number of authors to argue that, from an evolutionary perspective, we are not well adapted, at least neurologically, to cope with our current existence in large, hierarchical, competitive and violent communities where “the vast majority of human beings have become unhappy, ill and with limited material resources” (Giorgi, 2009: 117; also see Narvaez, 2013, 2014). The problem lies not with artificial weapons –which had existed as tools for hunting long before the Neolithic– but rather with ‘artificial’ societal arrangements.

considered human verbal capacity as a privileged output for ritualized fighting that allowed “the possibility to conduct conflict verbally”, Lorenz argued that “the great dangers threatening humanity with destruction are direct consequences of conceptual thought and verbal speech”. The extensive use of song duels and related forms of ritualized ‘fighting with words’, as well as other forms of complex species-typical ritual agonism (from potlatching to mock warfare) actually support the evolutionary role of verbal communication and indeed cognitive abilities in developing mechanisms to prevent potentially lethal aggression. The importance of verbal and non-verbal communication as part of the evolution of restraint mechanisms will be explored in the following subsection, presenting these human traits not as detrimental to the minimization of potentially lethal aggression (as Lorenz suggested) but actually as a result of the evolution of restraint in humans.

In the face of such grim prospects, Lorenz trusted “responsible morality” as the only viable inhibitor to the hazardous combination of lethal instincts and weaponry, instead of emphasizing the relevance and potential of restraint to prevent violence. Trying to understand and address violence in terms of morality alone has been strongly warned against both in theory (Gilligan, 1997) and practice (see, for example, “Cure Violence”). Stephenson (2015: 20) cautioned that by ignoring the evolutionary implications of ritualized behaviour in humans we are failing to understand their true importance, and also placing ourselves in peril. In the particular case of aggression restraint mechanisms, “the culturally constructed norm that makes killing a virtuous duty overrides the biologically formed ritualized behavior that dulls the edge of destructive violence in service of survival”.

By emphasizing morality alone we are misunderstanding the relevance of ritualized aggression. As it has historically been the case, from *potlatch* bans to graffiti criminalization, this has often led to suppressing instead of culturally reinforcing restraint mechanisms that can serve as inhibitors for potentially lethal aggression. The disruption of such mechanisms likely entails greater danger of escalated violence than atypical or accidental escalation due to failure of the mechanisms of restraint. Although morality and coercion can be effective in addressing the human potential for lethal violence, evolutionary restraint mechanisms continue to emerge in contexts of state failure to tackle

escalating potentially lethal violence. This is evidenced across the three studies of this dissertation: from the *gara poetica* of Sardinian shepherds to the *freestylin'* of Bronx youths. When states fail to provide conflict management mechanisms to solve serious disputes (i.e., criminal justice system not operational or trusted by gang members and marginalized communities, as in the two previous examples) alternative mechanisms (re)emerge to address the threat of unrestrained lethal aggression.

However, Lorenzian thinking regarding human aggression creates a paradox. On the one hand cultural assumptions regarding the inevitability of violence inhibit prevention strategies. If violence is considered inevitable and/or acceptable there will be less of an urge to focus on strategies that seek to understand and to address its risk and protective factors. On the other hand, outlets for restrained aggression (such as Hip Hop, explored in Study III) are targeted and repressed for being considered precursors to escalated violence or a component of what is perceived as a violent (sub)culture. In evolutionary terms the availability and usage of a wide and escalating array of options for restrained aggression among groups where the risk of potentially lethal intraspecific aggression is greater can be seen as natural and positive, while a negative correlation should be expected between the level of deployment of such mechanisms and the amount of unrestrained aggression. If in any population at risk of escalating into potentially lethal aggression we were to disrupt the mechanisms of restraint, the likely outcome would be higher levels of unrestrained aggression.

In contrast with this hypothesis, some scholarly literature on Hip Hop has often assumed the logical fallacy that correlation proves causation (*cum hoc ergo propter hoc*) therefore suggesting a causal relation between Hip Hop and violence. Just as Wilson and Kelling (1982) formulated the famous 'broken windows theory' that established that the presence of graffiti in urban environments inevitably leads to greater violence, other scholars claimed that exposure to Hip Hop music was correlated with the likelihood of engaging and accepting violence (Johnson, Jackson, and Gatto 1995; Tanner, Asbridge, and Wortley 2009). However, recent studies (O'Brien and Sampson, 2015; Walker and Schuurman, 2015) concluded that public denigration had no predictive power in relation to violence and that no causal link could be established between graffiti and violence. Evidence put forward in Study III in relation to the overall

thesis suggests a need to revisit assumptions regarding unrestrained aggression in relation to the mechanisms of restrained aggression. This may actually allow us to better understand how effective restraint mechanisms can be in different settings and situations and transcend the rigidity of moral solutions brought about by approaches to addressing violence that are subject to the assumption drag of the inescapability of human violence.

4.1 Gender and age differentiation in restraint mechanisms

The ethological examples discussed in previous sections evidence how across species most interspecific restrained aggression occurs between males, usually competing for mates, resources or territory. This is logical considering that most intraspecific aggression, restrained or unrestrained, takes place among males, a fact already noted by Darwin (1871). In humans, young adult males normatively present higher levels of both physical and verbal aggression (Buss and Perry, 1992; Fry, 2006) and for males in general nonlethal physical aggression is both more frequent and more severe compared to females (Björkqvist, 1994; Schober, Björkqvist and Somppi, 2009; Fry, 2017).

This is coherent with a disproportionately high death toll from violence among young adult males. Globally, some 200,000 individuals between 10 and 29 years of age are killed in homicide every year, representing 43% of the world homicide tally and making it the fourth leading cause of death within this age group. 83% of homicides in the 10-29 age range involve male victims, while 90% of perpetrators are also young adult males (WHO, 2016; Mitis and Sethi, 2015). Although within the field of violence prevention sometimes a 'knowledge gap' on why young adult males are both more likely to be victims and perpetrators of lethal violence is referred (Mitis and Sethi, 2015: 61), it may well be an 'acceptance gap' of multifactorial explanations that include ultimate evolutionary factors, considering data consistency with cross-species prevalence in male-male aggression.

To be consistent with Lorenz's (1966: 207) assertion that it is where lethal capabilities are higher that the inhibitory mechanisms for restrained aggression should be more prominent, it should be expected that those segments of a population that are mostly exposed to

potentially lethal aggression should engage more in such forms of restraint. Just as ethologists have shown how restrained aggression across species takes place predominantly among males (Archer and Huntingford, 1994; Bersntein, 2008; Kokko, 2008), this dissertation evaluated if human patterns of song dueling and marking behaviour reflected the same logic following the hypothesis presented by Fry, Schober and Björkqvist (2010: 115), that “Natural selection has led to the evolution of greater restraint among human males regarding physical aggression because they have the capacity to more readily inflict serious injury and death than do human females.”

Anthropological evidence (Beckerman et al., 2009; Moore, 1990) has shown how men engaging in more severe escalated fighting have lower individual fitness than less aggressive males, or males that are able to more successfully channel their aggression through restrained mechanisms (contra the now debunked proposition by Chagnon, 1988). In consequence, it can be argued that effective mechanisms for the restrained release of aggression serve to enhance fitness, particularly among the segments of a population that are more likely to engage in potentially lethal aggression. This is consistent with the findings of the three studies and the ethnographic examples presented here.

In Galiza, the practice of traditional *regueifa* song duels was usually limited to men (Taboada Chivite, 1972: 193; Prego Vázquez, 2000; Casal Vila, 2003: 60), and particularly to young adult males. While in the complex wedding ritual the initial *regueifa* dance duels were performed by married and/or older men and often also included the participation of women (Risco, 1962: 546, 566 and informants in Lousame), the more aggressive song duels were the domain of younger villagers. Across the ethnographical evidence on song duels, their practice in almost all cases involves exclusively men. Similarly, although Hip Hop has become a phenomenon crossing gender lines and today –as with the revival of *regueifa*– both male and female practitioners are well noted, in its earliest stages rap was also considered “a male thing” (Hooks, 1992).

Marking practices reveal a similar pattern in terms of cross-species and cross-cultural analysis. Across mammal species, males, and particularly dominant males, tend to mark more frequently than other age or sex groups (Johnson, 1973) while scent marking is strongly dependent on

scent glands with sex-specific chemicals that are androgen-dependent and connected with gonadal hormones and sexual maturity (Gosling and Roberts, 2001). In Galiza (A Guarda) and Norther Portugal (Póvoa de Varzim) marks were also used predominantly by males –although women could also inherit property bearing their paternal mark– and adopted in early adulthood, again a situation reflected in other societies. Likewise, graffiti *writers* within the culture of Hip Hop where initially – and still appear to be– overwhelmingly male (Lachmann 1988: 235) with ages mostly ranging from early teens to late 20s.

Although the observed patterns in relation to gender differences in restraint within human societies is consistent with the overall mammalian data, cultural variability and shifts are strongly dependent on cultural norms and perceptions regarding gender roles and socially sanctioned behavioural differences. The incorporation of female practitioners in Hip Hop *freestylin'* and *taggin'* or the evident role of women in Galiza's *regueifa* revival illustrate shifting patterns that obviously transcend any form of biological determinism. This is also obvious in societies where all individuals, regardless of sex, display a clear pattern of restraint shunning all physical aggression (i.e., the Semai, see Dentan, 1968; Batek, see Endicott and Endicott, 2008; Paliyan, see Gardner, 2010; or Ifaluk, see Lutz, 1988, 1990), again showing the powerful influence of cultural/environmental influences. Future studies specifically addressing sex and age differences in restraint and aggression across cultures and in the context of shifting patterns in cultural forms of restraint could shed light on this question.

4.2 Cultural differences in restraint mechanisms

In spite of salient commonalities across a very large set of cultures, it is evident that not all societies perform song duels or make marks, or at least not in the precise formats of those studied in this dissertation. Certainly, all societies perform one form or another of verbal fighting (the parent category for song duels) and, broadly understood, all societies perform some form of non-linguistic visual or scent marking behaviour. And indeed, all societies feature restraint mechanisms of variable intensity in terms of escalation and probabilities of injury.

In many contemporary cultures, ancestral forms of ritualized fighting have been transformed to a point that makes them almost unrecognizable. Just as Trobriand ritualized 'warfare' was transmuted into a peculiar adaptation of the game of cricket, wrestling as a social strategy to settle disputes has been ubiquitously institutionalized as a sport –roughly surviving in form but rarely in function in so-called 'folk wrestling'. Although Xinguano 'peace festivals' where tribes simultaneously competed and traded (Gregor, 1990, 1994; Fry, 2012) are a form of intergroup restrained aggression analogous to ancient Hellenic Olympics, that allowed Greek city-states to compete for dominance without deadly warfare (Raschke, 1988: 23), the contemporary Olympic games, FIFA World Cup, or, for that sake, Eurovision Song Contest, may be seen as further removed from less complex evolutionary mechanisms for restrained aggression. However, the high stakes and equally high investments made in the Olympic 'theatre' of the Cold War by the United States and the USSR (Guttman, 1988) illustrate the seriousness of restrained intergroup aggression in the state context.

Numelin (1950: 62, 218) takes this reasoning one step further in his *The Beginnings of Diplomacy* by claiming that some crucial features of modern diplomacy, such as diplomatic immunity or the establishment of certain times and spaces where antagonists can meet freely within certain rules, can also be traced back to ancestral forms of ritualization and restraint. In such a view, the 'immunity' of participants in a song duel, that are not held accountable for their insults, or the places of liminality created within border areas for ritualized activities –trade, hearings, offerings, etc.— can be seen as the cultural and evolutionary backdrop for many features of modern international relations.

The technologically driven shift of the *loci* of aggression into the virtual realm must also be noted. Briggs (2000: 121) had argued that Inuit radio talk-shows recreated the settings of traditional song duelling, sharing its features of publicity, ambiguity, and key role of the audience. This allowed "people to confront without confronting and to respond without responding", embedding and isolating conflict in formal, ritualized contexts of referential ambiguity, where an audience is "giving (imagined) support; providing (imagined) sanctions; creating safe distance between potential opponents; and, through all of the above, controlling antagonism and preventing actual conflict" (id.). The

way in which virtual outlets for aggression (particularly social media channels) can perform analogous functions is yet to be adequately explored. Although online disinhibition (Suler, 2004; Lapidot-Lefler and Barak, 2015) often brings unwarranted effects (i.e., cyberbullying) virtual bouts of verbal fighting ('flaming') can also be framed as part of restrained mechanisms for ritualized aggression.

Similarly, the Maring stake-planting rituals and ritualized boundary fights share many attributes with the Wagah-Attari evening border ceremonies of India/Pakistan, illustrating the continuity of territory-based forms of avoidance, marking and display. Cross-species analysis of territoriality shows a great deal of intraspecies variability (even on a seasonal basis) as it is an adaptive response to environmental factors. In some ecological contexts, territoriality is detrimental to fitness (Dyson-Hudson and Smith, 1978) making the marking of borders a costly and unnecessary activity in scenarios with constantly shifting and often overlapping ranges. Bearing in mind the Environment of Evolutionary Adaptedness, which was characterized by highly dispersed demographics, Sahlins (1959: 58) pointed out how hunter-gatherer territoriality is never exclusive, shifting on the basis of ecological variations, while contemporary hunter-gatherers that do maintain some kind of territorial range make these highly permeable, with mutual trespassing being a common feature (Dyson-Hudson and Smith, 1978). On this basis, this dissertation does not imply that territoriality is an evolutionary imperative –in fact, there is abundant evidence to the contrary, also among non-territorial primates– but avoidance behaviours do not necessarily imply territoriality. For example, many systems of 'house marks' including that of A Guarda seek to protect objects instead of land or resources.

Song duels also present significant variability, from exclusive use for individual disputes at the intra-group level to their use to settle conflicts between groups. In certain instances, societies may opt for milder forms to conduct intra-group agonistic interactions while setting aside displays or restrained physical aggression for more serious inter-group disputes. One such example is the *git* (songs) of the Rāute, a Tibeto-Burman-speaking hunter-gatherer society. Rāute recur to *git* during the sometimes tense barter negotiations with surrounding Indo-Nepalese Hindu agriculturalists using the duels as a strategy to "smooth intercultural

relations” and to “create a space of common ground” (Fortier, 2002: 236, 246) but do not use song duels to settle their own internal quarrels.

Just as territoriality and associated marking may not have been relevant in certain ecological conditions, not all societies need to incorporate the full fan of agonistic alternatives, and may instead settle for mild forms of avoidance or verbal display. Absence of more intense forms of ritualized aggression in societies where there is little or no risk of potentially lethal physical aggression (i.e., the Semai, Batek, Paliyan or Ifaluk; also see Fry, 2017) may indicate a relationship between levels of physical aggression and social tension and presence/absence of more complex restraint mechanisms. The emergence of Hip Hop in the midst of an urban epidemic of gang-related violence within some the most deprived neighbourhoods of New York city in the 1970s and the subsequent dissemination of this street subculture across the world’s marginalized communities is consistent with this explanation.

4.3 Restraint and the Evolution of Human Communication

Eibl-Eibesfeldt (1980: 68) argued that evolved patterns of behaviour can “substitute for each other as functional equivalents”, particularly through verbalization, as a consequence of the availability of two channels for communication: verbal and nonverbal. Huxley (1966: 258) had already conceived human linguistic capacities as a developed form of ritualized behaviour, and idea later on assumed by Eibl-Eibesfeldt (2017 [1989]: 375) who also considered that “verbal conflict is an extreme example of ritualized fighting”, serving as a strong inhibitor for unrestrained aggression and a mechanism for release.

Eibl-Eibesfeldt pointed out how verbal forms of interaction are often a direct translation of nonverbal patterns of ritualized behaviour,²³ where words and sentences serve as releasers. The same author (2017 [1989]: 544) considered that the task of ethnolinguistics was to understand the

²³ Eibl-Eibesfeldt stressed that although “performances may look very different” in principle “they are the same, that is, an expression of a shared biological heritage”, providing the example of phallic aggressive displays among competing males that can be uttered as verbal threats such in Turkish insult duels or Afro-american ‘dozens’ but also as carved phallic symbols.

“universal grammar of human social behavior”, on the basis of the following four theses:

1. The thesis of the potential exchangeability of nonverbal and verbal behaviour as functional equivalents.
2. The thesis of the drive decoupling through language.
3. The thesis of the higher ritualization potential of verbal behaviour.
4. The thesis of the contribution language makes to the facilitation of harmony in group life, in the sense of defusing confrontations. It results from theses (2) and (3).

With this last thesis, Eibl-Eibesfeldt (2017 [1989]: 545; also 1979) was specifically addressing “the verbalization of aggressive confrontations” or, in other words, “a defusing of confrontation by transferring the struggle into the verbal realm. It is with this technique that the conflict songs of the Eskimo achieve very high ritualization levels”. In contrast with nonverbal behaviour, such as restrained forms of physical fighting or even forms of non-contact displays, speech allows a higher level of ritualization than nonverbal behaviour, making

the interaction more detached, occurring this in a less emotionally charged atmosphere. One can talk and is thereby liberated from the compulsion of executing some specific behavioural act. If someone snatches an object from another person, that behaviour demands direct physical reaction. In verbal form, a threat or a plea initiates a discussion, which may, without escalation to violence, lead to conflict resolution (Eibl-Eibesfeldt, 2017 [1989]: 545).

A number of theories on the emergence of human speech highlight the discontinuity of language with any other non-human behaviour (i.e., Chomsky, 1996; 2016; Berwick and Chomsky, 2016), negating any relation with patterns of behaviour shared across species and emphasizing a point of rupture or revolution that characterizes ‘saltationist’ theories. Other proponents (i.e., Pinker and Bloom, 1990) see language as an evolved trait that emerged during hominization enhancing communications abilities but without a particular connection to restraint. Others, expanding on Lorenz’s bleak prospects, argued that the distinctive human “capacity to acquire, use, create, and recreate” linguistic codes “evolved through war and violence” (Shay, 2000: 48).

Paleoethnological explanations suggest a gradualistic process of bio-cultural co-evolution during hominization (Templeton, 2015), although there is no consensus on the drivers for this process or the point in which articulated language actually emerged. Tallerman and Gibson (2012: 2) noted how language cannot be understood as a monolithic entity as usually presented by innatist proponents “but rather a complex bundle of traits that must have evolved over a significant time frame, some features doubtless appearing in species that preceded our own”. In contrast with frequent explanations that tie the emergence of language with tool-making technologies and complex hunting techniques, Eibl-Eibesfeldt (2017 [1989]: 546) specifically remarked that the

important impetus behind the evolution of speech was probably not so much the need to transmit material knowledge as the continued ritualization of social interactions. Verbal conflict endangers the internal harmony of a small group less than physical fighting.

Although similar arguments have been put forward by others,²⁴ Eibl-Eibesfeldt’s idea that the evolution of restrained and ritualized behaviours to prevent potentially lethal intraspecific aggression has driven the emergence of complex human articulated language remains virtually undiscussed. However, recent findings may substantially alter this discussion. Clark and Henneberg (2017) argued that early anatomical changes in *Ardipithecus ramidus* (4.5 million years ago) involved shifts in skull architecture which correlate with reduced social aggression and are the same changes needed for the anatomical development of speech. Clark and Henneberg (2017: 106) explain how increased sociality and vocal ability co-evolved as a combination of socio-vocal adaptations that “does not exist in any other species of the great ape clade”. Although their co-occurrence in our hominin ancestors is unique, the authors note parallels in paedomorphic skull morphology of bonobos (*Pan paniscus*) and *Ardipithecus ramidus*, in sharp contrast with chimpanzees (*Pan troglodytes*), which would in turn explain the contrasting high levels of male on male aggression in the later species.

²⁴ Gans (2000), in more philosophical terms, presented the same conclusion that the initial function of language was “first and foremost a means of deferring violence”.

If increased vocal capabilities indeed co-evolved with shifts in hominin social structure that implied greater pro-sociability a strong basis exists to argue that such co-evolution was driven by the need to further develop pre-existing mechanisms for the restrained and ritualized release of aggression in a new emerging context of more complex social structures. Human articulated language and the forms of vocal communication among other primate species share many features, as a result of similar social problems that were faced during evolution (Seyfarth and Cheney, 2016). Tobias (1996: 91) claimed that language capacity is present at least since the emergence of the *Homo* genus some 2,5 million years ago and perhaps also in *Australopithecus robustus* and *Australopithecus boisei*, while Benozzo and Otte (2016) claim that it is precisely with *Australopithecus* that articulated language emerges. Clark and Henneberg's (2017) recent study concludes that even before that, *Ardipithecus ramidus* possessed some form of protolanguage.

If we admit, as Kimbel and Villmoare (2016) that "key *Homo* attributes may already be present in generalized species of *Australopithecus*, and that adaptive distinctions in *Homo* are simply amplifications or extensions of ancient hominin trends", it makes sense to follow the crumb trail left by ritualized agonism in the process of human speciation. Kehoe (2011: 45, fig. 1) presents this evolution in a diagram illustrating increasing variability and stereotypy from non-human ritualized behaviour to the extreme forms present in humans: on the one hand, human articulated language; and on the other, human rituals; divided on the basis of verbal or nonverbal communication being the dominant component.

This dissertation explores how two distinct forms of verbal and nonverbal communication can be explained within the framework of restraint mechanisms that minimize the occurrence of potentially lethal aggression. The emerging pattern of cross-cultural and cross-species commonalities suggests that increased complexity of ritualized restraint mechanisms lead to their evolution into distinct forms of human communication. Not only song duels but also human articulated language is explained against the backdrop of evolved mechanisms for restrained aggression. Marks, as a form of nonlinguistic writing, are also presented within the same evolutionary context. And just as it is suggested that articulated language emerged from simpler forms of

verbal displays, current forms of linguistic writing are also an outgrowth of previous forms of nonlinguistic marks.

The emergence of this articulation of signs and language in conjunction with the state as a form of socio-political organization, namely in Mesopotamia, Ancient Egypt, China and Mesoamerica, coincides with profound changes in terms of social structure. It may well be that expanded population densities, geographical and resource concentration, rigid social and political hierarchies, monopolies over routes of commerce, or the capacity to store goods beyond individual households, rendered previous marking practices ineffective or insufficient in addressing escalating conflicts within a context of unprecedented levels of violence and the development of warfare. Study II presents differences and commonalities between linguistic and nonlinguistic writing, against the common backdrop of ritualized behaviour.

Stephenson (2015: 21) highlighted how “ritualization played an adaptive role in the course of both biological and cultural evolution”. The evidence presented in this dissertation suggests that evolutionary selection pressures favoured behavioural mechanisms that minimize the likeliness of potentially lethal aggression among conspecifics. Such mechanisms are primarily those of restraint and ritualization and are widely shared across species. Within the interface of hominin biological and socio-cultural evolution, it is likely that restraint and ritualization played an important role in the emergence of anatomic traits that allowed the development of previous forms of vocal communication and, eventually, articulated human language.

More recently, cultural processes continued to shape and develop the mechanisms of restrained aggression. Many of the cultural manifestations presented in this dissertation, from *freestylin'* to the Olympics, have an obvious backdrop in the evolutionary mechanisms of restraint, even if their shifts cannot be explained solely on this basis, being subject to complex cultural and historical vicissitudes. Although in evolutionary history the mechanisms of restraint obviously impact individual fitness, group selection (Wilson and Sober, 1993) and inclusive fitness (Fry, Schober and Björkqvist, 2010) are also to be considered in their hominin evolution, where small band societies and territorial neighbours would often share alleles. As symbolic behaviour reinforces group cultural

propagation and social coherence (Boehm, 1989) the cultural embeddedness of restraint mechanisms across societies and their reemergence, reinvention or readaptation in times of social need (i.e., Hip Hop) attests their deep evolutionary roots.

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Verbal and Non-verbal Communication as Evolutionary Restraint Mechanisms for Nonkilling Conflict Management

Across species, unrestrained aggression among con-specifics has been strongly selected against due to increased fitness costs, making intraspecific lethality relatively rare or atypical. Evolutionary selection has instead favoured mechanisms for rule-based ritualized restraint such as song duel display contests or territorial mark-making practices. This dissertation considers the role of restraint mechanisms for the prevention of potentially lethal aggression as an evolutionary driver for the development and complexification abilities.

'Talking,' 'singing,' 'marking,' or 'reading' oneself – and whole groups – out of potentially lethal aggression offer greater chances of survival than a pattern of unrestrained 'all-out' physical fighting. The studies in this dissertation present a pattern of formal and functional continuity of restraint mechanisms across cultures but also across species, indicating a common phylogenetic origin.