



HumAnimUs

Studies in Zooanthropology

**Equines: Concepts,
Practices, Relations.
A Multidisciplinary Approach**

Edited by Amanda Minervini



International Society of
Zooanthropology

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IV, 1 (2026)

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Foreword

Roberto Marchesini and Cosetta Veronese, Directors of HumAnimUs

This special issue of our journal HumAnimUs—dedicated to equines—offers an exceptionally wide-ranging scope—from literature to science, from ethology to ethnography. While conceived for non-specialist readers, this comprehensive overview of our relationship with horses will surely provide insights, surprises, and touching moments, not only for newcomers to equine studies and horsemanship, but also for veterans of the field. This issue honors zooanthropology as a truly transdisciplinary science, one that merges knowledge with practice and enables that happy fusion between the sciences and the humanities for which our epoch, with its progressive alienation from nature and the non-human world, is in urgent need. We would like to thank all contributors for the time and dedication to making this valuable issue possible. A special thank you goes to our Guest Editor, Amanda Minervini. Their sensitivity, scholarship, passion, inexhaustible energy, and commitment to the cause of humans and nonhumans alike, through their engagement as a facilitator of human-horse interaction at EGLHE and as faculty at Colorado College, remind us that we are kin with other species and that it is only when we unconditionally acknowledge this kinship that we can fully express ourselves as humans.

Introduction.

Used or Listened To? Toward a Multidisciplinary Ethics of Equine-Human Relations

Amanda Minervini, Guest Editor

There is a moment in Tolstoy's *Kholstomer*—a story narrated entirely from the point of view of an aging, piebald gelding—when the horse philosopher turns his attention to the human practice of ownership. “Men are guided in life not by deeds but by words,” *Kholstomer* observes. “They like not so much to do or abstain from doing anything, as to have a word to designate different things.” The horse's meditation on property, on the word “mine” and the violence it licenses, remains one of the most quietly devastating critiques of human social organisation in nineteenth-century literature. That such a critique should be voiced by a horse, cast-off, scarred, nearing death, is not incidental. The working equine has always known something about what it means to be claimed, used, and discarded when no more “useful” to humans. This special issue asks whether we humans, in turn, are finally prepared to listen.

Moving from the philosophical and ethical (Bird), to welfare science in cross-cultural context (Gemma/Padalino), to zooanthropology with a touch of autoethnography (Minervini) and ecology (Wolframm/Savulchyk), then pivoting into clinical science (Dyson), to Graeco-Roman history (Notarianni), forward into ethnography (Diemberger), and finally the literary coda (Celiberti, in Italian), the essays gathered here do not share a single method or disciplinary home—on purpose. They emerge from animal welfare science and veterinary research, from ecofeminist/literary theory, from classical philology and multispecies ethno-

graphy, from philosophy and neuroscience. They were written in different languages, in different English variants, in different countries, and from different positions within and without academia. What they share is a conviction that equines have shaped deeply, but with insufficient recognition, human history and *Homo sapiens sapiens* themselves. Thinking mindfully about equines therefore requires us, for once, to think humbly about our own species and to reconsider our position on a shared planet, perhaps with the humility that Western male philosophers have not shown too often.

The difficulty, as Thaïs Bird argues in her examination of the centaur metaphor, is that equestrianism has developed extraordinarily sophisticated mechanisms for not listening. Bird traces what she calls projective anthropomorphism, the practice of reading horses through the lens of human desire, attributing to them the very motivations and enthusiasms that riders require them to display, and shows how it functions as a veil drawn over the horse's ethological reality. The centaur, that ancient image of human-equine prowess, turns out on closer examination to be an image not of genuine intersubjectivity but of absorption: a figure in which the horse's subjectivity is not shared but erased, replaced by a human-constructed inner life that consents to its own instrumentalisation. When the horse's 'willingness' turns out to be the product of training, habituation, and the evolutionary drive to mask pain and avoid conflict, the romance of partnership reveals its ideological function and abuses. Bird's call for a fundamental epistemic reorientation, learning to see horses as horses, to remain in the discomfort of not knowing what they want, resonates throughout this volume as one of its most urgent ethical demands.

Similar ethical concerns for the welfare of working horses in contexts far from the European equestrian mainstream are the subject of Pantaleo Gemma and Barbara Padalino's comparative

study of Ethiopia and Malta—two environments that illuminate, by contrast, the degree to which welfare outcomes are shaped not by biology alone but by the full complexity of socioeconomic and cultural context. In Ethiopia, welfare challenges are rooted in poverty, limited veterinary access, and inadequate equipment; in Malta, horses are embedded in tourism and cultural heritage, subject to growing regulatory scrutiny and public pressure. In both cases, the authors find, human factors such as owner knowledge, empathy, economic circumstance, are among the most significant determinants of equine welfare. Their argument for multidisciplinary, evidence-based, culturally sensitive policymaking, grounded in recognition of the horse as a sentient being with physical, emotional, and behavioural needs, offers a framework whose implications are global.

My own (double) contribution to this issue examines the Apulian autochthonous breed, the Murgese, on the occasion of the breed's centenary in 2025. The Murgese Horse, along with the Asino di Martina Franca and the Mulo Martinese, constitute a crucial presence in Apulian agricultural and military history, and still play important roles in sport, therapy, mounted policing, and other human-directed practices today. I approach these breeds not as immutable heritage objects to be preserved in amber but as living populations whose future depends on the courage to reconcile tradition with scientific rigour, and on the openness to update management and educational practices. I have situated questions of genetic bottlenecking, stallion management, and the transition from dominance-based to truly consent-based equine education within a broader argument about what it means to take seriously the welfare of an animal whose identity is inseparable from human history. A thriving breed, one that can change and remain authentically itself, is not merely a question of bloodlines: it is a commitment to the animals themselves, to their cognition, their sociality, and their capacity for a

life that is not merely functional. Given the current success of these breeds, breeders will need to think intelligently about safeguarding their health while resisting capitalistic temptations that risk diluting their most valuable traits and lowering the quality of these remarkable equines.

Global ecological stakes are addressed directly by Inga Wolframm and Varvara Savulchyk, whose conceptual review of the horse as a potential keystone species opens the volume toward a dimension that welfare science and critical theory alike have tended to underexamine: the horse not as a welfare subject or cultural symbol, but as an ecological actor. Drawing on frameworks from functional ecology and conservation science, Wolframm and Savulchyk argue that domestic horses kept for sport and recreation may, under specific ecological and management conditions, perform functionally equivalent roles to keystone species: as resource providers, ecosystem engineers, and mutualists. Their structured framework for identifying the conditions under which such effects may arise offers a new conceptual tool for thinking about how horses can be integrated into multifunctional land-use strategies. At a moment of intensifying pressure on global landscapes from climate change, biodiversity loss, and competing demands for food production and conservation, this reconceptualisation of the horse's ecological role has urgent practical and theoretical implications.

Whether positioned as ecological actors shaping global landscapes or as athletes performing in the arena, horses occupy a paradoxical place in contemporary human life: their value has never been greater, nor their inner lives more systematically ignored. In the centuries between Xenophon and the present volume, what changed is perhaps not the intensity of the human investment in horses, but the vocabulary and tools now available to examine it. The emergence of animal welfare science, ethology, and equitation science over the past several decades has gi-

ven us instruments for measuring what was previously only felt: the presence of pain, the expression of fear, the behavioural markers of discomfort that riders have long been trained to interpret as disobedience. Sue Dyson's contribution to this volume offers a rigorous account of her Ridden Horse Pain Ethogram, a validated clinical instrument comprising twenty-four behaviours, and its implications for the practice of equestrian sport. Her findings are unambiguous: a horse with a high pain score cannot be ridden into harmony, regardless of the rider's skill or intention. Pain is not a character flaw or a disobedience. It is a communication. And we all, as Dyson concludes persuasively, need to learn to listen.

That we are still learning, or perhaps relearning, is itself revealing. As Bianca Notarianni's examination of horses in Graeco-Roman literature demonstrates, antiquity already intuited that the horse was never a neutral or silent animal. From Homer's weeping divine horses to Plato's dark and unruly steed of the Phaedrus, from Aelian's proud mare who refuses the ass (such a noble but often vilified equine), ancient thought recruited equines to think through its most pressing questions: about desire and its governance, about the problematic and disputed lines between the wild and the domestic, the masculine and the feminine, the human and the "bestial." The fault line that antiquity drew, as Notarianni shows, did not initially run cleanly between humans and other animals; it ran through both, distributing prestige and subordination, freedom and bondage, across species and genders alike. Later on, the horse emerges from this tradition as the animal of elites, of war and contest, of controlled expenditure and carefully managed desire—and also, inescapably, as the figure onto which the deepest anxieties about that control were projected.

Yancen Diemberger's closing essay is a multi-sited ethnography of human-horse relationships in the Limi Valley of Northwe-

stern Nepal dealing with the end of equine life. Diemberger takes on a question that Western equestrian literature has largely avoided: what do endings reveal? Among the Limi (a high-altitude Himalayan community situated within a Tibetan Buddhist moral horizon in which humans and horses are co-sentient beings bound together across cycles of karmic rebirth), death is not a marginal event but a constitutive dimension of interspecies relations. The concept of “lungta,” or “wind-horse,” which ties the condition of household horses to the fortune and vitality of their human families; the ritual practice of “tsetar,” or “life liberation,” through which elderly or injured horses may be entrusted to territorial deities; the practical and moral negotiations surrounding the disposal of a horse’s body in a landscape of glaciers, rivers, and snow leopards—all of these emerge from Diemberger’s ethnographic account as sites where the deepest values of a community are revealed and tested. What makes this contribution indispensable is not only the richness of its ethnographic material but the methodological challenge it poses to the frameworks that structure the rest of this volume. Ethology, equitation science, consent-based training, welfare assessment: these are powerful tools, but they carry with them metaphysical assumptions about the nature of horses, about the goals of human-horse relationships, about what constitutes a good life and a good death, which are neither universal nor neutral. Reading Diemberger in dialogue with Dyson and Bird does not dissolve those frameworks, but it complicates them productively, insisting on the humility that genuine cross-cultural multidisciplinary inquiry demands.

A lyric coda written by Esther Celiberti presents a literary homage to equines. Moving through Tolstoy’s Kholstomer, Bunin’s Kabardinka, Pirandello’s abandoned horse on the moonlit road, Swift’s rational Houyhnhnms, Orwell’s betrayed Boxer, and Sternheim’s Libussa fused in ecstasy with her imperial rider, Ce-

liberti traces the long shadow that horses have cast across the literary imagination of the West. What she finds there is not sentimental consolation but something harder and stranger: the recurring intuition, across centuries and languages, that the horse knows something about the human condition that the human has not yet been able to fully face. That the animal at the bottom of the social order, bearing the weight of human ambition on their back, is also the animal most capable of reflecting that ambition back at us, undistorted and unglamourised, through large and patient eyes.

This special issue of HumAnimUs was conceived in the conviction that the study of human-horse relations requires multidisciplinary voices that do not normally speak to one another: scientists and philosophers, ethnographers and literary critics, veterinarians and ecologists. The conversations it stages across these disciplines are sometimes uncomfortable. They do not resolve into a single conclusion. What they share is a refusal to treat the horse as merely a vehicle—for human sport, human therapy, human meaning, human argument—and a commitment to asking, with as much rigour and as much honesty as we can bring to the task, what it might mean to do right by an animal that has been giving us so much.

Equines have been waiting. We only have to listen.

De-Centauring the Equine Partnership: Relinquishing the Myth of the Single Will

Thaïs Bird¹

Abstract

The metaphor of the centaur has long served as the ultimate aspiration of interconnectedness between horse and rider, symbolically fusing the seams between species. For the human, this togetherness often evokes a profound sense of rapture, bringing a feeling of being “truly complete” [Keaveney 2008: 450]. Yet considered closely, the completeness of the centaur is not an image of merger between equals, but a portrait of human will enacted through animal form. Consequently, in striving for this idealised togetherness, we must ask whose desires actually steer the encounter and, more importantly, what price the living animal pays for our fantasy.

Drawing on the qualitative accounts of competitive and recreational riders, this essay examines the incongruence between the human aspiration for connection and the inherently asymmetrical reality of equestrian “partnership”. I argue that the aspiration of a shared will frequently functions as a comforting, human-centric monologue. By casting horses into narratives of voluntary cooperation and willing submission, we veil the animal’s subjectivity as only legible when in alignment with human goals. Only in silent compliance can the horse be fully absorbed into the centaur, preserving the aesthetic of harmony at the cost of the living creature’s ethological reality.

Moving beyond this dynamic requires a painful dismantling of the stories we tell ourselves, and demands a deliberate disen-

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tanglement from the myth. To experience the horse once the encounter is fundamentally de-centaured is to be willing for human goals to be fundamentally reshaped by the animal.

Keywords

Human-horse relationship; anthropomorphism; equine welfare; partnership; equine agency

1. The Anatomy of the Myth

Undeniably, there is something deeply moving, almost mystical, in the felt oneness and interconnectedness between a rider and their horse. In trying to capture its mutuality, equestrians have long reached for the image of the centaur to symbolise the merger of beings, who, moving together “as one”, share a single body and mind. In this transcendent space, a rider might simply “‘think’ a cue, and the horse would respond”, dissolving the boundaries of species until they become “one flesh, one heart, one mind” [Keaveney 2008: 449].

Often described colloquially as a partnership, this feeling of interconnectedness is what elevates the mechanical practice of riding into something transcendent. Although achieving this ideal is elusive and its reality highly variable, the language surrounding it consistently returns to notions of trust, harmony, and unity [Tufton 2021]. True equestrian art, then, requires horse and rider to “fuse into one entity”, reaching a state where “physical communication between two creatures seems replaced by the harmonious movement of a single being” [Henriquet 2004: 1]. Even in competitive spheres, riders note that without this relationship, one might “go in and do the movements”, but it cannot “meld into something that’s beautiful where you’re both flowing together” [Hogg 2021: 24]. A merely “technically correct performance” lacks the essence of this interconnectedness [Hogg

2021: 24]. This desired fusion permeates far beyond mere physical synchrony, elevating the ultimate goal of sport riding into a profound “co-embodiment between horse and human, in which kinesthetic perception, intention, and volition merge” [Ford 2019: 329]. The merging of volitions is central to the ideal of partnership: Since Ancient Greece, the goal has been that the horse “should show off all his finest and most brilliant performances willingly and at a mere sign” [Xenophon 2006: 62-3]. This aspiration places immense value on a relationship where the horse should “submit himself happily and proudly to the will of the rider” [Loch 1990: 16].

The shared experience between horse and rider is most commonly articulated in academic literature through the concept of intersubjectivity. While interpretations of the term vary, it generally denotes the sharing of subjective states, including meaning, affect, and intention, between two subjects [Maurstad et al. 2013]. In practice, intersubjectivity is often experienced as a shared interactional space achieved while riding, emphasising a profound sense that two beings are not simply acting in parallel but are genuinely “in something together” [Gallagher 2012]. In this state of mutual attunement, synchrony is never merely physical, but is heavily layered with emotion: “It’s the connection between you and the horse... your movement becomes like cadence... he’s just there [...] It’s togetherness. It’s connection. A real, engaged moment, that feels so complete” [McVey 2022: 472]. Here, horse and rider are co-creating an experience that neither could achieve in isolation, where both the corporeal and mental boundaries between human and animal temporarily dissolve [Argent 2012]. In this fusion of being and identity, the centaur emerges: transcending mere mechanical connectedness, it becomes a creature of shared will and emotion.

2. The Aesthetics of Harmony

One of the primary ways equestrians achieve a feeling of connectedness is through the projection of a shared aspiration: “[...] it’s a wonderful feeling to know that such a powerful, graceful animal wants to be in [your] company and that [you] are a team” [Birke 2008: 116]. Frequently, this extends even further, with riders speaking of their horses as though the animals implicitly share specific human goals: “She’s competitive and she never quits ... I just think that she wants to be an endurance horse; she wouldn’t be happy just being a hack[ing horse]” [Webb 2021: 129]. In the rider’s telling, the horse is not merely cooperating; it is actively choosing the same path the rider has chosen. Conveniently, the horse’s inner life turns out to look exactly like the rider’s ambitions.

This perceived alignment of wills is not incidental to the equestrian experience of intersubjectivity. It is, in many ways, its engine. The togetherness that riders prize, that feeling of shared intention and merged purpose, depends on the horse wanting what the human wants: the ideal horse is one “that truly wants to be with you and stays with you by choice” [Birke 2008: 120]. We want the horse to feel joy when we feel joy, to choose us as we have chosen them. When the horse seems enthusiastic, when its energy rises to match the rider’s excitement, that apparent emotional alignment is taken as proof that the partnership is real, that the feeling is mutual. Told from the human head, the legs of the centaur want to move in rhythm to the music of the dressage test with the same fervour and ambition as the rider. To defend this narrative against critique, equestrians frequently assert that a horse cannot be forced to perform, claiming that “if the horse doesn’t want to, then it’s impossible” [Blokhuys 2017: 582]. Yet, this defence wilfully ignores the ethological reality of the animal: outside of mating displays, horses “do not perform the complicated sequences of movements and gaits expected in

dressage competitions” of their own accord [Patton 2003: 94]. Rather, “[w]hen horses compete in jumping and dressage, it is because they have been trained to do so in order to satisfy the culturally acquired desires of their trainers and riders” [Patton 2003: 94]. Furthermore, as a prey species, horses exhibit a strong behavioural drive to mask pain and avoid conflict. Their evolutionary mechanisms lead them to prioritise compliance and the concealment of physical distress, meaning that continued performance does not inherently indicate a willing disposition [Dyson et al. 2022].

How, then, can we continue to frame horses as willing partners when we might not hear the horse speak at all? Although the modern-day equestrian world is saturated with the desire for partnership based on voluntary engagement, could it be that we are far less removed from the coercive practices of the past in enacting this narrative? In the historical ideal, so completely is the horse’s will aligned with that of the rider, that he “renounces his very being for the service of man”, remaining “always obedient” to the desires of his rider even as he “encounters death with bravery” [Buffon 1791: 94]. The horse is the ultimate, self-sacrificing partner, one who “refuses nothing” and “often dies sooner than disobey” [Buffon 1791: 94]. While this eighteenth-century rhetoric of martyrdom may appear antiquated, modern equestrians continue to prize traits tied directly to a perceived willingness to be used in sport, such as obedience and submission [Cheung et al. 2025]. A great horse is still defined as one that “wants to be a part of the team” and “loves to work” [Dashper 2014]. The language of shared ambition, therefore, serves merely to reframe obedience as enthusiasm. To claim that a horse inherently wants the same competitive success as its rider is to mistake the product of control for evidence of consent. By projecting a human-like decision to cooperate onto the horse, riders obscure the profound power asymmetry at the heart of the relationship.

To assign these human motivations to the horse is to engage in what Marchesini [2021] calls projective anthropomorphism: the practice of layering human traits onto another species in a way that makes the animal seem human, effectively erasing its true nature. This arises most frequently in relationships characterised by high emotional attachment but low understanding of species-specific behaviour. Equestrians frequently attribute complex intentions and traits to their animals, believing they experience “the full range of emotions [like] humans” [Fiedler et al. 2025: 4]. This projection serves as a powerful tool for connection and relationship building. A rider might fondly observe, “[...] I really do think he has a sense of humour!” [Keaveney 2008: 447], or a groom might explain away a bad mood by asserting that “horses, like humans, do not like hot weather and can become grumpy” [Korkmaz 2025: 9]. However, in moments where a horse’s behaviour runs counter to human expectations, anthropomorphic projections often become a tool for assigning blame onto the animal. Extensive research indicates that behaviours typically categorised as “training problems” or “resistance” are frequently species-specific responses to underlying musculoskeletal pain, discomfort, or fear occurring in contexts that humans find inconvenient [Fureix et al. 2010]. Due to a pervasive lack of behavioural literacy, riders, coaches, and even veterinarians often fail to recognise signals of pain and discomfort [Bell et al. 2019]. A horse evading an aid is rarely granted the grace of being confused, in pain, or physically unable to perform the movement. Instead, riders insist, “I don’t believe it’s because he doesn’t know what to do, I think he knows perfectly well what to do” [Tufton 2021: 242]. Lacking ethological understanding, equestrians often reach for the anthropomorphic veil to fill the conceptual void, complaining that the horse is “just taking the mickey” [Luke et al. 2023: 10].

By framing a horse's behaviour as a humanised character flaw, the rider transforms a struggling animal into a willing antagonist: A mare, possibly in pain due to hormonal imbalances, is simply dismissed as being "moody, bitchy and difficult" [Dashper 2018: 18]. The use of labels such as "disrespectful" or "naughty" operates diagnostically, simultaneously defining the issue ("the horse is being disrespectful") and prescribing the appropriate response ("you must establish dominance"). Once such diagnostic labels are applied, riders are significantly more likely to employ punishment-based training methods, such as jerking the reins, hitting, or escalating physical pressure [Bartlett et al. 2024]. Noting that her horse frequently pinned his ears back and flared his nostrils for "no reason", one highly experienced equestrian and dressage judge rationalised her disciplinary approach: "he'll get a whack if he's naughty, but he's never been mistreated" [Luke 2023: 5]. The framing of the horse as a "malingeringer" with an attitude problem, shirking duty by feigning incapacity, effectively foreclosed any meaningful inquiry into the horse's underlying welfare. Consequently, the horse's aggressive displays, which are widely recognised ethological indicators of pain [Gleerup and Lindegaard 2016], are justifiably treated as something to be disciplined rather than a legitimate expression of discomfort. Seen through this anthropomorphic veil, the horse that bolts is not frightened. It is "taking the piss". The mare that resists is not in pain. She is "being a cow".

Given that this is the lens through which riders are taught to interpret equine behaviour, often actively reinforced by coaches [Ross et al. 2025], it is no surprise that equestrians are heavily enculturated to view a horse's reluctance as a "battle of wills" that the human must unequivocally win. A young mare's refusal to step in the desired direction is quickly interpreted as a moment of defiance, prompting the instructor, Bertie, to step in and coach the rider through the "problematic behaviour":

Louise: What if she doesn't give up though?

Bertie: There isn't time to question it. Don't start thinking it might not work or she will fight ten times harder. This is an opportunity, another opportunity, for you to really stamp your authority on her. She needs to know this, she needs you to win this battle if she is going to be a happy ridden horse for the rest of her life. She might be going to have a tantrum but don't shy away from it, kick her on [...] Don't let her stubbornness beat you, she's a dominant mare but she will go through this, don't worry, that's it... [Jones McVey 2017: 107, Dictaphone recording, June 2015].

In this exchange, the horse is not merely coerced but narratively vilified through the projection of human-like attributes. Not only does the instructor justify the escalation of pressure by framing the horse's behaviour as a "tantrum", but additionally claims that the mare needs to "lose the battle" in order to eventually become a "happ[ily]-ridden horse".

It becomes clear then, that when the horse's "wants" are not in line with those of the human, when they are not a willing partner, equestrians invert the partnership narrative so that the horse's compliance is framed as essential—not to the rider's agenda but to the animal's own well-being. Submission to the rider's will is enacted and justified through the language of care, where "[it] is absolutely essential for [the horse's] psychic well-being that we dominate him completely" [Hempfling 2001: 29]. Equestrians effectively silence the horse's communicative attempts by recasting resistance as a barrier to the animal's own "peaceful state of mind" [Hempfling 2001: 29]. This framing of the interactions does not just ask for obedience, but demands that horses find fulfilment, even happiness, in their own subjugation.

Despite the glaring contradiction between the desire for “oneness” and its enactment through coercion, the equestrian community holds onto the ideal of partnership with a clenched grip. This dedication is fortified by the immense personal and financial sacrifices riders make for their horses, which is frequently pointed to as proof of the relationship’s purity. Riders will readily sacrifice their own comfort, eating “beans on toast for a month” to ensure their horse receives physiotherapy, farriery, and professional training [Cheung et al. 2025: 7]. The financial and emotional toll of the care provided to their horses may serve to justify the “tough love” they administer when the horse does not perform according to expectations. However, the rationale underpinning this exceptional standard of care is frequently more pragmatic and performance-oriented than purely empathetic. This anthropocentric approach to welfare treats the horse as a functional athletic machine, prioritising human-directed care over the animal’s fundamental ethological requirements. Premium feed, specialised equipment, and an array of rugs and saddle cloths [Luke 2023] become more important than the horse’s ethological requirements for social contact, regular turnout, and ad lib forage [Hausberger et al. 2008]. While practitioners often acknowledge that horses require these conditions from a biological and welfare perspective, their needs are often dismissed as being incompatible with competitive sport, arguing that “that’s not the way the industry works. We can’t do that” [Cheung et al. 2025: 6]. The horse’s well-being is maintained primarily to ensure its continued utility: “A happy horse is a happy athlete, and a happy athlete is going to produce results” [Cheung et al. 2025: 5].

This pragmatic approach to welfare exposes a profound contradiction at the heart of the horse-human partnership: claiming to deeply love an animal, to desire a relationship of reciprocity and mutual regard, while simultaneously confining it, dictating

its movements, and subjecting the entirety of its life to a human agenda. To resolve this cognitive dissonance, riders must convince themselves that the horse actively desires the very life that restricts it. Reaching back to the romanticised narrative of shared ambition, equestrians project a human competitive drive onto the animal, insisting that it possesses a “work ethic” or actively “wants to be a part of the team” [Dashper 2014]. Just as the young mare needs to lose the battle to become a “happy ridden horse” [Jones McVey 2017: 107], riders say that horses require a human-assigned job to achieve fulfilment: “I think they’re the most happy [...] when they have a job that suits them” [Cheung et al. 2025: 6]. By constructing a narrative where horse and rider share the same intentions and goals, the human renders the horse’s instrumentalisation entirely justifiable, effectively masking the coercion at the heart of the partnership. The horse is not stripped of its subjectivity entirely; rather, by drawing the anthropomorphic veil over the animal, the human constructs a highly specific, human-centric inner life for them. Safely behind this veil, the horse fits neatly into the human narrative of cooperation, perceived as eagerly consenting to its own instrumentalisation. An athlete is supposed to want to perform. A worker is supposed to derive pride from the job.

Yet, the moment this cooperative veneer slips, the underlying power dynamic is laid bare. When the horse inevitably fails to display this projected willingness, the rhetoric of partnership vanishes, replaced instantly by the language of contractual obligation. Cast as an “athlete” or a “worker”, the horse is simply expected to serve regardless of its desires: “they do have a job to do. So they need to do [it]” [Cheung et al. 2025: 7]. This contractual framing allows the human to simultaneously love the animal and demand its subjugation; the rider can claim the horse as a “pet”, while insisting that they must “perform when I ask him to” [Keaveney 2008: 449]. Here, the relationship between domi-

nator and dominated allows the human to impose their objectives while denying the reality of the dominated [Cousquer 2023]. Through narratives of ambition and cooperation, the horse's actual experience is rendered irrelevant, replaced entirely by the projected fantasy we require it to fulfil.

In summary, projective anthropomorphism acts as the primary translator of the felt relationship between horse and rider. However, when this anthropomorphic lens is applied without the grounding of behavioural literacy, it functions as a veil that effectively masks the biological reality of the horse. Within this framework, equine subjectivity is not so much acknowledged as it is curated, tailored to fit a human-centric narrative of willing cooperation and shared ambition. The rider's significant investment of time, emotion, and care then serves as the ultimate moral justification, legitimising the centaur ideal while simultaneously reframing any non-compliant behaviour as a character flaw or a breach of contract rather than a legitimate communication of pain or distress. Ultimately, the centaur reveals its true form. Rather than a figure of genuine meeting or symbiotic merger, it is the unconscious expression of a dominant-subordinate relationship, enacted through the complete absorption of the other. It is strictly the human head that makes the decisions, dictates the purpose, and sets the terms of being. The horse is reduced to the legs, functioning merely as the means of movement through which the human will is enacted.

3. Removing the Veil

To critically examine the equestrian ideal of partnership as expressed by the centaur is not to dismiss it as cynical fiction. The aspiration for true connectedness is usually entirely genuine. Riders often deeply love their horses, and they sincerely yearn for an intersubjective space characterised by mutual trust and authentic communication. The figure of the centaur, however, re-

presents not an enactment of intersubjective togetherness but an absorption, or even an erasure, of the horse's subjectivity in favour of one constructed for it by the rider. To move beyond the aesthetic distraction of the myth is to finally confront the question we have avoided: "Do I simply want a malleably motile yet essentially mute creature at my disposal, one who offers no resistance, or do I aspire to an inter-activity, intra-activity and inter-affectivity wherein the very possibilities of coming together in community take shape?" [Smith 2022: 61].

Real intersubjectivity, if it is to mean anything beyond the coordinated movement of two bodies, would require something the centaur cannot accommodate: Two separate beings, each with their own perceptual world, their own way of processing experience, encountering each other across that difference rather than dissolving it. Not a shared body directed by a single will, but two bodies, two minds, choosing to move together without the erasure of the other. To advance from an anthropocentric monologue to an authentic dialogue requires a profound recognition of the horse as a true "other". As Eisler and Fry [2019] observe, any journey from domination to partnering demands that we critically confront the barriers preventing a genuine meeting. True dialogue, by its very nature, requires both parties to be vulnerable to change. Yet, in the equestrian context, this human willingness is frequently absent, stifled by our own agendas, where competitive goals and ambitions often take precedence over the needs of the animal [Luke 2023].

To arrive at a genuine meeting of human and horse, then, there must be a rupture of established perceptions. The projected veil of the "willing partner" must be torn away, removing the instrumentalisation of care and the comforting illusion of eager obedience which insulate the rider from the horse's subjective experience. But how can this veil be removed? In practice, this can occur when the dissonance between the rhetoric and desire

of mutuality and the reality of how horses are treated becomes too vast to ignore. This may have been the experience for one rider, whose horse showed “problem behaviours” related to pain, but was advised to use “harsh” tack to “crank her face down”, with coaches telling her to “smack her” or “punch her in the face” when the mare showed discomfort by pinning her ears [Cheung et al. 2025: 9]. Enculturated within a system of dominance, the rider was expected to follow the established script by vilifying the horse and forcing compliance. But she found she could not. “[T]his horse has been nothing but kind to me, she’s been so sweet. I don’t want to keep hitting her” [Cheung et al. 2025: 9]. Faced with this reckoning, and unwilling to abandon the ideal of a willing and trust-based relationship with her horse, the rider chose to leave the competitive world entirely.

The rider’s refusal to keep hitting the mare is what is able to tear through the veil of projection that had rendered the horse’s suffering legible only as disobedience. Stripped of that anthropomorphic framing, the horse appeared as what she had been all along: a creature in pain, communicating in the only way she could. Roberto Marchesini [2021: 41] describes such encounters as capable of initiating a profound process of decentring, an epiphany where the human is suddenly confronted by the undeniable, independent subjectivity of the animal. In this state, the rider encounters the horse as it is, as a horse, as a creature both intimately similar to themselves in that it experiences and suffers, and fundamentally alien, as a creature with its own kind of desires, fears, and its own kind of subjectivity. Recognising the horse as an independent fellow subject also has implications for the rider’s own self-understanding as a rider. In extreme cases, they will fail to reconcile their identity as a rider, based on coercive actions required by the sport as it is, with their conception of the animal they must coerce. If this is so, then the equestrian world is suffused by a delusion of intersubjectivity which harms

horses and leaves humans deeply mistaken about the relationships they are in. It would be an insufficient remedy to such a state of affairs to simply hope for personal epiphanies in sufficient numbers to change the sport for the better. The problem is a systemic one, and so the solution can only be systemic. At the same time, it is an epistemic one - it is an issue of false understanding and mistaken beliefs - and so its solution must also be epistemic.

A fundamental shift is then required: equestrians must learn to see horses as horses. A necessary precondition to this is actively seeking out and remaining open to the objective ethological information available to us. To truly engage in dialogue, the human must relinquish the predetermined scripts that easily dismiss resistance as the protestations of a 'moody mare' or an 'attitude problem.' Instead, riders must develop the behavioural literacy to read the ethological, rather than the narrative, meaning of the animal's actions. Developing this literacy may even allow riders to abandon the punitive mindset altogether:

“[I]f you do a jump course and your horse refuses a jump, you're not going to just be angry because he refuses... you're going to sit back and think what happened?... you're not going to automatically make an assumption: that stupid horse did this to me” [Brandt 2004: 308].

Acquiring this behavioural literacy, however, often precipitates a painful retrospective epiphany. When we finally begin to listen, we must confront how much of the horse's communication has been silenced by our own comforting narrative of cooperation. How often was a horse, its back already racked with pain, punished for disobedience after refusing a jump that would have only caused it further agony? Stripped of the veil of willing

compliance, equestrians are left to agonise over what our coercive practices tried so hard to conceal: “what if [the horse] was only jumping out of fear, after all?” [Jones McVey 2017: 98]. Laid bare by this realisation, the equestrian ideal reveals its incredibly fragile condition. The rider desperately wants the horse to be happy, but equally needs the animal to desire exactly what she desires. As the foundation of her instruction is cast into doubt, she is left with an irreconcilable conflict: “How could she be sure that he was jumping happily, particularly since [...] she was supposed to present him to the ditch with command and conviction, rather than as a question or experiment?” [Jones McVey 2017: 98]. But the traditional script of absolute human direction leaves no room for a genuine exchange: It is only in a state of complete, eager submission that the horse can be seamlessly absorbed into the figure of the centaur, allowing the dyad to merge into a single will. It is only in questioning the core narrative of domination and willing subjugation, well concealed within the ideal of togetherness, that the rider may come to recognise the erasure of the other: “How would such committed leadership leave space for [the horse’s] choices and experiences to emerge?” [Jones McVey 2017: 98]. If the underlying structure of command remains absolute, the horse’s communication is stripped of its agency; its choices may be witnessed, but they are never permitted to fundamentally alter the human’s trajectory. Without the power to change the encounter, the horse’s voice remains a hollow participation in a pre-written narrative.

4. The Disentanglement of the Myth

Recognising the asymmetrical power dynamics of traditional equestrian frameworks, and desperate to avoid a relationship built on fear and coercion, many riders are seeking “kinder” alternatives. A significant shift is evident in the growing adoption of Positive Reinforcement Training (PRT) and cooperative care,

which emphasise voluntary engagement and assent-based interactions. This represents a fundamental reorientation of the human's guiding inquiry: Rather than asking "How can I get this horse to do what I want, albeit in the kindest possible way?" riders are learning to ask, "What would this horse like to do?" [Pignon et al. 2009: 17]. This shift toward assent fundamentally changes the structure of the dynamic from command to inquiry. To achieve it, equestrians must abandon their traditional authority; "[i]nstead of thinking of themselves as teachers, they [must] become pupils," entering a new territory guided by "an absolute determination to put the horse on a more equal footing with themselves" [Pignon et al. 2009: 18].

By prioritising the horse's genuine voluntary cooperation, the interaction becomes a practice of getting to know animals and giving them a platform for their own decisions. Following the philosopher Vinciane Despret [2013], this means learning to ask animals the right questions: questions aimed at "letting animals speak" rather than simply confirming human assumptions. Practitioners seeking dialogue must pivot toward allowing the animal to initiate the conversation and set its terms. When humans genuinely open this space, the communicative landscape shifts entirely: "the more you ask them, the more they give answers. And they do have quite a few opinions" [Schuurman 2017: 42].

However, even within alternative methodologies that seek to foster dialogue, the underlying dynamic can remain fundamentally monological if the ultimate objective is merely to steer the horse's behaviour toward human-centric outcomes. Smith [2011: 12] cautions that PRT and clicker training are appealing as a means of creating a "kinder, gentler, more responsive and 'beautiful relationship'" with greater regard for the horse's intelligence, yet it falls short of being a definitive remedy for these systemic issues. Ultimately, "even clicker training and, indeed, other

positively reinforcing methods of shaping horse behaviour, cannot escape the critique of subjugating the horse's natural inclinations to the actions the trainer wants the horse to perform" [Smith 2011: 12]. If the human's goals remain fixed and unyielding, the dialogue is merely an illusion of choice. As Birke [2008: 125] notes "there is little space here for the horse to refuse the relationship with the human". Because a true refusal is never accepted as a valid outcome, the horse's apparent participation changes nothing about the structure of the relationship: "[e]ither way, the horse has little choice" [Birke 2008: 125]. A genuine dialogue, therefore, requires the willingness for human goals to be fundamentally reshaped by the horse. As such, the horse's response must be granted the power to interrupt or even dissolve the human's original intent. This demands a continuous interrogation of the very foundations of our practices and expectations, not just of what is expected of the horse, but whether the nature of the shared activity is truly shared at all.

A true interaction of mutual influence rests entirely on the human's willingness to honour the choices being made. Not only must the horse have the psychological and relational freedom to say "no," but the environment itself must provide the animal with the physical room to disengage or pursue an alternative action. When the horse is granted this space, the human must transition from an absolute commander to a benevolent guide who actively respects their refusal. For one horse owner, this shift in power means walking out to the paddock, finding her horses unwilling to come inside, and accepting their decision: "my horses can speak, I can ask them, will you come in, oh, you won't... Okay, stay out for the night" [Schuurman 2017: 42]. Here, the horse is recognised not as a subordinate to be managed, but as an active agent making choices about its own life, and the human allows that feedback to dictate the outcome.

However, handing over this level of control within human-centred activities such as ground work or other training touches upon a profound anxiety within equestrianism: if we surrender our control and truly allow the horse to choose, what if they choose to walk away? What if my horse wants nothing to do with me? But this is an anxiety inherent in any loving relationship. We cannot genuinely claim to desire a partnership if our partner has no choice but to participate. Authentic intersubjectivity requires us to risk our own dominance. We must be “courageous enough to throw the cautious controls of disciplinary power to the wind,” abandoning the safety of coercion to give “freer rein to the vital powers shared with other animate beings” [Smith 2022: 61].

Relinquishing the centaur means relinquishing something more uncomfortable than a metaphor: it also entails relinquishing the certainty that we know what the horse wants. Projective anthropomorphism has always done that epistemic work, translating equine behaviour into legible human feeling, providing us with the fantasy of shared will. As Smith [2011: 9] observes, the stories we tell about horses remain caught, however carefully, in anthropomorphisms and projections of mimetic consciousness. The task is not to find better stories. It is to learn to act well in their absence.

The task is not to invent a better or kinder projection to drape over the horse. It is, rather, to learn to remain in the unsettling space where projection fails. It is only in this absence, where the horse ceases to act as a mirror for our own desires, that we may finally hear the horse speak for itself. If we are able to endure this uncertainty and “trust horses enough in such situations to let ourselves learn something new” from them, we create the conditions necessary for a genuine dialogue [Karkulehto and Schuurman 2021: 128]. It is only by recognising the horse’s independent subjectivity as the starting point of the interaction

that “things may start to look different in horse training and schooling, and in the life shared between humans and horses” [Karkulehto and Schuurman 2021: 128]. To achieve this, we must resist the temptation to retreat to the romanticised narrative of the eagerly submissive horse. While it is undeniably easier to hear confirmation than to sit with what we do not wish to know, such comfort is bought at the cost of the horse’s erasure. To fall back on the hierarchical monologue, with humans standing over and against the animal as object, is to return to the centaur in its truest form: the unconscious embodiment of the dominant-subordinate relationship. And so, we must relinquish the metaphor of the centaur, for, in all the togetherness it embodies, it is also the erasure of the horse as a distinct being. The centaur, after all, has only a human head.

5. Beyond the Centaur

Relinquishing the human-headed metaphor of the centaur need not be mourned as the loss of the ultimate equestrian fantasy. Rather, it is the necessary abandonment of our expectation that the horse should find delight in its own subjugation. The aspiration for partnership, friendship, and mutuality is very real, echoing clearly in the words of the riders explored throughout this essay. Yet, this desire rests on a fundamental incoherence. We cannot claim an aspiration for genuine oneness if any behaviour falling outside our cooperative narrative is immediately framed as a flaw to be corrected or punished.

What this essay has traced is the cognitive and cultural labour required to keep that incoherence concealed. Projective anthropomorphism does not merely distort our perception of the horse; it generates the very conditions under which the centaur appears plausible. A horse that wants what the human wants, that derives fulfilment from its role in sport, and that chooses

obedience as freely as a partner chooses to stay, is a horse that can be absorbed into the figure without visible remainder.

To relinquish the centaur is not to abandon the aspiration for connection. It is to recognise that the centaur was never an image of connection at all. Its beauty was always the beauty of a fantasy sustained by the silence of one of its subjects. True togetherness does not require merger. It demands that we actualise connection through a non-hierarchical dialogue, learning to listen before we speak. We must envision two distinct beings tethered not by absorption, but by a line of attention held taut across the space that separates them. That space must be honoured and held open. The moment it collapses, when the line binds two bodies into one, and a single will directs them both, the horse disappears.

What remains of the relationship, once de-centaured, is a reality in which the horse may refuse. It is a space where that refusal carries weight, and where the rider no longer has recourse to the comforting certainty that the horse wanted this too. Whether this vulnerability is actually compatible with equestrianism as currently structured is an open question. Perhaps the encounter with the horse's genuine otherness, honestly received, requires not a kinder method within the existing framework, but a willingness to let that otherness redirect the framework itself.

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The Welfare of Working Horses: An Interdisciplinary and Cross-Cultural Approach

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Abstract

This paper examines the welfare of working horses through an interdisciplinary lens that integrates animal welfare science, zooanthropology, ethics, and law, with a comparative focus on Ethiopia and Malta. These two contexts represent contrasting models of human-equine relationships: in Ethiopia, horses are essential to daily livelihoods and face welfare challenges rooted in poverty, limited veterinary access, and inadequate equipment, while in Malta, horses are embedded in tourism and cultural heritage and subject to growing regulatory oversight and public scrutiny. Drawing on the Five Domains model, established welfare assessment protocols, and relational frameworks from zooanthropology, the study argues that equine welfare cannot be understood through biological or environmental indicators alone, but emerges from the dynamic interactions between horses, humans, and their broader socio-economic and cultural contexts. Human factors – including owner knowledge, empathy, handling practices, and economic circumstances – are identified as central determinants of welfare outcomes.

The paper further analyses how ethical frameworks, including animal rights theory, utilitarianism, contractarianism, and respect-for-nature perspectives, alongside existing legal instru-

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ments at international, regional, and national levels, shape and sometimes constrain welfare improvement. A key finding is that effective welfare governance requires evidence-based policymaking that is scientifically grounded yet sensitive to local realities, supported by education, stakeholder engagement, and institutional capacity. The paper concludes that cultural traditions and animal welfare standards are not inherently opposed but can evolve together toward more ethical and sustainable practices, provided that horses are recognised as sentient beings whose physical, emotional, and behavioural needs are central to any regulatory or management framework.

Keywords

Equine welfare; human-animal interaction; zooanthropology; Ethiopia; Malta; animal welfare assessment; evidence-based policy; cultural heritage; One Welfare.

1. Introduction

The importance of animal welfare is increasing in different fields, including ethics, science, sociology, politics and law [Lund et al. 2006; Carenzi and Verga 2009; Favre and Giménez-Candela 2015]. This reflects recognition of animals as sentient beings capable of experiencing both suffering and pain, as well as positive states, across different scientific and legal frameworks [European Union 2012; Broom 2011; Favre and Giménez-Candela 2015; Mellor 2016]. Over the past thirty years, animal welfare science, as a multidisciplinary subject, has significantly improved the understanding of animals' physical and psychological needs [Fraser 2008; Broom 2011; Mellor 2016]. Despite this scientific progress and public concerns [White 2013], working horses remain underrepresented in global animal welfare legislation [Pritchard 2018; Derbib et al. 2024; Sossidou et al. 2024].

Animal welfare is widely recognised as a multidimensional concept incorporating physical health, psychological well-being, and the ability to express species-specific behaviours [Broom 1996; Duncan and Fraser 1997]. It also supports the idea that welfare extends beyond the absence of disease or physical impairment to include mental and emotional experiences [Mellor 2016; WOA 2021]. Animal welfare science is increasingly moving beyond a deficit-based approach, one that focuses mainly on preventing suffering, towards a more holistic understanding of positive welfare [Lawrence et al. 2019]. This shift recognises that good welfare is about actively promoting positive experience in animals, such as comfort, the opportunity to express natural behaviours and the positive interaction with conspecifics and humans [Duncan and Fraser 1997; Mellor 2016; Mellor 2017]. Veterinarians play an important role in protecting not only the physical health of animals, but also their overall well-being. Increasingly, the field is beginning to mirror human medicine by recognising that mental health is a key part of an animal's quality of life [Morton 2010]. A joint report by the Federation of Veterinarians of Europe (FVE) and the European Association of Establishments for Veterinary Education (EAEVE) emphasised the need for more consistent and comprehensive teaching of animal welfare, ethics, and law in veterinary education, highlighting that a good veterinarian must also be able to recognise and navigate ethical challenges in practice [Morton et al. 2013].

Animal welfare becomes even more complex when we consider working horses. Domestication has created welfare challenges, as it often limits horses' movement, social interactions, and ability to express their natural behaviours [Goodwin 2007]. In horses, the concept of the "three Fs": Friends, Forage, and Freedom, highlights the importance of social interaction, access to grazing, and the ability to move and behave naturally [Fraser 2012; Verwijns 2024]. However, everyday management practices,

such as transport and housing, can also have an important impact on their needs. These practices do not just affect physical health, but also how horses feel and behave, sometimes leading to stress or frustration [Padalino 2015]. To improve animal welfare, we need to look beyond simply avoiding harm. By doing so, we can move closer to ensuring that animals are not just surviving but living lives that are truly worth living.

Their welfare is shaped not only by their physical condition, but also by the people who depend on them [FAO 2014]. In fact, there is a close and often complicated relationship between the welfare of working horses, their owners' beliefs about how horses think and feel, and the owners' economic situation [Seck et al. 2024]. This reflects the broader idea of One Welfare, which recognises that animal welfare, human well-being, and the environment are deeply interconnected [Pinillos et al. 2016]. For this reason, improving animal welfare is not just about the animals themselves; it also involves supporting people and protecting the environments they share.

Horses have been closely linked to human life for around 6,000 years, playing a vital role in shaping cultures, livelihoods, and traditions worldwide [Johns 2006]. However, the way horses are used, and the conditions they experience, vary depending on the economic context, culture and traditions. In low- and middle-income countries, horses are often essential for daily survival, supporting transport, agriculture, and income generation, and forming a key part of household livelihoods [Merridale-Punter et al. 2024a; Grace et al. 2022]. In contrast, in high-income countries, horses are more commonly associated with leisure activities such as sport, tourism, and companionship. In these settings, their role is less about survival and more connected to culture, identity, and tradition [Douglas et al. 2022].

The relationship between animal welfare and tradition is a dynamic and evolving interaction that requires careful, evidence-

based understanding and sensitivity to different contexts [Mullan and Fawcett 2017]. Only through a scientific approach can animal welfare improvements be achieved in working horses [Arfuso et al. 2024]. Working animals are not simply tools, but active participants in human life. Their roles are shaped by where they live and work, as well as by the social and cultural settings they are part of. By paying attention to these everyday contexts, we can better understand how humans and animals work together in ways that are complex, situated, and deeply interconnected [Watson and Clancy 2025]. Further research is needed to understand these interrelationships and to improve the welfare of the horses on a global level [Peruchi et al. 2024].

This study brings together perspectives from zooanthropology, animal welfare science, law, and ethics to better understand how equine welfare can be improved within cultural contexts. It adopts a relational approach, recognising that human-horse interactions are not one-sided but dynamic processes in which both humans and horses actively influence each other [Marchesini 2010; Baragli et al. 2015]. In this view, horses are not passive recipients of human actions but co-agents whose behaviour and emotions shape these interactions [Marchesini 2010]. Understanding human-animal interactions therefore play a key role in developing effective strategies to improve the welfare of working equids [Spence et al. 2017].

The paper focuses on working horses in Ethiopia and Malta. Although horses in both contexts often perform similar roles, the factors affecting their welfare differ considerably. In Ethiopia, research highlights significant welfare challenges linked to limited resources and weak regulatory frameworks [Zekarias and Tesfaye 2019; Derbib et al. 2024], whereas in Malta there is a lack of scientific literature despite the presence of formal legislation. This comparison aims to explore how equine welfare is shaped

by geographical, cultural, and socio-economic conditions, as well as by human-horse interactions.

2. Equine Welfare and Human-Horse Interactions

Within the theoretical framework of zooanthropology and cultural dynamics, horses are understood as highly social and intelligent animals capable of learning, communication, and experiencing a wide range of emotions [McGreevy and McLean 2010; Proops et al. 2018]. Their responses to humans are not purely instinctive but develop through repeated interactions over time [Baragli et al. 2015]. As a result, everyday practices such as training, handling, and management have a direct and lasting impact on their welfare. When learning theory is poorly applied, for example through excessive punishment or forceful methods, horses are more likely to experience stress, fear, and behavioural problems [McGreevy and McLean 2010; Baragli et al. 2015].

Human-horse interactions have evolved alongside human needs, yet research in this area remains less developed than in other livestock systems [Luna and Tadich 2019]. Understanding the human factors that shape these interactions is essential for improving both the owner-horse relationship and the welfare of working equids [Luna and Tadich 2019]. In this context, anthrozoology has emerged as a key interdisciplinary field examining the two-way relationship between humans and animals and its impact on well-being [Rodriguez et al. 2018]. From a zooanthropological perspective, human-animal relationships are dynamic and reciprocal. Horses are not passive recipients of human actions but active participants whose behaviour and emotions influence interactions [Marchesini 2024]. This shifts the focus away from a purely human-centred view and supports a more relational understanding of welfare, where outcomes emerge from the interaction between humans, animals, and their environment.

Within this framework, human competence, attitudes, and knowledge play a central role in determining welfare outcomes. Education and training improve owners' ability to recognise signs of pain, stress, and positive well-being, leading to better management practices [Hockenhull and Creighton 2015; Proops et al. 2018; Hall-Bromley and Dixon 2025]. However, research has largely focused on identifying welfare problems, with less attention given to the psychological characteristics of owners and how these shape human-horse interactions [Luna and Tadich 2019]. Handling practices are particularly important: calm and consistent interactions can improve trust and reduce stress, whereas harsh handling can lead to fear and welfare problems [Luna and Tadich 2019; Fletcher et al. 2024]. In many cases, decisions about horse welfare continue to be influenced by economic pressures, cultural traditions, or personal beliefs rather than scientific evidence [Sossidou et al. 2024].

Beyond their biological characteristics, horses also function as cultural and socio-economic actors. In Ethiopia, they play a key role in supporting daily livelihoods, whereas in Malta they are more closely associated with cultural heritage and tourism [Douglas et al. 2022; Merridale-Punter et al. 2024a]. These contrasting contexts highlight how welfare is shaped not only by physical conditions but also by broader social and cultural factors.

From this perspective, traditions should not be seen as fixed but as evolving systems influenced by social, economic, and ethical change. Practices involving animals must therefore remain open to reflection, particularly where welfare concerns arise [Fraser 2008; Rollin 2006]. Zooanthropology supports this view by encouraging a holistic approach to welfare that considers both the animal and the quality of its relationship with humans. Horses require opportunities to move, explore, and interact socially; when these needs are not met, they may experience

stress or frustration [Mellor et al. 2020]. Recent developments, such as the Five Domains model, further emphasise the role of human-animal interactions in shaping welfare, recognising that how horses are handled and managed directly affects their subjective experience [Mellor et al. 2020]. Welfare should therefore be understood as something that emerges from ongoing interactions between animals, humans, and their environment.

Working horses are used for a range of activities, including agricultural work, transport, and tourism [FAO 2014; Edenburg 1999; Lizet 2020; Sossidou et al. 2024]. Although urbanisation has changed their management and environments, many traditional practices continue to influence how they are used. Traditions, public attitudes, and societal values play a key role in shaping these practices and related legislation [Harrison 1964; Sandøe et al. 2016; Buller and Roe 2018]. These perspectives can lead either to overprotection or to the instrumentalization of horses, where they are treated primarily as tools for economic or social purposes. Such tensions have contributed to restrictions on certain practices, sometimes resulting in unintended consequences such as neglect, long-distance transport, and illegal slaughter. For example, in parts of the European Union, limitations on horse slaughter have increased welfare risks through unregulated practices [WHW 2016], with similar concerns reported in horses transported from the United States to Canada [Roy et al. 2015].

Approaches such as “natural horsemanship” aim to improve human-horse communication, although their scientific consistency remains debated [Goodwin et al. 2009; McGreevy and McLean 2010]. At the same time, animal rights perspectives often call for stricter limitations or bans. These debates highlight the need to critically examine how cultural values interact with evidence-based welfare practices and to adopt a more integrated

and context-sensitive approach at both national and international levels.

3. Animal Welfare Indicators and Assessment

In the context of animal welfare indicators and assessment, equine welfare science brings together knowledge from different fields, including ethology, veterinary medicine, psychology, and cognitive science. To properly assess welfare, it is important to consider both the conditions animals are provided with, such as nutrition [Fig. 1], working environment [Fig. 2], housing conditions [Fig. 3], social contact, and management, and how the animals themselves respond. These responses can be observed through behavioural, physiological, and cognitive indicators, which give a more direct insight into the animal's actual experience [Fraser 2008; Mellor and Beausoleil 2020].



Fig. 1 Working horse feeding during break in Ethiopia. Photograph by Pantaleo Gemma.



Fig. 2 Urban carriage horse during break in historical location in Malta.
Photograph by Pantaleo Gemma



Fig. 3 Urban carriage horse resources-based assessment at the stable.
Photograph by Pantaleo Gemma.

The Animal Welfare Indicators (AWIN) project has made an important contribution by developing practical, science-based

protocols for assessing horse welfare, with a strong focus on observable, animal-based measures such as body condition, behaviour, and aspects of human-animal interaction [AWIN 2015]. However, while the AWIN protocol does include indicators related to human-horse interactions, these are often assessed in a structured and relatively limited way. From a broader perspective, particularly when viewed through zooanthropology, the relational dimension of welfare goes beyond what can easily be measured. Factors such as the quality of handling, subtle communication between horse and human, and even the emotional state of the handler can significantly influence welfare outcomes yet may not always be fully captured by standardised protocols.

Expanding welfare assessments to more fully consider these relational aspects would provide a richer and more practical understanding of equine welfare. This is especially important in contexts where human knowledge, skills, and behaviour play a central role in shaping the daily experiences of horses [Baragli et al. 2015; Hemsworth et al. 2015].

However, even though there is growing evidence that interactions between humans and horses directly affect the welfare of both, the human side of the relationship has received less attention. Factors such as owners' attitudes, traditions, income, beliefs, experience, and empathy all play an important role in shaping how they interact with their horses, and, in turn, the animals' welfare. To fully understand equine welfare, it's therefore important to consider not only how horses respond, but also the human factors that influence the quality of the relationship [Luna and Tadich 2019].

Working horses are an important but often overlooked group within animal welfare. Despite their value, they commonly face welfare problems, including heavy workloads, poor nutrition, and limited access to veterinary care [Burn et al. 2010]. Overloading is a widespread issue in sectors that rely on working

horses. This excessive burden can cause serious injuries, including sprains, back sores, wounds, and fractures, some of which may have long-term consequences. As a result, the animals' health and welfare are compromised, leading to reduced work capacity and negatively affecting the livelihoods of the people who depend on them [Bukhari and Parkes 2023].

A substantial body of research has examined the welfare of working equids, particularly in rural settings in African countries [Merridale-Punter et al. 2022], as well as in sport-related contexts, mainly within EU countries [Dalla Costa et al. 2017; Henry et al. 2017; Lesimple et al. 2020] but few studies covered the welfare assessment of urban carriage horses. Moreover, research on how housing affects horse welfare has increased significantly in recent years, with over half of the studies published within the last decade. While housing practices vary across countries, including US and Europe, the lack of studies from underrepresented regions, (including Ethiopia and Malta) limits our understanding of how different environments, climates, and management systems influence horse welfare [Robertson et al. 2024].

Welfare assessment frameworks typically distinguish between resource-based (input) indicators, such as housing, nutrition, and workload, and animal-based (output) indicators, including behavioural, physiological, and health-related measures [Pritchard et al. 2005; Mellor and Beausoleil 2020]. While resource-based measures identify potential risk factors, they do not necessarily reflect the animal's experience. In contrast, animal-based indicators provide direct insight into the animal's welfare, capturing responses such as lameness, body condition scores, injuries, and behavioural signs of stress or comfort. In equines, behavioural indicators, such as avoidance responses, posture, ear position, and reactions to handling, are particularly informative, while physiological measures (e.g., cortisol levels and heart rate variability) can complement these assessments [Burn

et al. 2010]. However, increasing attention is being paid to developing validated indicators of positive welfare, as current assessment tools remain largely focused on detecting negative states [Loftus et al. 2025].

More recent developments, such as the Five Domains model, further advance welfare assessment by explicitly incorporating animals' subjective experiences, including both negative and positive affective states such as pain, fear, comfort, and engagement [Mellor and Beausoleil 2020]. This represents a significant progression beyond the Five Freedoms, which, although used in the creation of many pieces of legislation worldwide, have been criticised for focusing primarily on the avoidance of suffering rather than the promotion of positive welfare [Mellor 2016].

A major challenge in equine welfare is accurately recognising pain, as horses may display subtle or suppressed behavioural signs due to their evolutionary role as prey animals. Indicators such as altered posture, reduced movement, changes in feeding behaviour, and facial expressions have been increasingly recognised as important tools for identifying discomfort (for example, Grimace scale and Qualitative Behaviour Assessment - QBA).

A key factor influencing welfare outcomes within this framework is human perception and knowledge of animal welfare. Evidence suggests that horse keepers, often also the animals' owners, may fail to recognise signs of pain, stress, and discomfort, leading to prolonged welfare issues [Wells et al. 2025]. In France, for example, horse owner education is mandatory through licensing [Hall-Bromley and Dixon 2025]. This highlights the importance of education, training, and awareness in improving welfare standards and human-horse interactions.

Over the past three decades, human-animal interactions (HAIs) have received increasing attention as an important component of animal welfare science [Luna and Tadich 2019]. Un-

derstanding these interactions is essential for improving the welfare of both animals and the humans who care for them [Wai-blinger et al. 2006]. Human behaviour, attitudes, and handling practices can significantly influence animals' stress responses, health, and overall welfare. However, while human-animal interactions have been studied in different livestock systems, little research has examined the human factors shaping owner-equine relationships and their implications for the welfare of working equids [Hemsworth et al. 2015; Lanas et al. 2018].

For this reason, integrating human-animal interactions into equine welfare assessment is necessary to improve past welfare assessments. Welfare cannot be fully understood without considering the human dimension, as the quality of human-horse relationships directly affects both physical condition and emotional well-being. Incorporating this relational perspective alongside contemporary animal welfare frameworks such as the Five Domains model enables a more holistic and robust approach to welfare assessment.

Welfare assessments in working equids are usually carried out using physical examinations and behavioural tests, rather than relying on existing databases or survey data [Hockenhull and Whay 2014]. Different protocols have been used to assess the welfare of working horses (Table 1). They have gradually evolved from broad concepts into practical field methods. The Five Freedoms Framework, developed by the Farm Animal Welfare Council, laid the foundation by identifying five basic needs, such as freedom from hunger, pain, and fear, but it is mainly used as a guiding principle rather than a hands-on assessment tool [Farm Animal Welfare Council 2009]. To build on this, the Five Domains Model by David Mellor takes a more complete approach by considering not only physical aspects like health and nutrition, but also the horse's mental state, helping assess how animals experience their conditions [Mellor 2017], but it is also not a

standardised tool to assess welfare, as there is not a list of specific indicators. More practical tools include the Animal Welfare Indicators protocol for horses, developed by Animal Welfare Indicators (AWIN), which uses clear, animal-based measures, such as body condition, injuries, and behaviour, to assess welfare in a structured and standardised way, although it is mostly used for managed horses rather than working equids [AWIN 2015]. For working horses in low- and middle-income countries, the Standardised Equine-Based Welfare Assessment Tool, created by The Brooke, is particularly important because it focuses on simple, observable indicators like wounds, lameness, and behaviour, making it practical for large-scale field use [Pritchard et al. 2018]. This has been further developed into Equid Assessment, Research and Scoping, also by The Brooke, which combines welfare data with information about management and owner practices using digital tools, giving a broader picture of the horse's situation [The Brooke 2020]. More recently, the shortened Welfare Assessment Tool developed by World Horse Welfare has aimed to make welfare assessment both reliable and easy to use in real-world conditions; it includes key indicators like wounds, lameness, behaviour, and body condition, and uses video-based training to help assessors score animals consistently across different countries and settings. Overall, these approaches show how welfare assessment has moved from simple guiding ideas to more practical, standardised tools that can be used effectively in the field.

Table 1 Protocols Used to Assess the Welfare of Working Horses

Protocol	Key Features	Measurements
SEBWAT (standardised Equine-Based Welfare Assessment Tool). The Brooke.	Large-scale field tool for working equids; focuses on observable indicators	Animal-based indicators
EARS (Equid Assessment, Research and Scoping). The Brooke	Digital data collection tool; integrates welfare, husbandry, and socio-economic data	Animal-based and resource-based and owner data
sWAT (shortened Welfare Assessment Tool). World Horse Welfare	Developed with communities; validated tool with video-based training; high inter-observer reliability for wounds; good usability across countries; modular digital training	Animal-based and training-based standardisation

4. Across Contexts: Ethiopia and Malta

In Ethiopia and Malta, horse welfare is shaped by contrasting socio-economic and cultural context. In Ethiopia, horse welfare is influenced by economic necessity and structural constraints. In this context, working equids are essential for transport, trade, and daily livelihoods, yet they often face significant welfare challenges, including long working hours, inadequate nutrition, lack of shade and poorly designed harnesses [Merridale-Punter et al. 2024a] [Fig. 4]. Equipment-related injuries are particularly common and have been linked to modifiable risk factors, indicating that relatively simple interventions, such as improved harness design and owner education, could substantially improve

welfare outcomes [Merridale-Punter et al. 2024b]. Importantly, these challenges are not primarily the result of deliberate neglect but are largely driven by broader socio-economic conditions, including poverty, limited access to veterinary services, and resource constraints. Consequently, effective welfare interventions must be context-specific, focusing on capacity-building, education, and practical, low-cost solutions that align with local realities.



Fig. 4 Working horses during break in Ethiopia: Low body condition score, long hooves, lack of shade, and poorly designed harness.

Photograph by Pantaleo Gemma.

In contrast, horse welfare in Malta is shaped by a different set of socio-economic and cultural dynamics. In Malta, horses are mainly used for racing, particularly at the Marsa Racecourse, which serves as the country's primary hub for racing. Moreover, during the summer months, when there is an increase in tourism and local festivities, traditional road races are also occasionally

organised on public streets, attracting both residents and visitors. Once horses are no longer fit for racing, their roles often change depending on their health and behaviour. Some are transitioned into urban carriage work, continuing to be active in a less demanding capacity, while others are retired and cared for by private owners or non-governmental organisations, where they may be used for light recreational or educational activities. Additionally, horses are exported abroad for alternative purposes after their racing careers have ended.

Carriage horses operate within a tourism-based system, where their use is closely linked to cultural heritage and tourism. As a result, their welfare is subject to greater regulatory oversight and increasing national and international public scrutiny, as Malta is a popular tourist destination that attracts many visitors, especially during the summer. Globally, concerns surrounding urban carriage horses include exposure to high temperatures, hard-working surfaces, traffic-related risks, and limited opportunities to express natural behaviours [Douglas et al. 2022]. Unlike in Ethiopia, where equine use is largely necessity-driven, the ethical debate in Malta centres on the legitimacy of using horses in non-essential activities, particularly considering increasing societal expectations regarding animal welfare. Conversely, urban carriage horses are frequently retired racehorses, and their use in this sector may offer a potential solution to the increasing number of unwanted and unsustainably managed horses.

As already mentioned, the comparison between Ethiopia and Malta is significant, as these contexts represent two contrasting models of human-equine relationships: one driven by economic necessity and livelihood dependence, and the other shaped by tourism, cultural heritage, and heightened public and Animal Rights' ethical scrutiny. From a zooanthropological perspective, these contrasting contexts demonstrate how human-equine relationships are shaped by socio-economic and cultural

traditions, which in turn influence welfare outcomes. Instead of seeing welfare challenges only as technical or resource issues, this perspective highlights the importance of relationships, such as dependency, responsibility, and how people perceive animals, in shaping how these constraints affect welfare.

5. Ethical Frameworks

From the perspective of ethical framework, the use of carriage horses in Malta and working horses in Ethiopia, requires considering different and sometimes contrasting moral perspectives that consider both human benefits and animal welfare. These animals occupy a complex position in society: they contribute to economic activities, cultural traditions, and daily livelihoods, yet their well-being depends entirely on human decisions. This imbalance creates a clear moral responsibility that cannot be fully addressed by relying on a single ethical approach. Instead, combining perspectives such as animal rights theory, utilitarianism, contractarianism, and respect-for-nature provides a more balanced and comprehensive way of understanding these issues, grounded in both ethical reasoning and animal welfare science [Sandøe and Christiansen 2008].

From an animal-rights perspective, animals possess intrinsic moral value and should not be treated solely to human ends. Regan [1983] argues that animals who are “subjects-of-a-life” have inherent worth and moral rights that constrain their use. In the context of working equines, this raises ethical concerns when horses and donkeys are treated primarily as instruments of economic productivity. Scientific evidence supports their moral factor, demonstrating that equines can experience pain, fear, stress, and positive affective states [Duncan and Fraser 1997]. Accordingly, welfare issues such as heat stress in carriage horses or injuries caused by poorly fitted harnesses can be interpreted not only as management failures but also as violations of fundamen-

tal moral interests. However, as noted by Sandøe et al. [2016], applying animal rights theory in practice must account for real-world constraints, particularly in contexts where human livelihoods depend on animal use.

Utilitarianism provides a complementary framework by evaluating actions according to their consequences, intending to maximise overall welfare and minimise suffering. Bentham's principle, later developed by Singer [1990], identifies the capacity to suffer as the basis for moral consideration. Within this framework, the use of working equines may be justified if the benefits to humans outweigh the harms experienced by animals. In Malta, carriage horses support tourism, cultural heritage and income, whereas in Ethiopia, equines are essential for transport and the primary household income. Empirical studies highlight the critical role of working equids in sustaining livelihoods, particularly in low-income contexts [Pritchard et al. 2005]. However, utilitarianism strongly condemns avoidable suffering. Welfare problems such as dehydration, excessive workloads, lameness, and lack of veterinary care reduce overall well-being and are often preventable through improved management. Animal welfare science supports the use of behavioural and physiological indicators to assess stress and pain [Broom 1998; Burn et al. 2010]. As Sandøe et al. [2016] emphasise, utilitarian approaches are particularly influential in animal welfare science because they provide a practical framework for evaluating trade-offs between human benefits and animal suffering.

Contractarianism approaches the issue differently by grounding moral obligations in social agreements among rational agents. Although animals are not direct participants in such agreements, contemporary interpretations recognise that societies can establish indirect duties toward animals based on shared values and ethical expectations. Public concern for animal welfare has increased significantly in recent decades, shaping both legisla-

tion and societal attitudes [Rollin 2000]. In Malta, where carriage horses are highly visible, public scrutiny can drive stricter welfare regulations. These protections arise not from recognising animal rights, but from collective human values of humane treatment. In Ethiopia, where economic necessity is a dominant factor, contractarian reasoning supports the development of locally appropriate welfare standards through education, community engagement, and veterinary support. As Sandøe and Christiansen [2008] note, such societal agreements play a central role in shaping how animals are treated in practice.

The respect-for-nature perspective broadens the ethical discussion by recognising that animals have value, and that human practices should consider their biological and behavioural needs. In animal welfare science, this is reflected in the idea that good welfare is not just about physical health, but also about psychological well-being, including the ability to express natural behaviours [Duncan and Fraser 1997].

Horses are naturally social animals who spend much of their day grazing and moving around. When they're unable to express these natural behaviours, their welfare can suffer. The way this happens can vary depending on the setting. In Malta, for example, horses working in urban areas may spend long hours on hard surfaces with little chance to graze or move freely. In Ethiopia, the challenges can look different, with horses often carrying heavy loads and working long hours that can push them beyond their physical limits.

Welfare assessments increasingly take these behavioural aspects into account, using indicators such as movement patterns, social interaction, and signs of stress to understand animals' experiences better [Burn et al. 2010]. From this perspective, ethical use of horses means creating management systems that allow them to behave more naturally, supporting both their

physical and mental well-being and encouraging a more balanced relationship between humans and animals.

Across these frameworks, a shared ethical principle emerges: suffering that can be prevented should not be accepted. Although each framework emphasises different dimensions, intrinsic value, consequences, social norms, or biological integrity, they converge in recognising the importance of safeguarding equine welfare. However, context plays a critical role in shaping how these principles are applied. In Malta, where equine use is linked to tourism, stronger regulatory oversight may be ethically justified. In Ethiopia, where equines are essential for livelihoods, welfare improvements must be balanced with socio-economic realities. Importantly, research demonstrates that practical interventions, such as improved harness design, adequate hydration, workload regulation, and access to veterinary care, can significantly enhance welfare without eliminating the economic role of working equids [Pritchard et al. 2005; Burn et al. 2010]. Effective animal ethics must bridge theory and practice by translating moral principles into feasible and context-sensitive welfare improvements [Sandøe et al. 2016].

Zoanthropology adds to these ethical perspectives by focusing less on abstract ideas about moral status and more on real, lived relationships between humans and animals. It highlights that ethical responsibility comes not only from principles or outcomes, but also from the quality of these relationships. In this way, it connects ethical theory with animal welfare science by grounding evaluation in everyday interactions and recognising welfare as something shaped through these relationships.

6. Legal Frameworks and Evidence-Based Policy

In relation to legal frameworks and evidence-based policy, the protection of working horse welfare is shaped by a combination of international guidelines, regional frameworks, and national

legislation shapes the protection of working horse welfare. At the global level, the World Organisation for Animal Health (WOAH) provides internationally recognised standards through its Terrestrial Animal Health Code, which outlines key welfare principles, including health, comfort, nutrition, safety, and the ability to express natural behaviours [WOAH 2019]. Although these standards aren't legally binding, they still play an important role in shaping national laws and policies. WOAH describes animal welfare as the state of an animal based on the conditions in which it lives and dies, highlighting that welfare is constantly changing and influenced by many interacting factors. It also makes a clear distinction between the animal's actual condition and the human actions that impact it [WOAH 2019].

Within the European Union, animal welfare is formally recognised under Article 13 of the Treaty on the Functioning of the European Union, which acknowledges animals as sentient beings and requires their welfare to be considered in policymaking [European Union 2012]. Council Directive 98/58/EC outlines general principles for assessing and ensuring the welfare of farmed animals, but it does not address the specific needs of equids kept for purposes other than farming [Sossidou et al. 2024].

- Regulation (EU) 2015/262, which sets rules for identifying horses (Equine Passport Regulation)
- Regulation (EC) No. 1/2005 on protecting animals during transport
- Directive 2009/156/EC on health requirements for moving and importing horses
- Directive 98/58/EC on the welfare of farm animals
- Regulation (EC) No. 1099/2009 on protecting animals at the time of killing (with possible stricter national rules)

In Malta, horse welfare is covered by the Animal Welfare Act [Chapter 439 of the Laws of Malta] and related regulations. Wor-

king horses (“karozzini”) and traditional road races, remain embedded in the island’s cultural heritage.

The Cultural Heritage Act [Chapter 445 of the Laws of Malta] provides a framework for safeguarding both tangible and intangible heritage, including traditions of historical or ethnographic value. However, the Act does not clearly define key concepts such as “culture” or “tradition,” creating interpretative gaps in its application. In practice, activities involving animals have largely been excluded from formal heritage protection, leaving equine-related traditions outside a regulatory framework that integrates welfare considerations [Colombo 2016]. At the international level, the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage recognises equestrian traditions as part of cultural heritage. However, Malta is not a signatory to this Convention and therefore relies solely on domestic legislation. This creates a regulatory gap in which equine traditions are neither formally recognised as heritage nor systematically assessed against welfare standards [Colombo 2016].

This gap highlights a fundamental tension: while equine traditions persist as culturally significant practices, they lack a comprehensive framework that integrates scientific welfare knowledge with heritage preservation. Their exclusion from heritage legislation represents a missed opportunity to guide their ethical adaptation in line with contemporary welfare standards [Colombo 2016].

In both Malta and Ethiopia, horses are not only economic resources but also part of wider social and cultural systems. In Ethiopia, equines are essential for everyday livelihoods, supporting transport and economic activities. In Malta, horses are more closely linked to tourism and cultural identity. However, as societies modernise, new expectations are emerging, including stronger regulation, greater use of scientific welfare assessment, and increased public scrutiny. One of the main risks in this context is

the development of opposed debates. On the one hand, traditions may be defended without much critical reflection in the name of cultural preservation. On the other hand, animal welfare standards, often influenced by Western ethical perspectives, may be applied without fully considering local social and economic realities. Rather than treating this as a simple conflict between heritage and welfare, the challenge is to find ways for traditional practices to adapt in a responsible and context-sensitive manner.

At the national level, Malta has developed a relatively comprehensive legal framework for animal welfare. The Veterinary Services Act (Chapter 437) regulates veterinary practice, animal health, disease control, and food safety, while also encouraging coordination between veterinary services and animal welfare authorities. The Animal Welfare Act (Chapter 439) provides the legal foundation for protecting animals from unnecessary suffering, recognising them as sentient beings and placing clear responsibilities on owners and caretakers. It covers areas such as housing, transport, animal use, and humane euthanasia, and includes enforcement mechanisms like inspections and penalties. More specific regulations also address the use of horses. The “Use of Karozzini Regulations” (2019) set rules to protect the welfare of horses used to pull traditional carriages (karozzini). These rules aim to prevent overworking and reduce stress, especially in hot conditions. First, there are time restrictions: urban carriage horses cannot operate during the hottest part of the day in summer (from 1 July to 31 August, between 13:00 and 16:00). This is to protect horses from heat stress. If someone breaks this rule, authorities can remove both the horse and the carriage. There are also limits on workload and use. A journey cannot last more than 45 minutes, and no more than five people (including the driver) are allowed on the carriage at one time. Horses must not work every day; they can only be used on alternate days and

no more than three days per week. This ensures they have enough time to rest and recover. When the carriage is not moving, horses must be kept in the shade and given fresh water, which is essential for their wellbeing, especially in hot weather. The law also allows the Director for Animal Welfare to issue additional guidelines, which are legally binding. Anyone who does not follow these rules can face penalties under the Animal Welfare Act. In contrast, in many low- and middle-income countries, including Ethiopia, legal protection for animal welfare has historically been limited. Only recently has the country taken steps toward formal regulation, with the introduction of a national framework through the Federal Democratic Republic of Ethiopia's Animal Welfare Proclamation (2023/2024), marking an important shift in recognising animals as sentient beings rather than simply property. In both contexts, effective policymaking requires an evidence-based approach that brings together scientific research, practical experience, and the perspectives of those involved. Such an approach helps ensure that welfare regulations are not only scientifically sound but also realistic and applicable in different settings. It is therefore essential for bridging the gap between ethical principles, legal frameworks, and everyday practices [Head 2008; Davies 2012].

Zooanthropology adds an important dimension to this discussion by shifting attention from abstract ideas about moral status to the lived reality of human-animal relationships. It highlights that ethical responsibility is not only about rules or outcomes, but also about the quality of the relationships people develop with animals. In this way, it connects ethical theory with animal welfare science, showing that welfare is something that emerges through ongoing interaction and is shaped by both human and animal behaviour.

7. Discussion

Horse welfare is shaped by complex interactions between economic conditions, cultural traditions, and societal expectations. As Douglas et al. [2022] argue, equestrian activities now operate not only within formal legal frameworks but also under a broader “social licence to operate,” whereby public acceptance depends on transparency, trust, and a demonstrable commitment to safeguarding animal welfare. This is particularly evident in Malta, where horses are highly visible in tourism and heritage practices, and where public scrutiny can directly influence policy and regulation.

In contrast, the Ethiopian context illustrates that welfare challenges are shaped less by deliberate neglect and more by structural factors such as poverty, limited resources, and restricted access to veterinary care. This underscores the need for context-sensitive interventions that prioritise education, access to resources, and practical improvements, rather than simplistic judgment, criticism and abolition theories. Across both contexts, a common idea emerges: traditions involving horses are only ethically acceptable when they evolve in line with scientific knowledge, changing societal values, and a better understanding of horses as sentient beings with physical, emotional, and behavioural needs.

Evidence from equestrian practices further indicates that welfare concerns, such as injury, stress, and inappropriate handling, are often inherent risks within human-equine activities, particularly when economic or competitive pressures shape decision-making. This reinforces the importance of integrating animal welfare science into ethical evaluation, including the use of behavioural and physiological indicators to assess stress and well-being [Broom 1998; Burn et al. 2010]. Moreover, shifting societal attitudes toward animal welfare are increasingly challenging traditional practices, especially where equine use is closely

linked to cultural heritage and identity. Research on equestrian sports and heritage contexts demonstrates that tensions frequently arise between preserving tradition and meeting evolving ethical standards for animal treatment [Monterrubbio et al. 2024]. These dynamics directly influence the “social licence to operate,” whereby continued acceptance depends on societal approval and perceived ethical legitimacy [Douglas et al. 2022].

Consequently, integrating ethical frameworks, such as animal rights, utilitarianism, and broader socio-cultural perspectives, enables a more balanced and context-sensitive evaluation of equine use. This integrated approach is essential to ensure that the benefits derived from working equines are not achieved at the expense of their health and welfare.

A key issue in this discussion is human competence, empathy, attitude and perception related to animal welfare. Animal owners and caretakers are responsible for the wellbeing of sentient beings that cannot verbally express their needs or suffering. This creates both a moral and practical responsibility to recognise and respond appropriately to signs of distress. As Faver and Strand [2008] highlight, empathy plays an essential role in helping caregivers understand and meet animals’ physical and psychological needs. However, in real-life situations, adopting an empathic approach is not always straightforward and requires an interdisciplinary collaboration. While it can help individuals notice signs of discomfort, such as thirst, fatigue, or the need for shelter, especially in conditions like heat stress in horses, it becomes far more challenging when people themselves are struggling with severe poverty. In such circumstances, human survival and basic needs may take priority, making it difficult to extend empathy toward animals despite good intentions.

Animal cruelty is often connected to deeper psychological issues. Its inclusion in earlier editions of the Diagnostic and Statistical Manual of Mental Disorders [American Psychiatric Associa-

tion 1994] shows that it has been recognised as a possible sign of underlying behavioural or emotional problems. At the same time, animals can have a very positive impact on people's lives. Research by Cohen [2002] and Siegel [1993] shows that relationships with animals can provide companionship, emotional comfort, and important psychological support.

Empathy is also not something people either have or do not have, it can be learned and strengthened over time [Corey 2001]. This means that training programmes for owners and keeper, as mentioned previously for example France made mandatory in 2022, could play an important role by including education on animal welfare, behaviour, and empathy. Such training could help improve not only the lives of animals but also the quality of human-animal relationships.

At the same time, it is important to recognise that animal welfare problems are often linked to situations of neglect or abuse, which are influenced by a person's wider circumstances. This is why a One Welfare approach is so important. It encourages us to see the connection between animal welfare, human wellbeing, and the environment. From this perspective, animal welfare assessors should not only focus on the condition of the animal but also try to understand the situation of the person responsible for it. This more holistic and compassionate approach can lead to better and more realistic outcomes for both animals and people.

Ethical frameworks offer valuable tools for analysing these issues, but they also reveal inherent tensions between competing perspectives. The growing importance of public perception further complicates the debate, as practices must align not only with legal requirements but also with evolving societal expectations.

In this context, evidence-based policymaking has emerged as a key principle for improving policy design, implementation, and evaluation. In sectors such as education and policy, deci-

sion-making increasingly relies on empirical research, systematic evaluation, and transparent processes. These approaches demonstrate how structured data collection, impact assessment, and continuous monitoring can enhance both effectiveness and accountability.

However, the integration of evidence-based approaches into animal welfare legislation remains relatively limited at both national and international levels [Korte et al. 2007]. Historically, such legislation has often been shaped by ethical reasoning, cultural traditions, public opinion, or industry influence, rather than by systematic scientific evidence on animal behaviour, welfare needs, and policy outcomes [Brambell 1965]. While ethical considerations remain essential, reliance solely on normative or politically negotiated frameworks may limit the effectiveness of legislation in addressing root causes or achieving measurable improvements.

The concept of “evidence” in policymaking is itself complex. Hall et al. [2008] advocate for legislation grounded in robust scientific knowledge, while Solesbury [2001] emphasises that evidence also includes professional expertise, lived experience, and societal values. Similarly, Davies [2012] highlights that policy decisions are influenced not only by empirical data but also by ideology, institutional constraints, media narratives, and resource availability. Evidence-based policymaking should therefore be understood as a negotiated process embedded within broader social and political contexts.

Head [2008] proposes a framework integrating three key elements: scientific research, professional and practical knowledge, and stakeholder values. This model is particularly relevant in the field of animal welfare, where scientific understanding must be balanced with economic realities, cultural traditions, and ethical considerations.

A crucial but often overlooked factor is socio-economic capacity. Animal welfare legislation reflects the economic resources, institutional structures, and governance capacity of a society. Countries with stronger economies and well-developed regulatory systems are better equipped to implement and enforce welfare standards, support veterinary services, and ensure compliance. In contrast, in lower-resource settings, legislation may prioritise immediate human needs, and implementation may be limited by insufficient funding, lack of training, or restricted access to veterinary care.

Integrating evidence-based policymaking into animal welfare legislation offers significant potential for improvement. Scientific research on animal behaviour, stress indicators, and welfare outcomes can inform more objective and measurable standards. However, as Head [2008] emphasises, such evidence must be combined with contextual understanding and stakeholder engagement to ensure that policies are both practical and legitimate.

An effective approach to animal welfare legislation should therefore be grounded in scientific evidence, responsive to socio-economic realities, inclusive of stakeholder perspectives, supported by clear enforcement mechanisms, and adaptable over time. Recognising that law reflects broader social and economic conditions allows for more realistic and context-sensitive reform strategies. Rather than imposing uniform standards detached from local realities, policymakers should aim for progressive improvement, strengthening welfare protections while acknowledging practical constraints.

Ultimately, advancing animal welfare requires not only stronger scientific foundations but also institutional capacity, adequate resources, and sustained political commitment. When integrated with social and economic realities, evidence-based approaches provide a pathway toward more effective, accountable, and ethically grounded welfare governance.

From a zooanthropological standpoint, these findings reinforce that welfare cannot be reduced to biological parameters or environmental conditions alone. Rather, it should be understood as an emergent property of relational systems, shaped through ongoing interactions between humans and animals. This interpretation is consistent with Marchesini's [2010] view of interspecific relationships as co-constructed systems in which meaning, behaviour, and welfare emerge through interaction rather than being solely determined by human control.

This perspective provides a critical bridge among scientific assessment, ethical reasoning, and sociocultural analysis, reinforcing the need for integrated, context-sensitive approaches to equine welfare.

8. Conclusions and Future Research

In conclusion, horse welfare is influenced by a combination of ethical perspectives, legal framework, scientific knowledge, and human-animal interactions. Horses hold a unique and varied place in society, connected not just to work but also to culture and identity. Comparing Ethiopia and Malta shows that, although the geographical and economical situations are very different, many of the same underlying factors influence welfare, especially human behaviour, economic pressures, and cultural attitudes. Ethiopia and Malta represent two interesting examples to compare to other African countries and European Member States, where legislation has been created to improve the welfare of working horses. More research is needed when it comes to understanding the level of positive welfare of working horses around the world. Much of the current focus is still on preventing harm, but there is growing recognition that welfare should also include positive experiences and a good quality of life. This means developing better ways to measure things like emotional states, behaviour, and how horses experience their environment,

as well as looking more closely at human perceptions, attitudes and how human-animal relationships affect welfare.

There is also a clear need for more practical, context-specific tools. In the case of Malta, future research could focus on developing a welfare assessment protocol tailored to working horses. Such a framework should combine established scientific models with local conditions, such as working conditions, management practices, and the skills of those handling the horses. This would make welfare assessment more relevant, consistent, and useful for both policy and everyday practice. At the same time, the future of horse-related traditions depends on their ability to change. Traditions are not fixed; they evolve. By combining scientific knowledge, evidence-based legislation, appropriate infrastructures and better education for horse owners, it is possible to improve welfare without losing cultural value. Rather than seeing tradition and welfare as being in conflict, they should be viewed as something that can develop together improving the sustainability of the industry. Ultimately, improving the welfare of working horses requires a balanced and realistic approach, one that respects their cultural importance but also recognises them as sentient beings. Zooanthropology offers a helpful way of thinking about this, by focusing on relationships and the everyday interactions between humans and animals. The goal is not to remove traditional practices, but to reshape them so they are more responsible, ethical, and acceptable in modern society. In this way, cultural heritage and animal welfare do not have to compete but can move forward together in a more sustainable way.

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The Shiny Black Pearl of Apulia. Celebrating the Murgesse Horse Centenary with a Glance at the Future

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Abstract

With their lustrous black or blue roan coats, robust yet elegant conformation, and calm, attentive temperament, Murgesse Horses have long been central to the agricultural and military history of Southern Italy. Likely descending from a complex interweaving of indigenous horses, Norman stock, and Iberian bloodlines introduced during Spanish rule, the breed developed as a versatile working horse capable of thriving where others could not. For centuries, it served shepherds, farmers, and soldiers, carrying out laborious tasks across rocky paths and open pastures, and supplying mounts for cavalry and royal stables. Their sobriety and endurance made these native Apulian horses particularly suited to the ecological and economic realities of the Murgia, where adaptability was a matter of survival. Today, the Murgesse remains especially versatile, employed in multiple sport disciplines, driving, equine therapy, parades, and as the official horse of the Italian mounted police corps (Polizia and Carabinieri). In 2025, the Italian National Association of Breeders of the Horse of the Murge and the Martina Franca Donkey (ANAMF) celebrated the breed's centenary, marking a pivotal moment to reflect on its trajectory and future. While the population has rebounded to approximately 8,000 animals, studies reveal a significant genetic bottleneck, underscoring the urgency of diversifying bloodlines through scientifically informed breeding strategies. Equally pressing is the modernization of edu-

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cational practices: moving beyond dominance-based models toward consent-based, ethologically sound approaches that respect equine cognition and welfare. Stallion management, still rooted in isolation and outdated stereotypes, requires a cultural shift toward socialization and species-specific care. As global interest grows, spurred by imports to countries such as the United States, the challenge is to balance tradition with innovation. Preserving genetic integrity, promoting welfare-centered education, and fostering interdisciplinary collaborations among breeders, veterinarians, and equine scientists will be essential to safeguard this living heritage. The future of the “Shiny Black Pearl of Apulia” depends on a shared commitment to sustainability, ethics, and interspecies understanding.

Keywords

Murgese horse; Apulia, Italy; equine breed conservation; equine genetics; genetic bottleneck; stallion management and welfare; consent-based horsemanship; equitation science; human-animal studies; equestrian heritage.

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Murgese Horse to the spectacular stallion Ferrari (1992-2019), so I also owe gratitude to Mr. Francesco (Franco) Calisi for the updated information on Ferrari and on “Il Nero Luminoso.” Despite all the gracious help received, I am solely accountable for the ideas expressed in this article, especially the potentially controversial parts. Should there be any inaccuracies in my text, these are uniquely my responsibility. My most special thanks are all for Jimmy (Brown Almighty, 2010), OTTB, without whom none of this work would have existed.



Fig. 1 The spectacular Blue Roan (testa di moro) stallion Pericle (2019, Ercole di Giannini x Magnolia), Granduca da Martina lineage, bred by Filippo Disanto and owned by Antonella Fusillo, Masseria Croce Grande. Photocredit: Giulia Basaglia Photography, kindly made available by Antonella Fusillo.

1. Introduction

The limestone plateau of the Murgia, stretching across central Apulia between Bari and Matera, is a landscape of austere beauty and elemental force. Wind-scoured hills, sparse oak groves, sinkholes, lush olive trees, and dry-stone walls define this stark yet striking territory. To add to the sheer beauty, from some hilltops you can see the Adriatic Sea and its gorgeous coastline. The Murgia is a land that resists ease: its soil is thin and stony, marked by long stretches of drought, its climate can be cold for Mediterranean averages, and scorching hot in summer. It is within this demanding environment that one of Italy's most distinctive equine breeds took shape. Emerging from this rugged terrain, the horse of the Murgia hills, the "Shiny Black Pearl of Apulia," embodies the physical and symbolic qualities of the land and its local people alike—strength, frugality, resilience, to which these horses add an unmistakable baroque elegance. Very versatile and docile, the Horse of the Murge is employed for anything one could think of: dressage, trail riding, equine therapy and assisted education, mounted police, driving, light jumping and cross-country, parades, best friend, etc. There is a strict color requirement, though, as these horses' coats must be entirely black or blue roan ("grigio ferro testa di moro") with no stars, blaze or socks, and their hooves must be entirely black too, perhaps a remnant of an old myth according to which dark hooves are stronger. This same land, renowned for the summer opera festival of the Valle d'Itria, has also produced the tallest Italian donkey, the Asino di Martina Franca, who towers over all other donkeys at over 160 cm (as in the case of the donkey called Vescovo), along with the Martina Franca Mule, a crossing between a donkey stallion (a Jack) and a Murgesse dam, a precious resource for the Alpine corps until 1993. This powerful mule is still employed in the German army, in the Gebirgsjägerbrigade 23 (Mountain Infantry Brigade 23), which deployed them in Kosovo and Af-

ghanistan, and requests for more mules are also coming from France and Spain [ANAMF, 2023, “Comunicato Mulo e Bardotto”]. It should not be forgotten that this area, although more rarely, also produces the Bardotto delle Murge (Hinny of the Murge), the hybrid sired from a Murgese Horse and a Martina Franca female donkey (a jenny). The hybrids have been included in the ANAMF since 2023 [ibid]. In 2025 the Italian National Association of the Breeders of the Horse of the Murge (Cavallo delle Murge) and of the Martina Franca Donkey (Asino di Martina Franca) (ANAMF, Associazione Nazionale Allevatori del Cavallo delle Murge e dell’Asino di Martina Franca) celebrated the 100th anniversary of the official creation of this breed, whose establishment began conceptually with the Royal Decree n. 1734 of September 1925 dedicated to fostering the breeding of equines (horses, donkeys and mules) in Italy, while the intentional breeding started officially in 1926.

Although I now live at 2000 m on the high plains of Colorado, the ancestral homeland of the Ute tribes, I grew up at sea level, on the temperate Adriatic coast of Apulia, in Bari. From an early age, however, it was the rougher Murgia hills and the surrounding countryside traced by perfectly irregular dry-stone walls, that truly shaped me through countless happy hours spent with horses. After staring ecstatically at pictures of horses in our small apartment in the city, I finally met my first horse as a small child of 4 or 5 at the Masseria Disanto in the Santeramo in Colle countryside, and I never forgot that moment. Despite the cold temperatures and the snowy days these hills could produce, conditions one may consider unimaginable according to Mediterranean stereotypes, scarcely imaginable even for my urban friends—I delighted in frolicking up and down those rocky slopes, kindly carried by a borrowed horse, having convinced my city parents that this was something I just had to do. Tragically, I did not “own” a horse at the time, even though I vividly remember

the many inexpensive horses brought into our port from Eastern Europe to be slaughtered and sold as meat, which is still considered a delicacy by many locals (a practice that has only slightly declined in recent times, Colonna 2018). Since most of them were perfectly good horses whose only fault was to be born under an unlucky star, you could buy them for just the price of their weight, train them yourself, and... disappear into the sunset. Although even the rescue of a poor “meat horse” was financially completely unreachable to me, I delighted in spending as much time as possible in the company of equines. Apulia offered a remarkably diverse range of possibilities, from these so-called “meat horses” to very expensive competitive jumpers, Italian, French, Dutch, or German breeds, passing through fancy, spirited Arabs, and expensive Quarter Horses. Yet, if you had a touch of horse sense, a sprinkle of self-preservation instinct, and an appreciation for an excellent price/quality ratio, you would go and get yourself an affordable, sturdy, reliable, versatile, frugal, low-maintenance, and generally healthy horse: you’d buy yourself a Murgese. Who would have thought that these precious and patient allies of our ancestors were once at risk of being lost forever? After a period of decline in the 20th century, the world wars, mechanization and changing agricultural practices brought many traditional breeds to the brink of extinction, so much that the Murgese was defined *il più bel cavallo del mondo che nessuno vuole* (“the most beautiful horse in the world that nobody wants,” Buonavolontà, 1986). Since the 1990s, the Murgese has experienced a significant revival. The idea of breeding them intentionally started in 1925, while the formal registration and selective breeding of the modern Murgese began officially in 1926 at the Regio Deposito Stalloni, the Royal Stud in Foggia, in the Northern part of Apulia, which was later reorganized and renamed the Istituto di Incremento Ippico per la Puglia. Today, renewed interest in native breeds, sustainable livestock practices,

and equestrian traditions have restored the Murgese to prominence in Italy with a steadily growing interest coming from international markets. No longer valued solely for its utility, the Murgese is increasingly recognized as a cultural heritage animal, a genetic reservoir, and a symbol of regional identity.



Fig. 2 Two Carabinieri riding Murgese Horses at the 70th Mostra Mercato and 100th year anniversary celebration of the Murgese Horse in Martina Franca (Taranto), Italy, December 2025. Photocredit: Livia Giannoli. Picture kindly made available by ANAMF.

What could be done to preserve and enhance this breed without betraying its heritage, and without selling it out to a growing international market?

This article traces the historical development of the Murgese horse from its environmental and political origins to its contemporary resurgence, examining how this once-marginal breed has become an emblem of Apulia's past, and how it could become an even better resource and ally, in an interspecies future.

2. Origins

In 2025, the National Association of Breeders of the Horse of the Murge and the Martina Franca Donkey (ANAMF, Associazione Nazionale Allevatori del Cavallo delle Murge e dell'Asino di Martina Franca) celebrated the centenary of the Horse of the Murge. They held a conference at the Fieracavalli in Verona, and the occasion was also celebrated at the 70th edition of the Mostra Mercato in Martina Franca, beautiful baroque town in the Val d'Itria, in the province of Taranto, Apulia. During the conference, Francesco (Franco) Calisi, founder of the Accademia di Arte Equestre Luminoso, and a lifelong advocate for the breed, spoke of the Murgese as a horse who perhaps “may not be seen as a sport horse at the highest levels” but is for sure a kind of horse that occupies a very important slice of the market: “the horse for everyone” [Calisi 2025]. There is a lot of truth and wisdom in these words, even if the Murgese, in the right hands, has been perfectly able to excel at the highest levels of dressage, as it happened with the stallion Carletto (born in 2009, Otello di San Paolo x Everest, 164 cm tall), trained by the Dutch-Italian equine behaviorist Jolanda Adelaar, who is a FEI Grand Prix dressage and international Master WE4 Working Equitation horse [Adelaar 2021]. However, it is certainly true that the majority of equestrians do not compete at the highest levels, or, even better, do not compete at all and enjoy their relationship with their horses without anthropocentric vanity. In truth, the Murgese is an extremely versatile breed, perfect for amateurs and competitors alike. But how did the breed get to be so docile and adaptable? What is their story?

There are various hypotheses about the origin of the Murgese Horse [Bigi 2022]. Some sources trace their origin to Frederick II Hohenstaufen (Federico II di Svevia, 1194-1250), the Holy Roman Emperor who enjoyed spending a lot of his time in Apulia and left the region with a rich cultural and architectural legacy.

Frederick's veterinarian and farrier, Jordanus Ruffus of Calabria (Giordano Ruffo) did leave us also one the world's oldest known texts on veterinary medicine, *De Medicina Equorum*, written in the mid-13th century. Other sources mention the important role played by the Republic of Venice around the late 1400s and early 1500s, when the Republic selected the Murgia region as the site of its most important horse-breeding establishment, centered around the masseria La Cavallerizza, near Alberobello. This masseria still exists today, and Alberobello has been a UNESCO site since 1996. Another hypothesis places the origins of the Murgese in the 16th century, under Spanish rule, in the breeding efforts brought forth by the Acquaviva-d'Aragona family, counts of Conversano [ANAMF website]. The horses of the counts of Conversano constituted the Apulian variation of the Neapolitan Courser (Corsiero Napoletano or Napolitano), considered one of the best for military uses between the 1400s and the 1700s, and possibly a descendant of war horses employed in the Roman Empire [Fraddosio]. Between the late Middle Ages and the early modern period, the term courser (corsiero or corsiere) referred to the warhorse par excellence. Its defining characteristic was a fast, sustained gait—the corso, or gallop—which clearly distinguished it from the portante, typically an ambling (gaited) horse used primarily for long, comfortable journeys. The term courser therefore did not denote a breed in the modern sense, but rather a function defined by military use. The adjective Neapolitan (Napolitano) indicated its geographic origin, understood in a broad sense and not restricted to the city of Naples or its immediate surroundings, because, until 1861, the Kingdom of Naples encompassed vast areas of central and Southern Italy, including the present-day regions of Abruzzo, Molise, Apulia, Campania, Basilicata, and Calabria. Neapolitan Courser thus refers to a historical horse type bred primarily for warfare throughout the Kingdom of Na-

ples and exported from there, also as an improving stock, to the rest of Italy and to various parts of Europe [Fraddosio].



Fig. 3 Libro de maschancia, 16th century manuscript derivative of Giordano Ruffo's *De Medicina Equorum*, in Southern Italian vernacular, focused on farriery.

As early as the second half of the nineteenth century, the existence in the Murgia region of a native horse population displaying consistent and recognizable physical traits had already been noted. This observation was made by Giuseppe Carelli, chief veterinarian of the Third Army Corps attached to the Cavalry Brigade Command. In his study, “Razze equine. Considerazioni ippologiche sulla possibile riproduzione del cavallo nostrano” [Carelli 1872], Carelli offered a detailed account of the so-called “Neapolitan horse.” Referring to the provinces of Bari and Lecce, Carelli reported that in several rural districts horses of local origin were still being bred on private farms. These animals were traditionally believed to descend from the stock once raised by the counts of Conversano and were characterized by a black coat, strong limbs, a docile temperament, and notable enduran-

ce in work. Carelli's remarks were later echoed and expanded upon by a veterinary officer, in his *Trattato di Ippologia* (1901). Chiari observed that although horse breeding in the province of Bari had declined compared to earlier periods, it remained of reasonable quality. The broodmares, he noted, "were generally of medium height but solidly built, energetic, and well proportioned." Most were either indigenous or the result of crosses between local mares and government-owned stallions. Chiari further commented on the situation in the province of Lecce, at the time encompassing the territories of today's provinces of Taranto and Brindisi, where equine breeding was less widespread than in neighboring areas. The native mares of this region, he explained, were of moderate stature (approximately 1.48-1.52 meters at the withers) and exhibited a slightly convex profile (montonino or "Roman nose"), a relatively short yet muscular neck, a sloping croup, and long limbs with well-developed joints. From a breeding standpoint, Chiari suggested that "African Oriental stallions" would have been the most suitable match for these mares; in practice, however, breeders tended to favor half-bred English horses and Hackneys (Carelli and Chiari are both cited in Fraddosio, from whom I have been borrowing extensively).

The unification of most of Italy under the House of Savoy in 1861 unfortunately triggered a widespread disruption of the country's rich equestrian traditions, particularly in the Southern regions. A striking example is the Persano breed, which experienced severe depletion as numerous broodmares were transferred to other studs, notably the Savoy-controlled facility at San Rossore near Pisa, leading ultimately to its official extinction by ministerial decree in 1874 [ANAMF]. It was not until several decades later, after the establishment of the Royal Stud at Santa Maria Capua Vetere near Caserta in 1862, that the horse breeds of Southern Italy began to recover recognition at the national level.

In the Murgia region, spanning from the late 1800s into the early 1900s, local breeders dedicated themselves to enhancing the uniformity of their horses, focusing on both structural conformation and practical capabilities. Their breeding efforts prioritized hardiness and adaptability, aiming to produce animals capable of thriving in the challenging and frugal environmental conditions of the region, thereby fostering a more stable and resilient equine population [ANAMF, and Bigi 2022].

This beautiful yet not always so generous area also produced the Martina Franca Donkey (Asino di Martina Franca), the Martina Franca Mule (Mulo Martinese), and more rarely, an autochthonous hinny. The Martina Franca donkey is a mesomorphic breed distinguished by well-balanced and proportionate conformation. It is notably tall, exceptionally strong, and displays a sound, responsive temperament. Its coat is a dark bay with dark gray coloring on the muzzle, chest, belly, and inner thighs. A characteristic reddish marking, known as focatura, appears around the eye sockets and along the upper part of the muzzle, extending for several centimeters [Silvestre 1998]. Local tradition maintains that the Martina Franca breed originated from a combination of native donkeys and Catalan animals brought to Apulia during the period of Spanish rule. Some accounts claim that Catalan donkeys—along with a carefully selected group of Merino sheep—were imported at the behest of a Spanish queen for her Apulian estates, which extended across the areas around Mottola, Ginosa, and nearby territories [ibid]. Other narratives attribute the arrival of approximately fifteen Spanish donkeys to members of the Caracciolo family, dukes of Martina Franca, or to the Acquaviva family, counts of Conversano, who are said to have introduced these animals into their renowned and prestigious breeding operations with the aim of improving the local stock [ibid]. The main lineages of the Martina Franca Donkey go back to 3 main jack studs: Marco da Martina (born in 1924 by

Galeone), Bello (1928 by Tommaso) and Colosseo (1928 by Peppino), [ibid]. These remarkably strong and tall jack donkeys, crossed with Murgesse Horse mares, produced the Mulo Martinese, another successful breed with a long history of hard work performed in rough conditions, especially wars [Chiari et al. 2007]. The Bardotto delle Murge (hinny) is a rarer hybrid, sometimes mentioned along with the mule, but there do not seem to be specific studies or reports on the hinny.

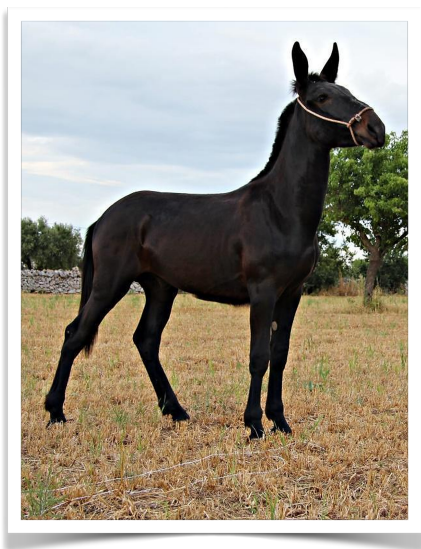


Fig. 4 The stunning Tonino, john mule born in 2023 by Coccobello out of Pandora, the first Mulo Martinese born at the Masseria Galeone, headquarters of the “Centro di Selezione Equestre dei Carabinieri del Raggruppamento Biodiversità di Martina Franca.” Tonino is currently about 175 cm tall at 3 years of age. Photo made available by ANAMF and the “Centro di Selezione Equestre” at the Masseria Galeone.



Fig. 5 Baby Tonino and the Maresciallo Capo of the Carabinieri Corps, Eugenio Netti, 2023. Photo kindly made available by ANAMF and “Centro di Selezione Equestre” at the Masseria Galeone.

Fast forward to April 30, 1925: Italy is under Fascist rule and the government is thinking about reorganizing agriculture and farm animal breeds. According to documents by the Consorzio per il Deposito Cavalli Stalloni di Foggia cited by Fraddosio, local breeders convened to discuss the improvement of the Martina Franca Donkey. During that meeting, Michele De Mauro, an insightful veterinarian at the Foggia Royal Stud, drew attention to the fact that breeders in the Murgia consistently favored equines with “dark coats.” He then pointed out that within the same geographical area he could distinguish what he described as a well-defined horse type: “a mesomorphic animal with broad transverse proportions, a solid black coat (morello, morello zaino), good overall size, and a strong bloodline.” The stability and uniformity of these characteristics, De Mauro argued, were such that this horse deserved to be identified as a distinct type, which, as he wrote later on, he proposed to call the Horse of the Murge (“Cavallo delle Murge,” [De Mauro 1928]). De Mauro further ob-

served that local breeders held this horse in particularly high regard and made extensive use of it for public breeding services, a sign of its recognized value within the regional economy. The veterinarian, hence, urged those in attendance to actively promote this exceptional animal as a key resource for improving local horse production. He also encouraged the dissemination of the news that the director of the Foggia Royal Stud, in agreement with the governing board of the Consortium, was willing to incorporate Murgese horses into the Stud's breeding program. De Mauro's appeal soon translated into concrete action. Between 1926 and 1927, a committee hand-picked the first group of mares born in the Murgia region, along with two stallions. One of these, the black-coated Nerone, born in 1924, would go on to become the principal foundation sire of what would later be recognized as the Murgese Horse breed. Just 3 years after the gathering of the Martina Franca Donkey breeders, De Mauro published an article profiling the Murgese horse [De Mauro 1928]. According to the various researches he mentions (but does not cite), the Murgese breed should go back to the Count of Conversano and his gorgeous gray and black Arab horses, which got mixed in with the local horses, which De Mauro defines "of African type." Hence, he states that the Murgese itself presents two main types, an "Arab" and an "African" type. The Arab type, writes De Mauro:

Rarely reaches a height of 1.48 meters; it has a broad head and large eyes. The nasal profile, however, is often convex—resembling that of African horses—with narrow nostrils. The neck is pyramidal in shape, broad and elegant, with an arched upper line. The shoulder is long and sloping, the withers high, and the topline—like that of the Arabian—is slightly concave. The loins are short, powerful, and well connected, while the croup is rounded, wide, and richly developed with strong muscle masses.



Fig. 6 Tonino showing his versatility and stature being driven between two Murgese Horses. Photo kindly made available by ANAMF and “Centro di Selezione Equestre” at the Masseria Galeone.

De Mauro’s own description reveals an interesting contradiction: the “Arab type” he describes was missing one of the most representative features of Arab horses, which is the concave face (sometimes called “dished face”), but it already had the typical Murgese convex profile (the Roman nose, “montonino” in Italian, typical of “Baroque breeds”). The African type, instead:

Is taller and narrower than the previous type and has a large head with full cheeks and a curved profile. The eye is small, and the neck is set horizontally and often short. The transverse dimensions are more reduced, and the back-loin line is straight. The loins are rather long, and the croup is elongated, with prominent hip

bones and often sloping. The limbs are long, with broad and solid joints; the forearm is well muscled, the cannon bone long, and the feet broader, with strong, durable hooves.²

De Mauro advocated to improve the Murgese, which tended to look more like the “African type,” only with stallions within the breed, stopping any addition of external blood; however, in his opinion the selected stallions had to be closer to the “Arab type,” if the aim was to improve and refine the breed. De Mauro intelligently also paid attention to the management of these horses: he describes how the mares were kept *allo stato brado* (free-roaming and semi-feral) year-long in the oak woods around Martina Franca, Noci and Mottola, “sometimes surviving only on oak branches.” I hope this statement was not entirely accurate, since excessive quantities of oak leaves and acorns, especially in spring, can be toxic to horses, whether the oak in question might be the “roverella” (*Quercus pubescens* Willd), the “fragno” (*Quercus Trojana* Webb), or the “leccio” (*Quercus Ilex*), all common in that area. More likely, the mares had been kept in symbiosis with the local woods and pastures, clearing up the shrubs that could have caused fires in summer, and probably had to be thrown some forage in winter, if not hay at least roughage, since even the most easy-keepers require a minimum of 1% of their ideal body weight in forage per day. As our otherwise astute veterinarian did not fail to notice, these horses have been traditionally employed for all sorts of jobs, including the *tiro pesante lento* (slow-moving heavy draft). Stallions from the Count of Conversano, De Mauro continues, went to the Duke of Sangro and bred in various farms (*masserie* or *tenute*), all in the area of Mottola. In Gioia del Colle, explains De Mauro, Mr. Cassano too introduced stallions descendants from the Count, who were

² All translations are mine.

breeding at the Tenuta Chiancharello, between Martina Franca and Mottola. From there, they spread to the breeding facilities belonging to the Martucci brothers in Martina Franca, to Mr. Giuseppe Perrini in Alberobello, and to Mr. Stefano Carbotti of the Tenuta Torre Abbondanza in Noci. Nerone (1924-1946), selected by an ad hoc committee, became one of the renowned founders of the breed, mostly bred in Martina Franca and in Foggia; the price for his breeding was a whopping 100 lire, when breeding other famous stallions cost less than half of that, around 40 lire [Fraddosio].



Fig. 7 Nerone (born 1924), from <https://www.cavallodellemurge.it/il-cavallo-delle-murge-origini-della-razza> (public domain).

As Fraddosio explains, in the years leading up to 1945, the Foggia Royal Stud undertook a deliberate program to shape the Murgesse horse into a versatile and reliable breed. Breeders sought to bring it closer to the Pugliese horse of the Tavoliere, so that both breeds could meet Italy's growing demand for riding and draft horses. These animals were intended not only for mili-

tary service, which is to say to supply mounts to the Carabinieri's mounted regiment and cavalry units, but also for logistical support, including pack mules for the Alpine brigades. By 1939, the Foggia Royal Stud maintained a diverse stallion population of 102 animals. Among these, Fraddosio writes, there were "28 Maremmani horses, 22 Murgesi, 18 Anglo-Norman and related crosses, 10 Salernitani, 6 each of Oriental and English descent, 6 Pugliese, 3 Thoroughbreds, 2 Hackneys or their crosses, and a single Lipizzaner." Within the Murgesese group, 8 stallions, including the foundation sire, belonged to the Granduca da Martina lineage, reflecting the Royal Stud leadership's marked preference for this stud as a cornerstone for the breed's further development. Granduca da Martina became the foundation sire of the B-type lineage; he was born in 1919, registered in the breed in 1933 as "Son of a Sorangelo farm stallion, of Anglo-Norman descent" [Pastore 1987].



Fig. 8 Granduca da Martina, born in 1919. Photocredit: private collection of the Pastore family, http://www.gotteroranch.com/GotteroRanchRobertaInamaMurgesi/eng-il_cavallo_Murgesese.html kindly made available by Ms. Roberta Inama, Gottero Ranch, La Spezia, Italy.

The devastation of the Second World War brought more challenges. The former Royal Stud was relocated multiple times; the war led to the dispersal of many registered horses and made the rapid rebuilding of a viable stallion stock a difficult task. At the same time, demand for service horses plummeted, and the mechanization of agriculture and the expansion of motor vehicles dramatically reduced the need for working equines. There was an attempt at breeding the Murgese Horse for meat, but the yields were not so good due to their heavy bone structure [Bigi 2022]. Thus, our resilient breed that had survived for centuries became endangered and lay in a semi-dormant state until 1990, when the Italian Ministry of Agriculture declared the Murgese an endangered breed and sought to start protecting it [ANAMF]. The breeding and selection of Murgese Horses resumed, and this is when the lighter, fancier sporty type was favored. These are the types of Murgese horses I mostly saw growing up. In particular, I have great memories of the very handsome stud Ferrari, born in 1992, from the Granduca Da Martina/Olengo lineage, a classically baroque type with a strong neck and a long, thick and very curly mane. Willing and athletic, Ferrari would never go unnoticed, and became the main performer in the shows of the “Accademia Nazionale di Arte Equestre il Nero Luminoso” (“National Academy of Equestrian Art The Shiny Black”), founded by Franco Calisi in 1998, and which still employs exclusively Murgese horses. I had the pleasure of befriending and admiring Ferrari in my early teens, as we were hanging out at the same barn for a few years, and he was the one who opened my eyes about the Murgese breed.

In the 1990s, despite the setbacks, careful breeding of the Horse of the Murge could resume, guided by a few outstanding stallions whose influence had shaped the postwar Murgese. Among the most important postwar studs there were: Conte di Conversano (1931), a son of Nerone; Nodo d’Oro (1937), descen-

ding from Granduca da Martina; and Marezzo (1936), a son of Araldo delle Murge [Fraddosio]. Thanks to these key sires, the Murgesse was able to retain its distinctive qualities and embark on a renewed phase of development, emerging from the war years as a breed poised to meet both traditional and modern demands. According to a study on genetic variability, though, the Murgesse Horse has experienced a significant narrowing of its genetic base over the years. Originally, there were 36 recognized founding animals, but just 19 ancestors contributed most to the breed's current population, revealing the impact of a historical bottleneck. In practical terms, this means that half of the breed's genetic diversity today can be traced back to only 6 key ancestors. Even though the population has rebounded to around 8,000 breeding animals nowadays (in 2025, according to De Siena; Bigi estimated them at 4,900 in 2020), the legacy of past selective breeding and uneven use of stallions is still evident, and it is something that needs to be discussed seriously if one cares about the future of the breed. These patterns underscore the importance of careful, ongoing management to preserve genetic variation and to guide future improvement, particularly as interest grows in enhancing the Murgesse's functional and morphological qualities [Bramante, 2016]. This means that today's efforts to diversify the breed need to be focused on identifying those stallions from less usual lineages but still correct as far as character and morphology. To this aim, I think it will be fundamental to move beyond strictly traditional, perhaps a bit rigid, ways of thinking, maybe based on a certain inclination for familist thinking. It will be important to select good stallions more inclusively, to strengthen existing collaborations, and form new ones, with geneticists and other academic researchers. Some fruitful collaborations have already been happening with the breeding of Murgesse horses at the Masseria Galeone, and with the Martina Franca Donkey, whose breeding has also been supervised by the

Department of Veterinary Medicine of the Università di Teramo directed by Prof. Augusto Carluccio [Università di Teramo website; De Berardinis et al. 2024]. Beyond breeding, it will also be essential to bring innovation in the field of colt-starting and training, since for the most part the education of equines in Apulia still relies on very outdated dominance-based models even if sometimes disguised as “natural horsemanship.”



Fig. 9-10-11 The well-managed, happy and curious breeding mares at the Centro di Selezione Equestre dei Carabinieri, Gorgofreddo (Taranto).

Zeus, above and to the left, was the first colt of the 2026 season. It would be advisable, with equine welfare in mind, to not breed these mares every year but every other year, or to allow for some form of rotation. Photocredit Amanda Minervini 2026.



Fig. 12 The Murgesse broodmares Indica and Ines (both born in 1934), and a Martina Franca molly mule, on the farmyard of Masseria Chiancone, during the summer threshing of 1938 (Famiglia Pastore's private archive reproduced with permission) <https://www.cavallodellemurge.it/asino-di-martina-franca-origini-della-razza>

3. The Education of Young Murgesse Equines: A Modern Bildungsroman

Understanding where the Murgesse comes from is inseparable from understanding what it needs now. Genetic integrity alone cannot secure the breed's future: how these horses are raised, handled, and educated from their earliest days shapes not only individual animals but the reputation and trajectory of the breed as a whole. The National Association of Breeders of the Horse of the Murge and the Martina Franca Donkey (ANAMF, Associazione Nazionale Allevatori del Cavallo delle Murge e dell'Asino di Martina Franca) was established in 1990, giving national recognition to a local group originally formed in 1948 by 22 breeders. Since 2023, the association has also included a section dedicated to mules and hinnies. ANAMF has worked tirelessly to define breed standards and to train and retain specialized inspectors. Curren-

tly, there are only 6 official inspectors for the Murgese horse³ and just a few for the Martina Franca donkey (mules and hinnies are not inspected). Each inspector must complete dedicated courses and specialize in each species, but they are not required to be veterinarians. Each equine must be measured and evaluated by at least one official inspector, although typically 3 of them work together. These inspectors travel throughout Italy as breeding expands beyond Apulia. With growing international demand—such as a U.S. breeder who has imported two stallions and is attempting to establish Murgese breeding in Montana—it is easy to predict that more trained inspectors may be needed.

SCHEDA DI VALUTAZIONE MORFOLOGICA - LINEARE											
Si procede alla valutazione con modello accanto e correttamente abilitato											
MICROCIP		SESSO		ANNO NASCITA		PASTELLO					
TESTA profilo		PETTO larghezza		GROPPA larghezza		POSTERIORE di dietro		PASSO			
Canino	0 1 2	Molto stretto	0 1 2	Molto corta	0 1 2	Molto chiuso	0 1 2	Molto corto	0 1 2		
Legge te cammo	3 4	stretto	3 4	corta	3 4	chiuso	3 4	corto	3 4		
Antileno	5	Proporzionato	5	Intermedio	5	Corretto	5	Intermedio	5		
Legge te montano	6 7	tempo	6 7	lunga	6 7	aperta	6 7	lungo	6 7		
Montano	8 9 10	Molto ampio	8 9 10	Molto lunga	8 9 10	Molto aperta	8 9 10	Molto lungo	8 9 10		
TESTA volume		LOMBI larghezza		GROPPA larghezza		POSTERIORE di dietro		TROTTO			
Gracile, comica	0 1 2	Molto corti	0 1 2	Molto stretta	0 1 2	Molto mancino	0 1 2	Molto corto	0 1 2		
Leggera	3 4	corti	3 4	stretta	3 4	mancino	3 4	corto	3 4		
Proporzionata	5	Intermedia	5	Intermedia	5	Corretto	5	Intermedio	5		
Legge te pesante	6 7	lunga	6 7	larga	6 7	cagnolo	6 7	lungo	6 7		
Pesante	8 9 10	Molto lunghi	8 9 10	Molto larga	8 9 10	Molto cagnolo	8 9 10	Molto lungo	8 9 10		
COLO larghezza		TORACE altezza		ANTERIORE di fronte		POSTERIORE di dietro		ELASTICITA'			
Molto corto	0 1 2	Molto cilindrico	0 1 2	Molto chiuso	0 1 2	Molto valgo	0 1 2	Molto rigido	0 1 2		
Corto	3 4	Cilindrico	3 4	chiuso	3 4	valgo	3 4	rigido	3 4		
Proporzionato	5	Proporzionato	5	Corretto	5	Corretto	5	Giustamente elastico	5		
Lungo	6 7	alto	6 7	aperto	6 7	sano	6 7	elastico	6 7		
Molto lungo	8 9 10	Molto alto	8 9 10	Molto aperto	8 9 10	Molto sano	8 9 10	Molto elastico	8 9 10		
COLLA allineamento		DORSO profilo		ANTERIORE di fronte		POSTERIORE di lato		MONOCHELISMO			
verticale	0 1 2	Molto inclinato	0 1 2	Molto mancino	0 1 2	Molto falciato	0 1 2	Tare dure			
tend verticale	3 4	inclinato	3 4	mancino	3 4	falciato	3 4	Tare molli			
Intermedia	5	Corretto	5	Corretto	5	Corretto	5	Giacchilo a volte			
Orizzontale	6 7	clitico	6 7	Cagnolo	6 7	ditto	6 7	Sinca straziato			
Molto orizzontale	8 9 10	Molto clitico	8 9 10	Molto cagnolo	8 9 10	Molto ditto	8 9 10	Cedevoli (i modelli)			
SPALLA inclinazione		DORSO larghezza		ANTERIORE di fronte		PASTOIA		Altre			
Molto dritta	0 1 2	Molto corto	0 1 2	Molto valgo	0 1 2	Molto corta	0 1 2	Comportamento eccitabile			
dritta	3 4	corta	3 4	valgo	3 4	corta	3 4	Comportamento eccitabile			
Intermedia	5	Intermedio	5	Corretto	5	Intermedio	5	Comportamento eccitabile			
obliqua	6 7	lunga	6 7	sano	6 7	lunga	6 7	Comportamento eccitabile			
Molto obliqua	8 9 10	Molto lunga	8 9 10	Molto sano	8 9 10	Molto lunga	8 9 10	Comportamento eccitabile			
GABRISE altezza		GROPPA inclinazione		ANTERIORE di lato		PIEDI		Misure metriche			
Molto piatto	0 1 2	Molto orizzontale	0 1 2	Molto incavato	0 1 2	Molto piccoli	0 1 2	Altezza al garrese	25.5		
piatto	3 4	orizzontale	3 4	incavato	3 4	piccoli	3 4	Circonferenza toracica	45.5		
Giust te rilevato	5	Intermedia	5	Corretto	5	Proporzionati	5	Circonferenza dello stinco	21		
rilevato	6 7	obliqua	6 7	arato	6 7	arato	6 7				
Molto rilevato	8 9 10	Molto obliqua	8 9 10	Molto arato	8 9 10	Molto grandi	8 9 10				

ASSOCIAZIONE NAZIONALE ALLEVATORI DEL CAVALLO DELLE MURGE E DELL'ASINO DI MARTINA FRANCA



ANAMF

BCS (body condition score)	
1	SOTTOPESO C-2 (B-1)
2	ASSE TETRAEDRI
3	VALENTI
4	INFORMA
5	GRASSO
6	OBESO

PRIMA DI VISITAZIONE SPETTATORI DI RAZZA

CHIARELLI FRANCESCO
DE SIENA ROCCO
FRANCOSO DONATO
MASTRANGELLO FRANCESCA
NETTI EUGENIO
RICCI AURELIA

NOTE: SINTA J. CARATTI

CLASSE

DATA E L'OGIO

Fig. 13 Example of an ANAMF's official table for linear morphological evaluation (horses).

Typically, after the dedicated inspector has measured the equine, all 3 evaluate the horse overall and independently fill out

³ Currently the 6 official inspectors for the Horse of the Murge are Francesco Chiarelli, Italian Forestry Corps; Rocco De Siena, DVM; Donato Francioso; Francesca Mastrangelo, zootechnician; Eugenio Netti, Italian Forestry Corps; and Aurelia Ricci, breeder.

a linear morphological table assigning points for each feature, including quality of the walk and trot. All inspectors sign each table, then the 3 tables are crossed to obtain a final score, which will determine the classification: A for excellent subjects, followed by B and C. A subjects will be more likely to be bred, even if there is no stringent rule about which classes are allowed to breed. It was only in 2021 that the Italian Ministry of Agriculture recognized the ANAMF as the official organization for the breeding and selection of the Murgese Horse and the Martina Franca Donkey, hence the association has actually been directly and solely in charge of the official stud book since January 2022 [Marangi 2022]. This is both an opportunity and a challenge for the local equine breeds, as the lack of any external overview could risk creating clientelism and insularism. Hopefully, though, the direction of the stud book will be an opportunity for the association for better planning on the different aspects of the breed, especially given the growing demand for the Murgese coming from abroad. In fact, as Apulia has been discovered, and partially ruined, by hordes of international tourists, the Murgese Horse has been given a lot more visibility and is now in high demand in Germany and the Netherlands, countries with strong dressage traditions, but also France, Spain, and very recently the USA. I myself have been promoting the breed in various circles, especially but not only in the USA and Canada, and have taken international groups to visit breeders in Apulia, while also tracking imports to the USA (made difficult by stringent biosecurity measures). However, and here lies the crux of the problem, the breed is currently risking losing quality to satisfy the growing demand. Will the love for our equines or the temptations of capitalism prevail? Will the true vocation of the Murgese let the breed overcome the seductions of international markets?

As part of their efforts to promote the native equines, each year since 1955, the ANAMF has been organizing the “Mercato

Concorso” in Martina Franca, an event breeders (not just local anymore) await: the attendance from breeders in 2025 saw a 20% increase. This is a much-awaited event also because many 30-month-old foals of horses, donkeys, and mules are brought in to be carefully measured and classified by the expert inspectors, and the results will have an important repercussion on the market and future breeding, even if breeders are still completely free to choose whoever they want as sires and dams. The event, which includes performances and a dressage show, is also a test of character for the young equines: the 30-month olds have to be loaded in the small European-style trailers and travel variable distances, and this is already a part that cannot be underestimated because for most equines being confined on a moving box goes against their species-specific preference for herd movement in open spaces. Once arrived at the destination, hopefully safely, they have to stay for 4-5 days in a new place without the safety of their usual space and herd mates; they have to be approached and handled by unknown people while so much else is going on. In the traditional Apulian upbringing, foals are left with their mothers for about 1-2 years with sporadic handling, while most of the education is left to the herd. More specifically, at 6-8 months typically the foals are separated for a couple of months to be weaned, and once weaned they return with their mothers. At around 2 years of age they are usually moved to juvenile bands, unlike most sport horses who are weaned way too early, at around 6 months and will never return to their mothers, even less a herd, hence missing out on important life skills taught by the herd. This type of upbringing, especially if it should continue as their regular management, satisfies most of the “Five Domains” model [Mellor and Reid 1994, and Mellor et al. 2020]. This upbringing also helps make their hooves among the strongest most people will ever see, thanks to the extremely rocky ground of the Murgia hills.

The herd-led education phase contributes, in my opinion, to make these horses the docile, sensible, and balanced breed we know and love. Today, we have evidence-based proof of the importance of this phase, hence, it is of utmost importance that Murghese horses bred elsewhere be raised in socio-environmental conditions as close to the traditional as possible. While I am certainly a strong advocate for this way of raising foals, and having frequented the Thoroughbred industry for a bit I have seen the many sad drawbacks of early separation and isolation, I also think that there is space for improvement in how foals are handled, when they are touched. Contrary to what many breeders still believe, foals should not be handled a lot [see various studies by Henry et al. 2005, 2009; Hausberger et al. 2004, all agreeing that more handling does not mean fewer adverse reactions in foals]. However, better, more mindful and ethologically-based early interactions, although sporadic, will bring a lot of advantages later on. One of my concerns about this fabulous breed is that because they already tend to be docile, local horsemanship has not had much motivation to move away from the outdated dominance-based horsemanship that is disappearing from other places. In fact, especially but not limited to the anglophone world, in the last 10-15 years a noticeable shift in horsemanship has been happening, even in the so-called “cowboy world,” thanks to figures such as the Australian Reining champion, now living in California, Warwick Schiller [Minervini 2023]. Schiller is very receptive to current research and nervous system regulation techniques, melding decades of his own experience with evidence-based innovations, which he has also been testing on his own foals. Apulian “trainers” could learn a lot from horsepersons like Schiller.



Fig. 14 Tarallino, Martina Franca Donkey, 30-month old champion and absolute champion 2025, born in 2023, sire: Newton di Vallenza; dam: Atene di Vallenza, bred by Nicola Palmisano. Photocredit: Valeria Perrelli Photography, kindly made available by ANAMF. Clearly a champion of cute, this stallion also bears the name of a beloved Apulian snack.

The term “training” is charged with dominance-based approaches, and it is unnecessarily anthropocentric as it suggests a hierarchy of a human teaching a horse. In truth, any true horse-person will admit candidly that working with horses also always means being taught by them, just like myself, as a college professor, always learn something from my students. So, I prefer to use the term “education,” which pertains to a field I know well and have been studying extensively for the past 20 years. At times I do use the terms “trainer” and “training,” especially if I am referring to dominance-based approaches, including old-style “natural horsemanship” such as Parelli, or if the orientation is unclear. In order to discuss the education of the Murgese Horse, we need to consider that non-explosive and docile horses should still be educated with attention and sensitivity, without shortcuts, because the moment revealing the “holes in the training,” to

use a common expression, will always arrive. Even if the breed is famously gentle and willing, there is a huge difference between a tense horse who does not explode and one who is genuinely serene, alert and happily collaborative. This is certainly not a utopia but a perfectly achievable goal for whoever is willing to put in the difficult work and long hours, most of which at a plateau, this goal requires. To be perfectly honest, even among our Murgese horses, I keep seeing many who are showing signs of tension, who are bottling up, not explosive but going inward, while seeing a veritably self-regulated and willing horse has been a rare exception. Yet, I was so glad when I found this exception among the foals bred and started by Paola Di Noya of the Masseria Capo Iazzo in the Gioia del Colle area. During my visit, I verified how Ms. Di Noya has been studying the most advanced educational techniques, such as Intrinzen (correct movement inspired by intrinsic motivation), target training, and other consent-based, positively-reinforced, biomechanically correct approaches, complementing her traditional knowledge with the best existing education on handling and starting horses. This example, which I hope is not unique, is a testament to Ms. Di Noya's dedication to educating and working on herself and her horses, despite the fact that these efforts, for now, do not receive the recognition they deserve, and that her motivation springs almost exclusively from her authentic love and understanding of the species. In this way, at least there is a lot of personal gain in seeing her foals do so well, but such examples would also deserve official recognition. Hence, for the best interspecies outcomes for both equines and humans, people working with Murgese Horses would need to begin starting colts mindfully through consent-based and ethological, science-based techniques, and in biomechanically appropriate ways. For instance, I would suggest, the Fiera Mercato could not limit the evaluation of the 30-month-old foals to morphology but include behavior. Additionally, the International

Society of Equitation Science (ISES), and world-renowned researchers such as Dr. Sue Dyson, Lisa Ashton, Dr. Paul McGreevy, Dr. Andrew McLean, and many others, have been putting forth a great number of excellent studies that should be required reading for anyone approaching equines. I would also advocate that one of the future ISES conferences should take place precisely in Apulia and that the ISES direction could make an effort to reach out to local equestrians, including amateurs, by allowing locals to attend for free or at a lower rate, because the local economy would not allow the intended audiences to be able to afford the fee. It is my firm belief that when organizing events or taking groups in certain areas, the visitors should not just extract from the location, but also give something back.

The current dominance-based approaches also have the negative effect of excluding some intelligent and sensitive subjects, including stallions, horses who would still be very trainable and who would become solid citizens, if only they could be brought up in ethologically correct ways, and also let grow in the traditional Apulian, semi-feral way, thus combining the best of our tradition with the best of innovation. This is not a contradiction, it just means that foals should be handled little but in correct ways, and they should remain wanting human interaction, instead of being imposed too much of it. Basically, if school were truly fun, there would be no Pinocchios... An ethological approach would also be critical for the management and education of the Italian police corps' (Polizia and Carabinieri) working equines, directed by the Reparto Carabinieri Biodiversità, Centro Selezione Equestre, based at the spectacular facilities Masseria Galeone and Gorgofreddo. It may be useful for the direction of the Center to develop clear guidelines to illustrate their teaching philosophy and orientation, as well as a specific program for their mules who, belonging to a separate species or being hybrid, should also be educated with tailored approaches. The intelli-

gent openness of the Lieutenant Colonel (Tenente Colonnello) Dr. Giovanni Notarnicola, has been ensuring a very successful program, based on species-specific management of all equines (as much as possible), as well as access to clinics for the personnel working with equines, trainers/educators, riders, handlers, and even farriers. Once again, a collaboration between research institutions such as the ISES, equine ethologists, and the educators of future police horses would create the best outcomes for both equines and humans.

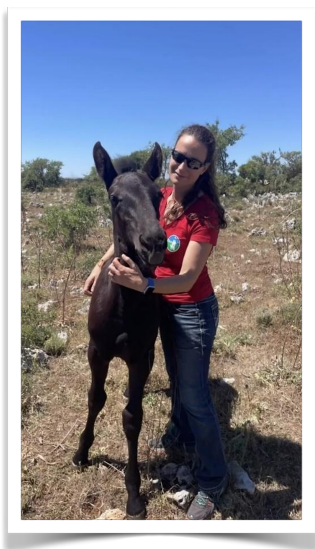


Fig. 15 The author at Paola Di Noya's Masseria Capo Iazzo "inspecting" UnAdriana, one-month old filly (Pellicano di Giannini di Sopra x Gemma, a direct descendant of the founding mare Adriana), May 2024. Photocredit Paola Di Noya. Notice the rocky, dry terrain typical of the Murgia hills and how, despite her tender age, this filly does not mind her front hoof on a rock.

4. Stallions Are Horses Too: Advocating for a Necessary Cultural Shift

Stallion management is among the most neglected areas of equine welfare, and the one with the most room for immediate,

meaningful improvement. While I am not advocating that male equines should be left intact as a rule, horse people do need to think carefully about the management and handling of stallions, here intended as domestic uncut male horses and equines, whether breeding, used for sport, or both. All true equestrians and horse people should be trained to handle correctly, according to evidence-based approaches, all genders, stallions not excluded. Along the same lines of reasoning, stereotypes about the aggressiveness and “dangerousness” of stallions would be easily dismantled thanks to informed practices and correct management. There is by now convincing scholarship on the positive effects of species-appropriate management on both stallion behavior and breeding [Gehlen et al. 2021; Popescu et al. 2022; Popescu et al. 2019; Briefer et al. 2013; De Oliveira and Aurich 2021; Górecka-Bruzda and Aurich 2025; Burger et al. 2012; Christensen et al. 2002; etc.]. In the horse world, handling stallions should be the standard, and if you learn to manage and handle a variety of them, across personalities, inclinations, and preferences (not all stallions are the same), you might be ready to handle all other genders. Unfortunately, in our severely anthropocentric world, the standard of horsemanship still tends to be set around way too compliant and often shut down horses. In this article, I will not go into the utilitarian and cultural motivations for the choices behind keeping some equines as stallions. Instead, I will only discuss the management of those who are left intact, whatever the reason. From here on, discussing some aspects of management, I now refer to “stallions” as uncut males, but also any subject with “studdish” behaviors, may they be cryptorchid, “proud cut,” intersex, or gelded late (and never got the memo...). In the equestrian world at large, and across cultures, the management and socialization of stallions is a crucial area in dire need of improvement: for cultural reasons, perhaps related to patriarchal

views, many Apulian horse people, especially those involved with the Murgese Horse, tend to prefer stallions.

Not only does the Murgese breed need new lines, but these stallions, like all stallions and like all horses, will also urgently need a better species-specific management to be able to flourish. Right now, I have a lot of reservations for how stallions are treated in Italy in general, as their management is still based on a series of unfortunate stereotypes, along with fears and misconceptions. Being herd animals, contact with conspecifics is of vital importance for equines: they need to be able to play, perform allogrooming, and receive and exchange all the safety and stability that can only come from being in a herd, as ever more studies confirm [Briard et al. 2016]. By “herd” I do not necessarily mean a single stallion with a group of mares (harem), but also multiple stallions and geldings socialized with each other (yes, it is possible, and I will show some examples shortly). On the utilitarian side, lack of socialization and welfare also causes reproductive issues in stallions [Górecka-Bruzda and Aurich 2025, along with others mentioned earlier]. Without mates, equines are unable to reach the REM sleep phase, which is necessary for true rest and recovery. Allogrooming, play, and access to space for free movement influence behavior positively. Instead, Murgese stallions, like the majority of stallions in Italy and, unfortunately, in many areas of the world, are still almost invariably kept alone, unable and not allowed to touch other horses, or even a companion goat or pony. When they are lucky, they spend their time bored out of their minds in a smallish paddock; when they are very unlucky, they are imprisoned in stalls for most of their lives and taken out to breed or collect semen. Even sadder, in some areas of the world, stallions are kept in stalls or posts, and also chained on both sides for days in a row. Although most Murgesi stallions do get out for exercise and for showing, especially dressage and pulling carriages, these few weekly hours of exercise are not enou-

gh, in terms of quantity and type of stimulation, to guarantee ethical standards of living, and humans are not, cannot and should be not substitutes for a life in a herd. Imagine how these poor stallions, deprived of the herd and of any enrichment, behave when they are handled, hence reinforcing stereotypes of “dangerousness,” which in reality are created by bad management and handling. And unfortunately, the local tendency is to handle them quite roughly.

A different way is not just possible but a necessity. In my quest to find better practices and hopefully to eventually help solve this issue, I have personally found and researched excellent examples of stallion management, which, I advocate, need to become the standard as soon as possible. While currently these good examples amount to an exception, the only reason is the lack of true horsemanship skills needed to build a herd of stallions, or around a stallion, and a lack of true understanding of the species. These are not the only examples in the world, but I will discuss briefly only two that I have studied in person as part of a larger book project.⁴ An exemplary case is to be found on the beautiful island of Djerba, off the coast of Tunisia, known as the “stallion island,” where a Dutch woman, Martine Nomane, is the owner of the operation called “Djerba Zitouna Stables.” Martine shares her life with 12 Arab and Arab-Barb stallions who live in stable groups of 2-3 studs of all ages. Martine is also the educator and sole decision-maker for all the stallions. Her marvelous and perfectly-behaved stallions live outside, in a small but species-appropriate environment, and they are employed as trail horses as well as for consent-based horsemanship and liberty clinics. A major bonus for their health and fitness is that they get

⁴ I have been developing this discussion more in depth in the monograph *Equines and Humans. A Long Journey of Mutual Discovery*, co-authored with Roberto Marchesini, under contract with White Horse Press.

to exercise in water, in the sea, and most of them also love to swim. Most stallions can be ridden bitless in a hackamore and cantered together without any trouble even by intermediate riders. It is true that there are no mares on the island, but, during work, these stallions do not react when they see other stallions from other groups. I would guess, based on their education and understanding of their job, that they would not react if they saw mares either.

Even though there are no equine veterinarians on the island, or saddle fitters, and the hoof care is also limited, Ms. Nomane ensures health check and tack fittings thanks to visitors from outside Tunisia. This management, along with the extremely savvy herd-building that Martine is able to perform, has resulted in happy, stable and perfectly fit stallions who are a pure delight to ride and be with.⁵ Behind this wonderful example, there is a woman who has invested many years and a lot of resources educating herself on every aspect of horsemanship. To this day, Ms. Nomane has a herd of healthy, happy stallions, and a both ethical and financially successful business. Even though this might be a privileged example based on European resources, there should be no obstacle to developing ethical and ethological horsemanship everywhere in the world, following the principle of “One Welfare” (welfare and care of humans and nonhumans tend to go hand in hand, but financial challenges do not always predict nonhuman welfare). I have observed instances of ethically-informed and excellent horsemanship skills among the Māori in Aotearoa (New Zealand), the last indigenous group to be introduced to horses in the world, in 1814, even if they are at a historical financial disadvantage compared to other ethnic groups

⁵ Ms. Nomane can be contacted through her website: <https://djerbazitouna.com/>

in their country [Stats NZ 2016].⁶ I have also observed good management in Marrakech, Morocco, at the Selman Hotel, where stallions also live in paddocks with various conspecifics, although I have not seen them together with other stallions, and they spend part of the day in stalls. The horsemanship there is still traditional, not yet consent-based but rooted in French classical dressage, which sometimes can be practiced too harshly and without due attention to each equine's learning times and specific needs. The management, though, was quite good, and certainly a good example of socialized and hence calmer stallions.

I would say that, on average, the USA does not have much of a stallion culture. Only sporadically, have I seen stallions able to at least touch other horses over a fence. The vast majority of boarding barns do not allow stallions at all (only one barn would, in a 100 mile radius from my area in Colorado, but it would have had to be in isolation). One of my horses, a stunning off-the-track chestnut Thoroughbred (Brown Almighty, foaled in Kentucky in 2010 by Big Brown and out of Gone Goodbye, now known as Jimmy), raced as a stallion for 7 years, until age 9.⁷ Very well-behaved with humans and very focused on his job, he was never socialized with other equines, and, as far as I could verify, he spent his racing years confined in a stall, by himself. He was gelded at 9, just after his retirement, shortly before he came to me

⁶ There is a fascinating line of inquiry I hope to explore more, although it is a sensitive topic: current indigenous horsemanship is nuanced. Some individuals are melding traditional practices with contemporary consent-based approaches. Sadly, some elements of indigenous approaches reflect the internalization of white colonial modalities that should be discussed openly and critically with equine welfare and care in mind.

⁷ A nuanced discussion of the racing industry goes beyond the scope of this article.

(if the choice were ever up to me, I would have kept him intact). Having been castrated late, Jimmy happens to be one of those horses who will forever act and think of himself as a stud. When he arrived, he exhibited typical studdish behaviors, he used to be reactive, prone to easy rearing, striking and screaming even meters away from other horses. What changed since then is, mostly, how humans act around him, much less him; or better: his opinion of himself and his personality did not change much (luckily!). Yet, it is remarkable how his behaviors have changed once he saw humans making efforts to actually listen to him. When I got him, I was told he was too dangerous and that I should give him away (“to whom?!” I wondered briefly). With my refusal to get rid of him, came the order to leave the boarding barn where we were, and we began a quest for the perfect place (or good enough place...), since I am unable to afford my own land. I did have a few things to prove in the matter of socializing stallions, or recently gelded horses: although not all studs are equal, in the majority of cases it is indeed possible to socialize previously-un-socialized studs, even in the case of Thoroughbreds, who are notoriously left very briefly with their mothers and hence miss out on another big part of their education and socialization. Because of my agenda (and because once he started living outside in a mixed herd, at a temporary place, Jimmy had made clear he had no intention of going back into a stall), we both embarked on a difficult but necessary journey of integration into a new herd. After a few months of a temporary situation, I was able to find a boarding barn that would let me experiment with my especially expressive Jimmy, and which had a stable herd of well-adjusted and patient geldings, mostly Quarter Horses. Thanks to their sanity, sometimes bordering on saintliness, over the course of 2 not uncomplicated years, Jimmy learned the language and customs of a functional domestic herd. He has now been living happily on pasture with his friends for the last 5 years, partying

on free-choice hay.⁸ Jimmy also has the choice to interact with humans, if he feels like it, favoring human interaction over his friends and food, not because he has no other choice or nothing else to do, but as an actual choice [Minervini 2023]. To the surprise of the people who knew the “old Jimmy,” once he was living outside in a herd, his most fundamental behavioral change happened when he realized he had choices and that he would be heard, so he understood he did not have to ask loudly anymore. Needless to say, I never reprimand him for studdish behaviors, which occasionally may still happen: I simply make a note of them as a form of communication, and if it is really an inconvenient behavior, or not a good time, all I have to do is ignore it, and he will understand that answer. It was Jimmy who made me an advocate for stallions, and for good management and evidence-based education for all equines.

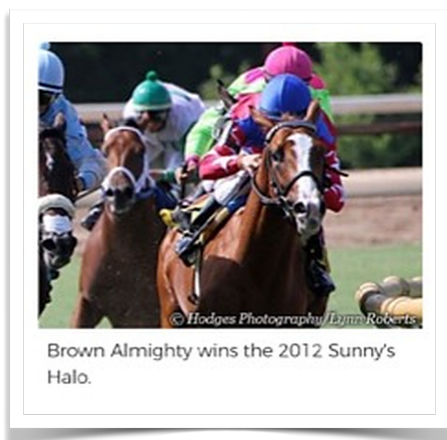


Fig. 16 Brown Almighty, now known as “Jimmy” as a successful 2-year-old racing stallion. Picture from <https://www.bloodhorse.com/horse-racing/thoroughbred/brown-almighty/2010>

⁸ Many pictures and videos of Jimmy’s life are available on the Instagram account “dr.minervini”.



Fig. 17 Jimmy spontaneously leaves one of his herd mates, Sonny, and his 24/7 hay buffet, to interact with the author (who is not going towards him or calling but simply standing at a distance giving him space and time to make his own decisions). Photocredit: Amanda Minervini, 2025.



Fig. 18 Jimmy (further right, wearing his full anti-fly armor) and his herd on a roughly 8-acre pasture. Photocredit: Amanda Minervini, 2025.



Fig. 19 Jimmy with his buddies, deciding if he wants some human interaction. Photocredit: Amanda Minervini, 2022.

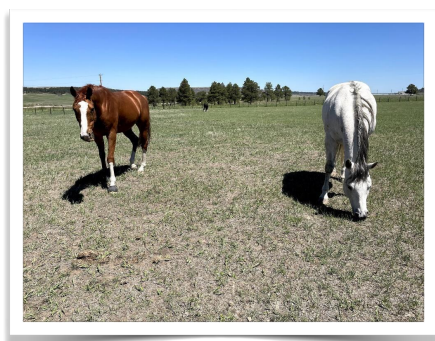


Fig. 20 (above) and fig. 21 (below) Jimmy finally integrated into his herd after a 2-year long process. Photocredit: Amanda Minervini, 2021.

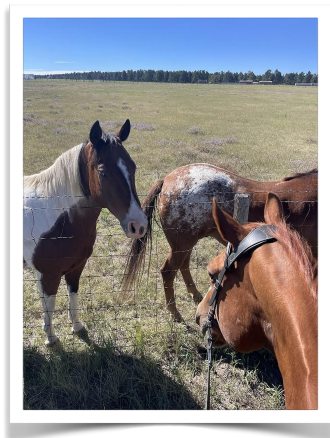


Fig. 22 Jimmy saying hello to Oscar and Maverick while taking the author for a stroll around the ranch. Photocredit: Amanda Minervini, 2023.

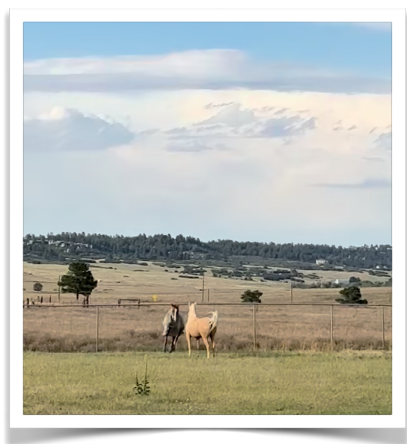


Fig. 23 Energetic, yet uneventful, first encounter between Jimmy and the newly arrived Haka (Quarab gelding born in 2020), proving once more that Jimmy has become a well-adjusted horse who is able to have safe interactions, despite the permanence of stallion-like behaviors, September 2025, photocredit: Amanda Minervini.

5. Conclusions

I intended this article as an ode to a beloved breed, in awe of how my human Apulian ancestors were able to choose their devout and especially reliable companions over the centuries and to survive together, thanks to a strong interspecies bond, in a rougher area than coastal Apulia. The centenary of the Murgese horse is more than just a celebration of a breed, it is a call to safeguard a living heritage that embodies resilience, adaptability, and cultural identity. As global interest in the Murgese grows, the challenge is to balance tradition with innovation. Preserving genetic diversity must become a priority, supported by rigorous scientific research and transparent breeding strategies that avoid the pitfalls of narrow bloodlines. Equally crucial is the modernization of educational practices for both equines and humans. Moving beyond dominance-based models toward truly consent-based and ethologically-informed approaches will ensure training methods that respect equine cognition, welfare, and biomechanics. These principles should guide not only private breeders but also institutional programs, including those for mounted police horses, donkeys, and mules, each requiring species-specific strategies. As these strategies are developed, it should not be forgotten that stallion management is the area that needs most improvement. To achieve these goals, creating and strengthening international and interdisciplinary collaborations will prove to be essential. Breeders, national associations, universities, and research organizations should work together to advance studies in genetics, biomechanics, and behavior, while promoting professional qualifications for inspectors and educators. Finally, as the Murgese enters international markets, economic opportunities should never overshadow its rootedness in a specific environment and its cultural significance. The tension between market demand and breed integrity will not resolve itself. International interest in the Murgese is welcome, but history offers a cautiona-

ry tale: breeds that have been scaled up rapidly to meet market demand have too often been reshaped by it, losing precisely the qualities that made them desirable in the first place. Resisting that trajectory is not anti-progress; it is the more difficult and more principled form of stewardship. Breeders, associations, and buyers share this responsibility equally: the future of the “Shiny Black Pearl of Apulia” and of his equine cousins depends on a shared commitment to integrity, sustainability, and interspecies understanding, values that will allow these remarkable equines to thrive for centuries to come.



Fig. 24 above: Martine Nomane and Raqas, 2009 Arab-Barb stallion, November 2025. Photocredit: Djerba Zitouna Stables. Fig. 25 below: Martine and Tahfoun, 2016 Barb stallion. Photocredit: Djerba Zitouna Stables.





Fig. 26-27 The author and the gorgeous Pacha, 2014 Barb stallion, engaging in the most fun part of field work, November 2025.
Photocredit: Martine Nomane, Djerba Zitouna Stables.

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Re-evaluating the Ecological Role of Domestic Horses: A Context-Dependent Keystone Perspective

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Abstract

Across Europe and beyond, increasing pressure on land driven by climate change, biodiversity loss, and competing demands for food production, conservation, and urban development is intensifying the need for multifunctional land-use strategies. Within this context, large herbivores are receiving renewed attention for their ecological roles. Feral or semi-feral horses are increasingly included in conservation grazing and rewilding initiatives, yet the potential of domestic horses kept for sport and recreation to support ecological functioning remains underexamined. This conceptual review evaluates the potential of horses to function as keystone species across four roles: resource providers, ecosystem engineers, dominant controllers, and mutualists. While horses do not fully align with all categories under strict ecological definitions, a context-dependent interpretation shows that they can exhibit functionally equivalent roles under specific ecological and management conditions. Keystone functioning

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should therefore be viewed as an emergent outcome of interactions between equine behaviour, ecological context and conditions, and human management strategies. A structured framework is introduced to identify the conditions under which such effects may arise. As such, the current review provides a greater understanding of how domestic horses can help shape ecological processes in human-dominated landscapes and may be integrated into multifunctional land-use strategies.

Keywords

Keystone species; horses; ecosystem engineering; conservation grazing; resource provisioning; context-dependent ecology; functional ecology.

1. Introduction

Over the past few decades, the combined pressures of population growth, urbanisation, climate mitigation, biodiversity loss and increasing climate instability have led to increasing competition for land across Europe [Kiesecker et al. 2024; Lazo et al. 2026; Winkel et al. 2026a]. Importantly, this is not simply a question of local planning pressure. It is the result of a finite land base being required to accommodate a growing number of sometimes incompatible functions. The European Environment Agency (EEA) identifies land use as a central arena in which urban development, agriculture, energy production and biodiversity conservation increasingly intersect, noting that around 80% of Europe's land surface is already shaped by human activities [EEA 2025]. Between 2000 and 2018, man-made infrastructures such as built-up areas and roads were the only land category to show substantial net expansion, increasing by more than 6%, underlining the continued territorial advance of the built environment [EEA 2025].

These developments reflect a broader structural problem. Haberl [2015] describes three fundamental forms of land use competition: 1. within production systems, such as food versus fuel, 2. between production and conservation, and 3. between the built environment and both production and conservation. More recently, renewable energy siting is emerging as an additional major claim on land [Ferrerias-Alonso et al. 2024; Kieser et al. 2024]; as do the numerous initiatives aimed at restoring ecosystems, sequestering carbon, and meeting biodiversity targets. Vital as they are, they all introduce additional demands on the land [Gonthier et al. 2014; Hiron et al. 2013; Lanz et al. 2018; Ortiz et al. 2021; Pfiffner et al. 2019]. Taken together, these developments fundamentally alter how land use is evaluated [Winkel et al. 2026a]. Land can no longer be treated as a passive resource allocated to a single dominant function [Huber et al. 2022a; Manning et al. 2018a], but must be assessed in terms of its capacity to generate ecological, economic, and social value simultaneously [Brück et al. 2024; Huber et al. 2022b; Kirschke et al. 2021; Liu et al. 2022; Manning et al. 2018b; Winkel et al. 2026b].

Across the European Union, equine land use is estimated to cover approximately six million hectares, largely in the form of permanent grassland [Hüppe et al. 2020; Mutillod et al. 2024a; Rzekeć et al. 2020; Rzekeć et al. 2022; Schmitz & Isselstein 2020; Wolframm et al. 2024]. Yet despite this considerable spatial footprint, the equine sector has been largely overlooked in debates on the agroecological transition, biodiversity policy, and multifunctional rural land use [Elgåker 2012; Prokopy et al. 2011; Wolframm et al. 2025]. Part of this limited visibility is structural: equine farms often fall outside standard agricultural classifications and statistics, leading to systematic underestimation of their scale, land use, and potential contribution [Elgåker 2012; Rzekeć et al. 2020; Wolframm et al. 2025].

This is particularly striking, seeing that equine holdings occupy a hybrid position at the intersection of agricultural and recreational land use, rural and peri-urban space, and productive as well as social functions [Elgåker 2012; Hedenborg et al. 2021, 2024; Rzekeć et al. 2020; Wolfram et al. 2025a]. Yet even though this multifunctional nature can make the equine sector, and more specifically domestic horses kept for recreation and sport, difficult to define in the context of existing policy frameworks, it also makes them particularly relevant to current land-use debates.

In response, a growing body of research is examining the role of horses in a broader sustainability context [Chen 2024; Furtado et al. 2022; Hüppe et al. 2020; Loucougaray et al. 2004; Martinson et al. 2016; Moinardeau et al. 2020; Osoro et al. 2012a; Pięka et al. 2022; Ringmark et al. 2019; Thulin et al. 2025; Wolfram, Engels, et al. 2025; Wolfram et al. 2024a]. However, most of the work focuses on ecological initiatives with semi-feral or feral horses, such as rewilding, nature restoration and conservation [Baur et al. 2017; Beever & Aldridge 2011; Boyd et al. 2017; Crooms et al. 2018; Kristensen et al. 2026; Lovász et al. 2024; Morera Chacón et al. 2021; Naundrup & Svenning 2015a; Ribeiro et al. 2025; Thomassen et al. 2023]. All the while, the role of the domestic horse in maintaining or restoring ecologically functioning habitats remains largely underexplored [Morera Chacón et al. 2021].

Understanding the roles that individual species play within ecosystems is essential to both ecological theory and applied conservation. Species interact with their environments in complex and often nonlinear ways, contributing to processes such as nutrient cycling, energy flow, habitat structuring, and community stability [Raes & Bork 2008]. These roles are not always evenly distributed, however. Some species exert effects on ecosystem structure and function that are disproportionately large relative to their abundance or biomass [Jiang et al. 2008]. These are of-

ten referred to as keystone species [Power et al. 1996] and identifying them has become a central aim in ecology, as it allows researchers and land managers to understand ecosystem dynamics, prioritize conservation targets, and design interventions that support ecosystem resilience.

In the context of increasing environmental pressures and shifting land use priorities, this conceptual review therefore explores whether, and under which conditions, domestic horses may be considered a keystone species. In doing so, it reassesses the potential contribution of equids to landscape structure and ecosystem processes.

2. The Keystone Species Concept

The keystone species concept originates from Robert Paine's experimental work [1969] on intertidal communities in the Pacific Northwest. By removing the predatory sea star (*Pisaster ochraceus*), Paine observed a rapid decline in species richness as California mussels (*Mytilus californianus*) monopolized available space. This demonstrated that a single species, despite low abundance, could regulate competitive dynamics and maintain community structure, challenging the assumption that ecological importance scales with biomass or numerical dominance.

The term "keystone" reflects this structural role, similar to the central stone in an arch that maintains system stability [Paine 1969]. Building on this, Power et al. defined a keystone species as one "whose impact on its community or ecosystem is large, and disproportionately large relative to its abundance" [1996], thereby formalizing the concept in terms of functional asymmetry. This distinction separates keystone species from dominant or foundation species, whose influence is primarily linked to biomass, or abundance, rather than irreplaceable ecological function [Menge et al. 1994; Mouquet et al. 2013].

Subsequent work emphasized that keystone status is not an intrinsic property of a species, but context-dependent and shaped by ecosystem structure, spatial scale, and species interactions [Berlow et al. 1999]. As a result, the keystone concept has been extended to not only include apex predators: herbivores, pollinators, dispersers, and ecosystem engineers are also included in the definition [Valls et al. 2015]. Even at low densities, such species can influence ecosystem structure, function, and stability through their interactions with other organisms [Mouquet et al. 2013], including the regulation of population dynamics, modification of resource availability, maintenance of habitat heterogeneity, or the initiation of trophic cascades [Berlow et al. 1999; Paine 1969].

Keystone status is therefore functional rather than taxonomic. Species across the different levels of the food chains may fulfil keystone roles if their presence maintains ecological balance or supports the persistence of other species [Valladares et al. 2014]. At the same time, these roles remain inherently context-dependent. A species may function as a keystone in one system but not in another, depending on community composition, environmental conditions, and spatial scale [Berlow et al. 1999].

3. Domestic Horses through a Keystone Lens

Having developed into a broader functional framework for understanding disproportionate ecological influence, modern keystone theory distinguishes four primary functional roles: resource providers, ecosystem engineers, dominant controllers, and mutualists [Payton et al. 2002; Rejuba Pongen 2024a]. These categories reflect distinct mechanisms through which species shape ecosystem processes, ranging from habitat provisioning and physical landscape modification to trophic regulation and co-evolved interdependencies [Davic 2003; Mills & Doak 1993; O'Connor & Crowe 2005; Rejuba Pongen 2024b].

While the concept has traditionally been applied to wild species operating independently of human intervention [Hale & Koprowski 2018], the scale and intensity of contemporary anthropogenic pressures on land use and ecological functioning call for an expanded interpretation. If keystone status is context-dependent, then those contexts arguably include management regimes, land-use decisions, and broader socio-economic conditions.

Domestic horses exist within such human-mediated systems, where ecological effects emerge through the interaction between animal behaviour and management structures. The following sections therefore examine the extent to which domestic horses may express keystone-like functions across the four categories of resource providers, ecosystem engineers, dominant controllers, and mutualists, while accounting for the constraints and opportunities introduced by domestication, enclosure, and human governance.

4. Resource Providers

Resource providers are species that significantly influence the availability or distribution of critical ecological resources, such as food, shelter, or nutrients, for other organisms [Diaz-Martin et al. 2014; Novoa et al. 2025; Watson & Herring 2012]. Their functional role lies in supplying essential material inputs or structural opportunities on which multiple species depend. Within the keystone framework, they are distinguished by the disproportionate effects their removal has on community dynamics through the loss of these key resources [Kamiya et al. 2014].

The saguaro cactus (*Carnegiea gigantea*) in North American deserts, for example, provides nesting sites, shelter, and food through its fruits and flowers for numerous birds, bats, and insects [Wilson & Wolkovich 2011]. Also, fig trees (*Ficus* spp.) sustain frugivores in tropical forests through year-round fruiting

during periods of general scarcity [Shanahan et al. 2001]. Although more commonly cited as engineers, beavers (*Castor canadensis*) may also function as resource providers by generating habitats and water sources used by a wide range of aquatic and semi-aquatic species. Across these cases, the defining feature is the provision of ecologically valuable resources at times or in places where alternatives are limited.

When applied to domestic horses, this classification is ecologically well supported. Through dung deposition, horses introduce semi-digested organic material into the environment, enriching soils and providing nutrients and substrate for microbial communities, fungi, and detritivores such as dung beetles and springtails [Beever & Herrick 2006]. These decomposer communities, in turn, support birds and small mammals, thereby contributing to ecosystem complexity and secondary productivity [Eldridge et al. 2020a]. Horse dung thus functions as a recurrent ecological input that redistributes nutrients and creates localized centres of biological activity.

In managed equine systems, manure is frequently collected and applied to surrounding land to fertilize soils or restore fertility, thereby integrating horse-derived nutrients into broader agroecological systems [Fiorellino et al. 2013]. In such contexts, horses contribute not only through direct deposition, but also through the generation of nutrient resources that can be redistributed across the landscape.

Horses also contribute indirectly to resource availability through small-scale physical disturbances associated with movement. Trampling can create bare soil patches and shallow depressions that enhance water retention and facilitate plant colonisation. These microsites may increase floristic diversity and provide habitat opportunities for invertebrates and amphibians [Davies et al. 2014]. Although these effects overlap with ecosy-

stem engineering, they are relevant here insofar as they generate ecological substrates and opportunities for other organisms.

The magnitude and spatial expression of these effects vary with habitat type, grazing density, and season. However, the underlying mechanisms remain robust, seeing that they arise from consistent features of equine physiology and behaviour. It can be argued, therefore, that domestic horses meet the functional criteria for resource providers insofar as they create and redistribute key ecological inputs that influence nutrient cycling, soil structure, and food-web interactions. Of the four keystone categories considered here, this is the most directly supported by empirical evidence and the least conceptually extended.

5. Ecosystem Engineers / Landscape Architects

Ecosystem engineers are organisms that directly or indirectly modify the physical environment, thereby influencing the availability of resources to other species [Gurnell 2015]. As such, ecosystem engineers alter abiotic conditions such as soil structure, hydrology, microclimate, or vegetation patterns in ways that reshape ecological opportunity. These modifications may be persistent and scale-dependent, but they create or maintain ecological niches that would otherwise not exist [Sterzyńska et al. 2025].

Perhaps the best-known ecosystem engineer is the beaver (*Castor canadensis*), whose dam-building reshapes hydrological systems, creates wetland habitats, and alters species composition [Bloomquist et al. 2010]. Prairie dogs (*Cynomys* spp.) aerate soils through burrowing, thereby influencing plant community dynamics [Alexander et al. 2020]. Elephants maintain open savannah landscapes by suppressing woody encroachment [Kideghesho 2016]. In each case, the defining feature of the species is the capacity to alter the physical structure of the environment in ways that cascade through ecological systems.

Horses fit this category, particularly in open and semi-natural landscapes. Through grazing, trampling, and trail formation, they modify environmental structure and function in multiple, interrelated ways. Experimental studies show that horses can maintain open habitats, suppress woody encroachment, and create vegetation mosaics that support higher plant and pollinator diversity [Garrido et al. 2019, 2022a; Naundrup & Svenning 2015b]. By delaying or reversing succession, especially in grasslands and heathlands, they maintain early-successional plant communities that support a wide range of herbaceous species and associated fauna [Mutillod et al. 2024b]. This role is particularly relevant in landscapes where abandonment or undergrazing would otherwise lead to scrub development and the loss of open habitat.

In managed or semi-natural systems, these effects are shaped by spatial patterns emerging under human-designed regimes. Selective grazing generates heterogeneity in vegetation height and composition, promoting patch dynamics and mosaic habitats [Osoro et al. 2012b]. Where movement is channelled through paddock design or seasonal access, resulting trail networks may support seed dispersal, edge effects, and functional connectivity, even in fragmented landscapes. In wetter pastures, trampling can create micro-depressions and bare patches that benefit pioneer plant species, amphibians, and invertebrates [Beever & Herrick 2006; Ostermann-Kelm et al. 2009].

Within domestic systems, the term landscape architect can be used as an interpretive extension of ecosystem engineering. Horses do not intentionally design landscapes, but their grazing behaviour and movement patterns contribute materially to landscape structure [Wolframm et al. 2025b]. These effects are further shaped by human land-use design. The biodiversity potential of equine farms depends strongly on decisions regarding vegetation structure, water availability, and the spatial configura-

tion of grazing areas [Wolframm et al. 2024; Wolframm et al. 2025b]. Features introduced for management or welfare purposes may simultaneously provide habitat and refuge for other species. Landscape outcomes therefore emerge through the interaction between animal behaviour and ecological design embedded in equine management systems.

In essence, domestic horses qualify as ecosystem engineers, but their role is context-dependent. When stocking density, movement opportunity, and habitat structure are aligned with ecological processes, horses can support early-successional dynamics, spatial heterogeneity, and soil processes that benefit broader communities. Under overstocked or simplified conditions, however, the same mechanisms may lead to compaction, erosion, and homogenization. Their keystone potential as engineers is therefore real, but contingent.

6. Dominant Controllers

Dominant controllers are keystone species whose disproportionate ecological impact stems from their ability to regulate the population dynamics of other species, typically through predation, competition, or suppression [Rosenheim et al. 1999]. By limiting the dominance of certain organisms, they maintain ecosystem structure and support the persistence of more diverse communities. Their effects are often most visible in top-down trophic cascades, where changes in the abundance or behaviour of the controller spread through the food web [Monaco et al. 2014].

A classic example is the sea star (*Pisaster ochraceus*), whose removal from rocky intertidal systems allow mussels to proliferate unchecked, dramatically reducing species diversity [Paine 1969]. Similarly, apex predators such as wolves (*Canis lupus*) in Yellowstone National Park structure ecosystems by regulating herbivore populations and altering browsing pressure, with cascading effects on vegetation, soils, and hydrology [Estes et al.

2011]. In these cases, dominance control operates through direct suppression at key trophic positions.

Under this definition, horses clearly do not qualify as dominant controllers. As non-predatory herbivores, they do not regulate animal populations and do not initiate classical top-down trophic cascades. Their influence is not exerted through direct suppression of other animal species, and they therefore fall outside the category as it is conventionally defined.

However, when shifting the focus from fauna to vegetation, a different picture emerges. Through selective grazing and repeated soil disturbance, horses influence plant community dynamics and can suppress competitively dominant species such as stinging nettle (*Urtica dioica*), bramble (*Rubus fruticosus*), and highly competitive grasses such as English ryegrass (*Lolium perenne*) [Chen n.d.-b; Tydén et al. 2019]. This may facilitate the persistence of subordinate species and contribute to floristic diversity and habitat heterogeneity [Beever 2000; Mutillod et al. 2024]. While not predation, this represents a form of dominance regulation through biomass removal.

In domestic systems, these effects are further shaped by management. High-intensity grazing in confined areas may reduce plant biomass and lead to vegetation homogenization, with knock-on effects for other functional groups [Davies et al. 2014]. Conversely, rotational grazing, temporary exclusion, and seasonal adjustments in stocking density can enable vegetation recovery, soil restoration, and successional dynamics [Mutillod et al. 2024; Williams et al. 2021]. The regulatory influence of horses is therefore not fixed but mediated through management regimes.

At this point, the boundary between dominance control and ecosystem engineering becomes less distinct. Processes such as selective grazing, patch formation, and trampling-induced heterogeneity are typically framed as engineering effects [Osoro et al. 2012b], yet they also involve the suppression of competitively do-

minant plant species. In this sense, horses can be understood as regulators of vegetation structure, or as dominant consumers within plant communities, where their presence limits competitive exclusion and maintains compositional openness.

Domestic horses therefore do not meet the strict ecological definition of dominant controllers. However, their capacity to suppress dominant plant species suggests a form of dominance modulation at the vegetation level. This does not redefine the category, but it does indicate that, in managed herbivore systems, functional analogues to dominance control may emerge in systems where regulation operates through vegetation dynamics rather than trophic suppression.

7. Mutualists

In ecological theory, mutualists are species engaged in reciprocal interactions with one or more other organisms, in which both parties benefit in terms of fitness, survival, or reproductive success [Chen et al. 2023]. Keystone mutualists exert disproportionate ecological influence by facilitating the persistence and proliferation of multiple other species through these reciprocal relationships. Such interactions are typically understood as evolutionarily co-developed and usually occur between non-human species [Dáttilo et al. 2016; Wang et al. 2022].

The fig tree (*Ficus* spp.) and fig wasp demonstrate succinctly the nature of a mutualistic relationship, in which each species depends on the other for reproduction [Herre et al. 2008]. Similarly, acacia trees and ants (*Pseudomyrmex ferruginea*) show true mutualism in action, whereby the tree provides shelter and nutritional rewards while the ants defend the plant against herbivores and encroaching vegetation [Palmer et al. 2008]. These cases underscore the defining feature of keystone mutualists: biologically essential, co-evolved interdependence.

Under this formal framework, horses would not be considered as mutualists. There is no scientifically documented case of horses forming evolutionary mutualisms with other non-human species, excluding internal symbioses such as gut flora, and they do not participate in interactions that are reciprocally essential to the life cycles of other non-human organisms. In the strict language of community ecology, domestic horses cannot therefore be classified as keystone mutualists.

A different interpretation emerges, however, when the scope shifts from strictly ecological systems to socio-ecological ones. Horses have developed a long-standing and durable relationship with humans, characterized by interdependence, cultural integration, and co-adaptation [Pereira-Figueiredo 2025a]. While not an ecological mutualism in the classical sense, this relationship has played a substantial role in shaping both landscapes and social organization over time [Monterrubio et al. 2024; Sutherland 2021; Sutherland 2019; Wadham et al. 2023].

Historically, horses contributed to transport, agriculture, and warfare, enabling mobility, intensification, and territorial expansion [Librado et al. 2016; Pereira-Figueiredo 2025b; Taylor 2025]. These roles influenced patterns of land use and infrastructure, while simultaneously reinforcing the conditions for maintaining horse populations through breeding, protection, and resource allocation [Abdou et al. 2024; Farrokh et al. 2023]. Reciprocal dependencies thus emerged within a human-dominated system, even if not through co-evolution in the ecological sense.

This relationship persists in contemporary contexts. Humans maintain horse populations through breeding, veterinary care, feeding, housing, and legal protection, while horses contribute to human well-being through sport, leisure, and therapeutic applications [Freeman 2019; Hausberger et al. 2008]. Equine-assisted services, for example, have been shown to support mental health, psychological recovery, and social functioning [Lentini &

Knox 2009; Wang et al. 2015; Weiss-Dagan et al. 2022]. These benefits reinforce societal valuation of horses and sustain continued investment in their management and associated land use.

The ecological relevance of this relationship becomes apparent under conditions of increasing land-use pressure and demand for multifunctionality. In managed as well as rewilding landscapes, horses can operate as functional connectors between ecological processes and human objectives. Through grazing, movement, and spatial use, they influence habitat composition and species assemblages in ways that align with broader societal goals related to biodiversity, landscape heterogeneity, and land stewardship.

In this sense, horses participate in a functional form of mutualism within anthropogenic systems. Human societies maintain horses and the landscapes they occupy because horses provide cultural [Monterrubio et al. 2024], social [Broms et al. 2022; Hedenborg et al. 2021], therapeutic [Badin et al. 2022; Helmer et al. 2021; Sissons et al. 2022], and increasingly ecological value [Garrido et al. 2022b; Mutillod et al. 2024; Thulin et al. 2025]. Horses, in turn, contribute to the structure and diversity of those landscapes in ways that support both ecological and societal functions. While this interpretation extends beyond classical ecological definitions, it reflects the reality that species interactions in human-dominated landscapes are shaped as much by social processes as by evolutionary ones.

8. Evaluating Keystone Potential of Horses: A Contextual Framework

To synthesize the findings of this review and translate them into a structured mode of interpretation, a contextual framework is proposed to examine how domestic horses may express keystone-like ecological functions under different conditions. The framework supports context-sensitive evaluation of how ecological

effects emerge, vary, and can be shaped within managed systems.

The framework integrates five interrelated dimensions: ecological capacity of the system, stocking density and spatial scale, grazing management, behavioural ecology and spatial design, and adaptive monitoring. Each corresponds to mechanisms identified in rewilding and grazing literature as structuring ecosystem outcomes [Eldridge et al. 2020a; Mutillod et al. 2024; Osoro et al. 2012b]. Together, they capture the conditions under which horses may act as drivers of vegetation structure, resource redistribution, and cross-trophic interactions, as well as the circumstances under which similar processes may lead to degradation.

9. Structure and Logic of the Framework

The framework (Figure 1) is relational rather than strictly cumulative. The five dimensions do not operate as fixed thresholds, but as interacting components whose configuration shapes ecological outcomes.

Criteria 1-3 (ecological capacity, stocking rate and spatial scale, and grazing management) define the biophysical boundaries and intensity of herbivore impact. Criteria 4-5 (behavioural ecology and spatial design, and adaptive monitoring) influence how those impacts are distributed, expressed, and adjusted over time. This distinction is supported by evidence showing that ecological outcomes depend not only on herbivore presence, but on how grazing pressure is structured across space and time [Eldridge et al. 2020a; Kristensen et al. 2026b].

Contextual framework for evaluating the ecological expression of horses in managed landscapes

CRITERION 1 Ecological capacity	Does the system provide ecological substrate and opportunity for functional processes?	- High: Diverse vegetation and/or ecological features - Moderate: Simplified or uniform vegetation - Low: Predominantly artificial surfaces; minimal habitat
CRITERION 2 Stocking rate and spatial scale	Are stocking rates and spatial dimensions of a farm aligned with vegetation recovery and soil resilience?	- High: stocking rate and spatial scale matched to regenerative capacity - Moderate: uneven or inconsistent pressure - Low: Overstocking or confinement in sensitive areas
CRITERION 3 Grazing management	Is grazing structured to allow recovery, variation, and temporal dynamics?	- High: adaptive grazing enabling recovery and variability - Moderate: partial rotation or seasonal control - Low: continuous, unmanaged grazing
CRITERION 4 Behavioural ecology & spatial design	Do system design and management enable natural behaviour and spatial redistribution of impact?	- High: movement, herd dynamics, heterogeneous landscape elements - Moderate: partial movement or restricted variation - Low: confinement, artificial feeding, limited movement
CRITERION 5 Monitoring & adaptive response	Are ecological impacts monitored and management adjusted accordingly?	- High: adaptive management based on ecological feedback - Moderate: monitoring without consistent response - Low: no monitoring or feedback

High ecological expression Conditions support vegetation heterogeneity, nutrient cycling, and cross-trophic interactions	Context-dependent ecological contribution Ecological effects are present but uneven, localised, or temporally variable	Constrained or degrading outcomes Misalignment limits ecological function or leads to negative impacts
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Fig. 1 A contextual framework for evaluating the ecological expression of domestic horses in managed landscapes. The framework illustrates how ecological outcomes emerge from the interaction of five interrelated dimensions: ecological capacity, stocking density and scale, grazing management, behavioural ecology and spatial design, and adaptive monitoring. It supports context-sensitive evaluation of how equine-managed systems shape ecological functions across different environmental and management conditions. Outcomes are represented as gradients of ecological expression, ranging from strong functional contributions to constrained or degrading effects, depending on how these dimensions are configured. In this context, management is a primary mechanism through which ecological potential is realised or limited.

Different configurations of these dimensions give rise to different ecological trajectories. Where grazing pressure is aligned with regenerative capacity, spatial use is heterogeneous, and management is responsive, horses can contribute to vegetation heterogeneity, nutrient cycling, and cross-trophic support, precisely the functions consistent with keystone roles. For example,

grazing-induced increases in plant diversity and flowering resources have been linked to higher pollinator richness and activity in experimental systems [Garrido et al. 2019, 2022].

Where alignment is partial, ecological effects may still occur, but are likely to be spatially uneven, temporally limited, or contingent on specific conditions. This reflects findings that horse impacts vary across habitats, seasons, and management regimes, and may produce mixed or context-dependent outcomes depending on scale and response variables [Baur 2017; Eldridge et al. 2020a].

Conversely, where key dimensions are poorly aligned, similar mechanisms may lead to degradation, particularly in cases of limited ecological capacity, excessive stocking density, or lack of adaptive management. Evidence from riparian, alpine, and semi-arid systems shows that concentrated or unmanaged grazing can reduce plant cover, destabilize soils, and negatively affect dependent fauna [Beever et al. 2000; Eldridge et al. 2020b; Foster & Scheele 2019].

Importantly, this framework highlights that keystone-like functions are not restricted to extensive or idealized systems. Ecological contributions may emerge across a range of managed contexts, including agriculturally productive and peri-urban landscapes, provided that key dimensions are aligned in ways that support functional outcomes. In this sense, management functions as the primary mechanism through which ecological potential is realized or constrained.

By explicitly linking ecological mechanisms to management conditions, the framework extends keystone theory into domestic landscapes. It shifts the focus from asking whether horses are keystone species to examining how and under which configurations they may perform keystone-like roles. This aligns with rewilding literature, where horses are often described not as strict keystone species but as functional analogues of large gra-

zers, capable of restoring grazing-mediated processes under appropriate conditions [Cromsigt et al. 2018; Donlan et al. 2006; Naundrup 2015b].

In this context, keystone potential is not an inherent property of the species, but an emergent outcome of interactions between ecological processes, management practices, and broader socio-ecological conditions. Where these interactions maintain functional balance, spatial heterogeneity, and adaptive regulation, horses can contribute meaningfully to ecosystem functioning. Where they do not, the same mechanisms may lead to degradation.

10. Concluding Implications

This conceptual review has examined the potential for domestic horses to fulfil keystone ecological functions when evaluated through a functional typology derived from ecological literature. Across the four categories of resource providers, ecosystem engineers, dominant controllers, and mutualists, horses can express keystone-like roles as a function of their interaction with environmental conditions and management context. Keystone functioning is therefore best understood as an emergent property of socio-ecological systems, shaped by the alignment between species traits, landscape configuration, and human decision-making.

In highly anthropogenic landscapes, where ecological processes are already intertwined with human land use, this alignment becomes particularly relevant. The way horses are managed directly structures how their ecological effects manifest across space and time. As a result, equine systems can contribute to vegetation dynamics, nutrient cycling, and habitat heterogeneity in ways that are both ecologically meaningful and responsive to broader land-use objectives.

Horses are already embedded within agricultural and rural systems, where they influence land use, pasture dynamics, and landscape structure. These contributions remain largely unrecognised within existing agricultural and environmental policy frameworks, which are typically oriented toward conventional livestock systems. This creates a structural disconnect in which horses are present and influential, yet not systematically integrated into biodiversity or land management strategies.

For research, this highlights the need to move beyond species-level classifications toward context-based evaluations of functional roles in managed landscapes, including those that are agriculturally productive. Future work should therefore focus on identifying the ecological thresholds, spatial configurations, and management conditions under which horses contribute positively to ecosystem functioning, as well as the limits beyond which their impacts become degrading [Davies et al. 2014; Eldridge et al. 2020a].

For policy and practice, the findings suggest that domestic horses should be recognized as potential ecological actors within multifunctional agricultural systems, particularly in regions where land-use pressures, biodiversity objectives, and cultural land-use practices intersect. This requires closer alignment between ecological knowledge, agricultural policy, and equine management, ensuring that horse-based systems are not excluded from agri-environmental schemes, biodiversity incentives, or land stewardship programs [Cromsigt et al. 2018; Naundrup & Svenning 2015b].

Realising this potential depends on collaboration between researchers, land managers, and equine practitioners to define locally appropriate conditions, including habitat suitability, stocking density, behavioural expression, and adaptive monitoring. In this sense, the ecological role of domestic horses is not fixed, but co-produced through ecological processes, management de-

cisions, and socio-economic contexts, including the cultural and economic functions horses continue to fulfil in rural communities.

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The Quest for Harmony between Horses and Riders

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Abstract

A harmonious relationship between horse and rider requires that a horse is pain free, the rider is in balance, rider cues are clear and training is slowly progressive. The Ridden Horse Pain Ethogram (RHpE) was developed to facilitate recognition of pain-related gait dysfunction and comprises 24 behaviours. Most comfortable horses have a RHpE score of 0-4. A RHpE score $\geq 8/24$ indicates the presence of musculoskeletal pain. A causal relationship between pain and behaviour was verified by comparing behaviour and RHpE scores before and after removal of pain. Rider skill can influence gait quality in a positive or negative way, but a skilled rider cannot mask behavioural manifestations of pain. Rider morphology (height, weight and shape) can influence horse performance, through the influence of the magnitude and distribution of forces. Addressing this sensitive issue can be helped by discussion of objective information concerning equine behaviour and changes in a horse's thoracic dimensions during exercise. Correct training should not result in persistent alterations of behaviour manifest by an increase in the RHpE score. If progressive training results in elevation of the RHpE score this is a red flag signifying the likely presence of an underlying problem. Consistently low RHpE scores signify a comfortable horse that will be more receptive to learning than a horse experiencing discomfort. The competition performance of horses at all levels

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can be compromised by pain, emphasising the importance of pain recognition and appropriate management. Rider comfort and safety, a horse's trainability and performance are all optimised by a horse being pain free. Horses are trying to communicate with us through their behaviour. We all need to learn to listen to them and strive towards harmonious horsemanship.

Keywords

Musculoskeletal pain; lameness; oral pain; equine gastric ulcer syndrome; rider skill; rider morphology; tack fit.

1. Introduction

Harmonious horsemanship is reliant on the development of mutual trust and confidence between a horse and a rider, which requires understanding of how communication can effectively be achieved. A horse must be worked within the boundaries of its physical ability and should have freedom from discomfort, either as a direct consequence of musculoskeletal injury, oral pain or systemic pain, or secondary to either equipment used on the horse, or through the effects of a rider. The effects of a rider include their ability or otherwise to ride in synchrony with the horse, which relate to skill, fitness, balance and morphology; to apply and remove cues with appropriate timing and without coercion; to develop appropriate training programmes with an understanding of the biomechanics of movement patterns and muscle development patterns and the need for progression according to a horse's strength and maturity; to recognise that excessive repetition does not enhance learning and may result in premature fatigue, with enhanced injury risk; and finally the ability of a rider to differentiate between a horse's lack of understanding of what is being asked, the physical challenges of learning new movement patterns and behaviour induced by pain.

2. The Horse-Rider-Tack Interaction

The horse-tack-rider triad therefore has potentially complex interactions, but historically there has been a tendency for riders, trainers and coaches to blame unwanted behaviour on a myriad of reasons with the frequent use of anthropomorphic terms such as lazy, naughty, unwilling, uncooperative or grumpy. Alternatively, blame is attributed to coat colour and/ or sex—‘she’s typical of a chestnut mare’—without any foundation, and without the recognition that there are many chestnut mares that perform successfully at the highest levels. The term ‘conflict behaviour’ has been overused without considering why a horse may behave as it does [O’Connell et al. 2025]. There has been a lack of understanding of the adaptations of horses as prey animals. For example, the need for vigilance, rapid escape and the concealment of discomfort to disguise potential vulnerability. The senses of horses - sight, smell, hearing and touch - are all highly developed and different to humans and thus may influence a horse’s behaviour and responsiveness to a rider.

Training and competition regimes often do not consider the need for ample recovery time between strenuous exercise sessions to allow repair of microtrauma and to allow mental consolidation of learning. The concept of delayed onset muscular stiffness (DOMS), following unaccustomed use of specific muscle groups or repetitive eccentric muscle activity, is largely overlooked. The physical and mental needs of a horse, as a naturally free-roaming, constantly mobile, herd-based grazing herbivore are often ignored.

Failure to progress in training, or reduced quality of performance are often blamed on the horse and/ or the rider, with resort to more coercive methods of riding and training, rather than asking the question ‘why?’. It is in vogue to blame equine gastric ulcer syndrome (EGUS) as a major cause of reduced or poor performance or abnormal behaviour during ridden exercise, but

there is a growing body of evidence that musculoskeletal pain is the most prevalent cause of abnormal behaviour in ridden horses, with oral pain also of relevance, in addition to EGUS [Sykes and Lovett 2025].

3. Recognition of Pain-Related Gait Dysfunction

Conventionally lameness seen in hand has been considered the discriminator for the presence or absence of musculoskeletal pain and this has led to widespread failure to recognise pain-induced gait dysfunction as a cause of impaired ridden performance and abnormal behaviour. As a result, abnormal behaviours have become normalised and are often completely overlooked or ignored by both riders and trainers.

There is a slowly increasing recognition that there are many horses that appear non-lame in hand but have underlying pain-related musculoskeletal problems when ridden. However, horses show a variety of gait modifications to conceal pain and minimise lameness, including reducing range of motion of the thoracolumbosacral region [Greve et al. 2017], taking shorter steps, increasing duty factor (the proportion of stride time that a limb is bearing weight), alteration of limb flight and increasing body lean [Greve et al. 2018; Greve and Dyson 2020]. Many owners, riders and trainers have a poor ability to recognise signs of lameness. In a United Kingdom (UK) study of 506 sports horses in normal work and presumed to be non-lame, 47% were overtly lame, or had other pain-related gait abnormalities (e.g., stiff, stilted canter) [Greve and Dyson 2014]. In a Swedish study of 201 riding horses in full work and functioning apparently normally, 53% had gait asymmetry outside published normal values when evaluated trotting in hand, determined using inertial measurement units [Rhodin et al. 2016]. Analysis of 57 Danish dressage and showjumping horses in normal work revealed that 65% exhibited lameness either in hand on the lunge or ridden; 47%

showed lameness when ridden and 7% were only lame ridden [Dyson and Greve 2016]. In a UK study of 148 sports horses in regular work and assumed to be working comfortably, 28% were lame in hand, whereas 62% were lame when ridden [Dyson et al. 2022a]. Sixty per cent of horses showed gait abnormalities in canter. Riders and trainers often label performance problems experienced during ridden exercise as training-related, rider-related, or behavioural, or ‘that is just how the horse has always gone’ [McLean and McGreevy 2010; Hall et al. 2013]. Consequently pain-related problems often get insidiously, but progressively worse. Inability to perform satisfactorily may result in a decline in value of the horse and the standards of care [McLean and McGreevy 2010]. Improved pain recognition has the potential to enhance equine well-being. With appropriate investigation, identification of the cause of pain and targeted treatment and management there should be an improvement in a horse’s rideability, trainability, quality of performance, safety for a rider and comfort for a rider.

Many veterinarians have had little training in pain recognition and limited education in identification of low-grade lameness, especially in ridden horses, and therefore struggle to recognise musculoskeletal pain as a cause of poor performance. Owners are frustrated when they think that their horse has an underlying pain-related problem but are informed by their veterinarian that there is no detectable lameness and the problem must be ‘behavioural’. It would therefore be useful to have additional tools for owners, trainers, veterinarians and other paraprofessionals to recognise signs of musculoskeletal pain.

4. Pain and Behavioural Changes

Behavioural changes related to experimentally induced orthopaedic pain in horses have been described [Bussi res et al. 2008; Lindegaard et al. 2010], but the features described, such as pa-

wing the ground, are generally not applicable to ridden horses. The most recent advance in the recognition of subtle behavioural changes associated with pain is the investigation of facial expressions [Gleerup and Lindegaard 2016]. The spectrum of facial expressions exhibited by normal horses under non-ridden circumstances has been described in detail [Wathan et al. 2015]. An 'equine pain face' was developed to describe facial features of horses with induced limb pain at rest [Gleerup et al. 2014]. A Horse Grimace Scale, consisting of six features ('the ears held stiffly backwards; orbital tightening [the eyelids are partially or completely closed]; tension above the eye; the mouth strained with a pronounced chin; the nostrils strained with flattening of their profile; and prominent strained chewing muscles') was developed to categorise the facial expressions of horses undergoing routine castration, with or without perioperative analgesia, compared with horses undergoing general anaesthesia alone [Dalla Costa et al. 2014]. However, it has been suggested that posture changes and overall body tension in resting horses may confound results and that further research is required to test for reliability of 'pain grimace' measures [Hausberger et al. 2016]. The Equine Utrecht University Scale for Facial Assessment of Pain (EQUUS-FAP) was developed to assess facial pain expressions in horses with or without abdominal pain and used a three-point system from 'normal = 0' to 'maximal visible pain' for nine facial parameters, to derive an overall pain scale [Van Loon et al. 2015]. This system showed good reliability among four veterinary students and two veterinarians when looking at 10-minute video recordings of stabled horses.

An initial outline of a scheme to assess some aspects of facial expression in ridden horses has been described [Hall et al. 2014], however a detailed description of the results was not documented. Head movement, ear position, teeth grinding and lip movements were described in a study comparing two groups of young

horses (3.5 years of age) when first lunged under a saddle and first ridden at a trot following either a ‘conventional training approach’ or a ‘sympathetic training approach’ [Visser et al. 2009]. An ethogram of facial expressions of ridden horses (FEReq) was developed to differentiate lame and non-lame horses [Mullard et al. 2017, Dyson et al. 2017, 2018a], as a precursor to the development of a whole horse ridden ethogram.

It has frequently been recognised by the review of patient history that the presence of musculoskeletal pain in horses has long pre-dated its recognition, because owners and trainers have failed to recognise the significance of behavioural changes during ridden exercise [Girodroux et al. 2009, Meehan et al. 2009, Zimmerman et al. 2011, Dyson and Murray 2012, Dyson 2012, 2014, Parkes et al. 2013, Plowright and Dyson 2015, Barstow and Dyson 2015, Dyson and Rasotto 2015]. In horses some behaviours such as bucking [Barstow and Dyson 2015, Dyson and Thomson 2022], head tossing [Thomson et al. 2020] and rearing [Jonckheer-Sheehy et al. 2012] during ridden exercise have been associated with musculoskeletal pain, and classical headshaking has been associated with trigeminal neuralgia [Newton et al. 2000, Berger et al. 2008, Aleman et al. 2013, Pickles et al. 2014]. However, the association between other behaviours and pain, such as unwillingness to go forwards or being ‘above the bit’ (the head in front of a vertical position), has until recently been poorly documented. It was postulated that these relatively easily observed signs might be used to develop a ridden horse ethogram that could improve the ability of minimally trained observers to differentiate horses with musculoskeletal pain from those with other behavioural, training or rider problems.

5. Development of the Ridden Horse Pain Ethogram

The purpose of the initial study was to develop a Ridden Horse Ethogram and to determine whether it could be applied repea-

tedly by one trained observer (Repeatability Study, nine horses) and if, by application of a pain-related behaviour score, lame horses (n=24) and non-lame horses (n=13) could be differentiated [Dyson et al. 2018b]. We predicted that there would be some overlap in behaviour scores between non-lame and lame horses; and that overall, non-lame horses would have a lower behaviour score than lame horses. The initial ethogram encompassed 117 behaviours; nine horses were graded twice in random order by a trained observer using video footage. Overall, we found good correlation between the two assessments ($p<0.001$; $r=0.91$). Behaviours that were not consistent across the two assessments were omitted, reducing the ethogram to 70 behaviours. The modified ethogram was applied to video recordings of the non-lame horses and lame horses (Ethogram Evaluation). By the amalgamation of similar behaviours and by omission of those which had unreliable results in relation to lameness the Ridden Horse Pain Ethogram (RHpE) was ultimately developed. This comprises 24 behaviours, the majority of which were at least 10 times more likely to be seen in lame horses versus non-lame horses (Table 1). The maximum RHpE score for lame horses was 14/24, with a median score of 9 and a mean score of 9 (standard deviation [SD] ± 2), compared with a maximum score of 6/24 for non-lame horses, with median and mean scores of 2 (SD ± 1.4). We concluded that a RHpE score $\geq 8/24$ was likely to reflect musculoskeletal pain. It is important to recognise that each behaviour may have more than one cause; it is the total score that is relevant [Berger et al. 2022].

Table 1 The 24 behaviours of the Ridden Horse Pain Ethogram, adapted from Dyson et al. 2018b

1. Repeated changes of head position (up/down), not in rhythm with the trot
2. Head tilted repeatedly
3. Head in front of vertical ($>30^{\circ}$) for ≥ 10 s
4. Head behind vertical for ($>10^{\circ}$) ≥ 10 s
5. Head position changes from side to side repeatedly
6. Ears rotated back behind vertical (both or one only) ≥ 5 s
7. Eye lids closed or half closed for 2-5 s
8. Sclera exposed repeatedly
9. Intense stare (glazed expression, 'zoned out') for ≥ 5 s
10. Mouth opening $\pm$ shutting repeatedly with separation of teeth, for ≥ 10 s
11. Tongue exposed, protruding or hanging out, and/or moving in and out repeatedly
12. Bit pulled through the mouth on one side (left or right), repeatedly
13. Tail clamped tightly to middle or held to one side
14. Tail swishing large movements: repeatedly up and down/side to side/ circular; repeatedly during transitions
15. A rushed gait (frequency of trot steps $> 40/15$ s); irregular rhythm in trot or canter; repeated changes of speed in trot or canter
16. Gait too slow (frequency of trot steps $< 35/15$ s); passage-like trot
17. Hindlimbs do not follow tracks of forelimbs but repeatedly deviated to left or right; on 3 tracks in trot or canter
18. Canter repeated leg changes in front and / or behind: repeated strike off wrong leg; disunited
19. Spontaneous changes of gait (e.g., breaks from canter to trot or trot to canter)

20. Stumbles or trips more than once; repeated bilateral hindlimb toe drag
21. Sudden change of direction, against rider's directions/ cues; spooking
22. Reluctance to move forwards (repeated strong leg cues $\pm$ verbal encouragement); stops spontaneously
23. Rearing (both forelimbs off the ground)
24. Bucking or kicking backwards (one or both hindlimbs)

6. Application of the Ridden Horse Pain Ethogram to Horses with Musculoskeletal Pain and Comparison Before and After Diagnostic Anaesthesia: Verification That the Behaviours Are Pain Induced

To provide further evidence that the behaviours reflected musculoskeletal pain, and were not quirks of behaviour, video recordings of 10 lame horses acquired during ridden exercise were reviewed by a veterinarian who had received training in assessment of behaviour. The videos were acquired before and after provision of pain relief using diagnostic anaesthesia (nerve blocks) had resolved the baseline lameness and improved any gait abnormalities seen in canter [Dyson et al. 2018c]. Nerve blocks desensitise parts of the limb, so potentially remove pain. The assessor was unaware of the identity of the horses and whether nerve blocks had been applied. The mean and median RHpE scores before diagnostic anaesthesia were 12.1 and 12 out of 24, respectively (range 6-14). After lameness resolution the mean and median scores reduced to 5.9 and 5, respectively (range 3-10). The marked reduction in RHpE scores following resolution of lameness verified a causal relationship between musculoskeletal pain and the behaviours.

An additional study demonstrated that non-trained assessors from different professional backgrounds could differentiate between lame horses before and after diagnostic anaesthesia had abolished low-grade lameness (most frequent lameness grade 2/8; 0=non-lame, 1=just discernible, 2=mild, 3=mild-moderate, 4=moderate, 5=moderate-severe, 6=severe, 7=partial weight bearing, 8=non-weightbearing [Dyson 2011]) by application of the RHpE [Dyson and Van Dijk 2018]. In this study anonymised video recordings of 21 lame horses, ridden by professional riders in trot and canter before and after diagnostic anaesthesia had abolished lameness, were reviewed in a random order by a trained assessor and 10 untrained assessors. The untrained assessors had no experience in lameness assessment or evaluation of equine behaviour and included a personal assistant, a theatre nurse, several technicians and a British Horse Society Instructor. The RHpE scores of the 21 lame horses prior to diagnostic anaesthesia ranged from 3.6 to 11.6/24 (median 9; mean 9.1). After lameness and overall performance had been substantially improved using diagnostic anaesthesia, the RHpE scores were significantly reduced ($p<0.0001$) ranging from 1.6 to 8.5/24 (median 4.5; mean 4.2). There was good agreement of the mean total scores between the expert and the non-trained assessors, meaning crucially that less experienced assessors can utilise the RHpE effectively to differentiate between lame and non-lame horses.

These studies reinforced a causal relationship between pain and behaviours of the RHpE and confirmed that a RHpE score $\geq 8/24$ was likely to reflect musculoskeletal pain. Comparison of threshold values of 6,7,8 or 9 confirmed that a score of 8/24 had the highest accuracy [Dyson and Van Dijk 2018].

7. Application of the Ridden Horse Pain Ethogram in Real-Time

Our initial studies had used video recordings, but it was important to test whether the RHpE could be applied in real-time. It was also important to test whether veterinarians in general equine practice could correctly apply the ethogram. Ten equine veterinarians (the ‘test observers’) (after preliminary training) and an experienced assessor applied the RHpE to 20 volunteer horse-rider combinations performing a purpose-designed dressage test (8.5 minutes’ duration) in real-time [Dyson et al. 2020a]. The horses were in regular work, and capable of working ‘on the bit’. Video recordings of the test were analysed retrospectively by the experienced assessor. Lameness or abnormalities of canter, saddle-fit, the presence of epaxial muscle hypertension and / or pain and rider-skill-level were determined by independent experts. Sixteen horses were lame; 11 had an ill-fitting saddle; 14 had epaxial muscle hypertension and/or pain. The experienced assessor determined total RHpE scores of 3-6/24 for the non-lame horses; two lame horses scored 3 and 6; 14 lame horses scored 8-16/24. There was no significant difference in real-time scores and video-based scores for the experienced assessor. This means that the ethogram can be applied accurately during ridden exercise either based on real-time evaluation or assessment of good quality video recordings.

There was good agreement between the experienced assessor’s scores and the mean test observer scores. There was excellent consistency in overall agreement among raters (Intraclass-correlation 0.97, $p < 0.001$). The ethogram scores were significantly lower for the non-lame horses compared with the lame horses, whether assessed by the expert in real-time ($p = 0.017$) or using video recordings ($p = 0.013$) or by the test observers ($p = 0.03$). There was no significant effect of muscle pain, saddle-fit or rider-skill on behaviour. We concluded that the RHpE was

applied consistently in real-time by veterinarians with accurate differentiation between non-lame and most lame horses. The veterinarians felt empowered by using the RHpE.

8. Utilisation of the RHpE in the Field

One hundred and fifty horses underwent ridden exercise as part of an investigation of poor performance [Dyson and Pollard 2023]. We applied the RHpE before and after diagnostic anaesthesia $\pm$ change of saddle (the interventions). Fifty-two (34.7%) horses exhibited a bilaterally symmetrical short step length and/or restricted hindlimb impulsion and engagement. Fifty-three (35.3%) horses had episodic lameness; only forty-five (30.0%) horses were continuously lame. The median maximum lameness grade when ridden was mild, 2/8 (interquartile range [IQR]: 0,3; range: 0,4). Fifty-six (37.3%) horses had an ill-fitting saddle, which was considered likely to influence performance. The median RHpE scores after the interventions (2/24 [IQR: 1-3, range: 0,12]) were significantly lower than before the interventions (9/24 [IQR: 8,11, range: 2,15]) ($p < 0.001$). There was no correlation between the RHpE score and maximum lameness grade before diagnostic anaesthesia ($r = 0.09$, $p = 0.262$). We concluded that the absence of overt lameness does not preclude primary musculoskeletal pain. Gait quality in both trot and canter and performance can be improved by diagnostic anaesthesia, with substantial reductions in RHpE scores.

In addition, the presence of repetitive teeth grinding, an abnormal respiratory noise, delayed recovery of resting respiratory rate after exercise, and disproportionate sweating related to the environmental conditions, a horse's fitness, and the work intensity and duration were assessed before and after the interventions. All features reduced substantially after resolution of pain, reflecting a causal association. Moreover, many riders commented that the horses were more responsive to cues and were easier

and more comfortable to ride. These observations are of critical importance for riders and trainers to be aware of; horses that are described as lazy or unresponsive to cues often have underlying discomfort.

This study demonstrated that failure to remove all potential sources of pain will result in persistently high RHpE scores. Moreover, it highlighted the role of incorrect saddle fit as a contributor to discomfort and poor performance.

9. The Influence of Rider Skill on Ridden Horse Pain Ethogram Scores

Sceptics of the RHpE suggested that ridden horse behaviours could reflect rider skill, or lack of skill. To test this suggestion, 40 horses in regular work and assumed to be working comfortably were ridden both by the regular rider and a single professional rider in randomised order and performed an 8.5 minutes' duration dressage type test [Dyson et al. 2022b]. All tests were video recorded from standardised positions. Work quality (1-10) and rider skill (1-10) were scored by an independent expert. Two assessors independently applied the RHpE to all horse-rider combinations; when differences occurred the video recordings were reassessed to reach consensus. Overall, the total RHpE scores did not differ between the normal rider and the professional rider, although sometimes different behaviours were manifest. Overall, horses ridden by the professional rider had superior gait quality scores compared with the normal rider. We concluded that although a skilled rider may improve gait quality, they cannot conceal behavioural manifestations of pain. A horse can still communicate that it is experiencing musculoskeletal discomfort despite being well ridden.

10. The Influence of Rider Morphology and Size on Ridden Horse Behaviour

There has been considerable somewhat emotive debate about rider size and equine welfare, but a lack of evidence-based information that represented real-life scenarios. To provide some objective information we performed a prospective, cross-over, randomised trial in which six non-lame horses in regular work, 500-600 kg bodyweight, were ridden by four riders of similar ability, but different bodyweights (rider: horse bodyweight 10-12% [L=Light], $>12\leq 15\%$ [M=Moderate], $>15<18\%$ [H=Heavy], $>20\%$ [VH=Very Heavy]). Each combination performed a standardised dressage test of 30-minutes' duration [Dyson et al. 2020b]. Horses were evaluated throughout the test for the presence of lameness and the RHpE was applied in real-time. Tests were abandoned for $\geq$ grade 3/8 lameness or a RHpE score $\geq 10/24$ (assessed in real-time). The RHpE was also applied retrospectively to video recordings of predefined parts of the test in trot and canter by an experienced assessor.

All 13 H and VH rider tests were abandoned (temporary lameness, $n=12$; behaviour, $n=1$ [RHpE score 10/24 in canter]), as was one of 12 M rider tests (temporary lameness). For the retrospective video analysis there were significant differences among riders in the total RHpE score for trot (M vs H, $p<0.01$; L and M vs VH, $p<0.001$; H vs VH, $p<0.05$). The total RHpE score correlated positively with rider weight ($r=0.4$, $p<0.01$), although in only one of 37 tests was the total behaviour score ≥ 8 . The number of behaviours reflecting head position and facial expression were significantly higher with the heavier riders ($p<0.001-0.05$), whereas body markers (head and tail movement) and gait markers (behaviour, not kinematics) had non-significant changes. Statistical comparisons for canter could not be performed because of early abandonment of tests for the H and VH riders.

We concluded that rider morphology (height, weight and shape) may influence ridden horse behaviour, which may reflect discomfort. Distribution of forces is an important factor, which is influenced among other things by saddle fit for both the horse and the rider. It is not simply a matter of rider bodyweight: it depends how the weight is distributed. Inappropriate weight distribution can seriously impact a horse's gait. In addition, we measured thoracic dimensions at predetermined sites before and after exercise. For riders L and M thoracic dimensions increased, but for riders H and VH the dimensions decreased, reflecting compromised epaxial muscle function during ridden exercise. These observations can be used as a background to discuss whether a horse-rider combination is suitable, or whether equine welfare is potentially compromised.

11. Application of the Ridden Horse Pain Ethogram to Competition Horses and its Association with Performance

There are many horses with gait abnormalities that are in regular work, including competition. A question that arises is to what extent this might influence performance and is there any relationship between RHpE scores and performance? We demonstrated the potential power of the RHpE by its application to 172 horses warming up for the dressage phase of 5* three-day-events [Dyson and Ellis 2022]. Horses were each assessed for a minimum of 10 minutes during trot and canter. We classified horses subjectively as non-lame, lame or showing a stiff, stilted, restricted gait. The RHpE was applied by a trained assessor. Cross-country performance was obtained from the competition website; horses were classified as completing, eliminated or retired. Horses with a RHpE score of $\geq 7/24$ compared with horses with a score < 7 had higher dressage penalties and were more than twice as likely to be eliminated or be retired during cross-country. Those horses which completed the competition had significantly

lower finish places. We concluded that horses can pass mandatory horse inspections as fit to compete but show gait abnormalities when ridden, highlighted by behavioural changes. Gait abnormalities may compromise dressage and cross-country performance in some horses, although a causal relationship between failure to complete the cross-country and gait dysfunction cannot be proven.

Similar associations between higher RHpE scores and less successful performance were demonstrated in studies of 1,010 lower-level event horses (British Eventing 90, 100 and Novice levels; Novice level is equivalent to United States Preliminary level) [Dyson and Pollard 2022] and in 147 elite [Dyson and Pollard 2021a] and 64 sub-elite [Dyson and Pollard 2021b] Grand Prix dressage horses.

Equine welfare and performance could potentially be enhanced by recognising those horses that are uncomfortable and instituting appropriate treatment and management protocols. The target of harmony is then potentially achievable.

12. Practical Application of the Ridden Horse Pain Ethogram

It is important to observe horses from all perspectives (from in front, behind and the side), performing at least trot and canter and frequent transitions between gaits both going around the periphery of an arena and performing circles of 20 metres diameter in trot and canter and 10 metres diameter in rising trot to the left and right. Some horses show more signs consistent with pain in canter compared with trot or vice versa. However, pain may only be manifest in some horses doing more specialised and physically demanding movements (e.g., shoulder-in, collected trot half-pass, canter flying changes). A horse should be evaluated carrying out the full repertoire of movements it is expected

to perform. Observation of a horse working for approximately ten minutes should be adequate.

There is no correlation between lameness severity when ridden and the RHpE score. However, it should be borne in mind that if lameness is present in more than one limb it may not be graded accurately. There is also marked diversity of the occurrence of each of the 24 behaviours which is not necessarily related to lameness grade, but to physical musculoskeletal discomfort and perception of pain by an individual horse [Dyson et al 2018c,d, 2020; Dyson and Van Dijk 2018]. However, a RHpE score $\geq 8/24$ indicates pain, even if overt lameness is not observed. This is important when assessing a horse prior to purchase, evaluating a horse with a history of poor performance, and when performing routine assessments of sports horses to determine if performance could be enhanced. Early recognition of musculoskeletal pain, and accurate identification of the source(s) of pain, may enable successful treatment and thus improved performance, and minimise the risk of the development of secondary problems.

Training improved accuracy of interpretation of the RHpE [Dyson et al. 2020] and is strongly recommended. On-line training is available [Dyson 2019, Dyson 2025]. The definitions for each behaviour need to be recognised, understood and correctly applied. Several factors need to be assessed before application of the RHpE. In some horses the sclera (the white of the eye) is visible at rest in one or both eyes, so this observation should not be included in the RHpE score for affected eyes. If the canons of the bit are too wide, it may erroneously be concluded that the bit has been pulled through to one side, unless the bit is assessed before exercise. However, with knowledge of size of the bit, the behaviour ‘bit pulled through’ can still be utilised. If the footing is very deep this may induce hindlimb toe drag, which may not be observed on a better surface. The oral cavity should be evaluated

to identify any lesions that may contribute to discomfort, bearing in mind that there may be large individual variation in horses' behaviours despite similar lesions.

Some of the features of the RHpE could also be influenced by the type of bit and its use, the rider's skill and balance and the way in which rein cues are applied, knowingly or inadvertently. The mouth repeatedly opening with separation of the teeth and the tongue protruding are both significantly associated with lameness [Dyson et al. 2018b]. However, these behaviours could also be a response to an ill-fitting bit, a bit creating pain, oral lesions created by a bit [Manfredi et al. 2009, Cook and Mills 2009, McGreevy et al. 2012, Eiseriö et al. 2012], pain related to teeth, buccal ulceration or an ill-fitting noseband [Casey et al. 2013, Fenner et al. 2016, Doherty et al. 2017, McGreevy et al. 2017]. Repeated mouth opening or tongue lolling may prompt owners to introduce nosebands such as a crank cavesson noseband $\pm$ a flash, or to tighten nosebands rostral to the bit, which may contribute to discomfort. Although saddle fit did not significantly influence behaviour scores in one study [Dyson et al. 2020], an ill-fitting saddle does have the potential to induce abnormal behaviours that disappear if a better fitting saddle is used [Dyson and Pollard 2023].

13. Other Behavioural Changes Potentially Associated with Pain

There are features that may be felt by a rider: episodic shooting forwards, absence of rein tension ('not taking a contact'), symmetrically increased rein tension ('hanging on the reins'), asymmetrical rein tension ('hanging on one rein more than the other'), reduced range of motion of thoracolumbosacral region ('back stiffness'), tension, lack of hindlimb impulsion, and being on the forehand. There are also pain-induced features of gait that should be noted, such as alterations in canter (e.g., close tempo-

ral and spatial separation of the hindlimbs during the stance phase). Assessment of blink rate was not performed but may be useful for future studies. Increased blink rate has been linked positively to the amount of dopamine in the basal ganglia of the brain [Swerdlow et al. 2003] and dopamine levels may increase because of pain [Raekallio et al. 1997].

14. Learning New Movements

When a horse is learning a new movement, it may misunderstand the rider's cues or find it physically difficult due to the unaccustomed use of specific muscle groups, which may result in DOMS [Mizuma and Taguchi 2016, Szymanski 2001]. Conflict behaviour [Górecka-Bruzda et al. 2015, O'Connell et al. 2025] or so-called 'resistant behaviour' may be displayed, but persistence of such behaviours would not be expected unless there was an underlying pain-related problem. In the absence of pain and assuming correct training and adequate musculoskeletal strength and coordination a horse should learn progressively how to execute the new movement. Excessive repetitions should be avoided to avoid skeletal overload, and correct performance should be rewarded by breaks. However, a new movement, by alteration of biomechanical function, may highlight pre-existing subclinical musculoskeletal pain, requiring further investigation.

15. Influence of Horse Signalment and Work Discipline

The RHpE was developed in sports horses used in the Olympic disciplines in which the horse is expected to work with the front of the head in a vertical position, 'on the bit', when performing schooling-type work. However, other than head position, the ethogram is readily transferable for other types of work (e.g., jumping) and horses (e.g., Icelandic Horses [Dragelund Garcia et

al. 2023)), when working individually, although proximity of other horses may influence behaviour (for example, ears back).

The studies to date have encompassed horses from 3 to 18 years of age and no differences have been observed according to age. Breeds have included Thoroughbreds, Warmbloods, Arabs, Quarterhorses, Icelandic Horses, cross-breeds, cobs and ponies and small numbers of other types. A recent study confirmed a clinical impression that Friesians may be less reactive to visceral pain than Quarterhorses and Warmbloods [Flores et al. 2026]. In a second study Friesians were more tolerant of focal pressure applied to the metacarpal region than other breeds [Flores et al. 2024]. However, whether this stoicism translates to behaviour during ridden exercise has not been determined.

There appear to be misunderstandings about so-called ‘ma-reish’ behaviour. Abnormal behaviour during ridden exercise is often attributed to a horse being a mare and having an oestrus cycle, without acknowledging that mares only cycle through the spring and summer months and do so every three weeks, so a cyclical pattern of behaviour should be observed. In the few days before oestrus a mare may be slightly more sensitive to tacking-up and to rein pressure. However, mares become more tolerant during oestrus, to facilitate the approach of a stallion. There may be reduced sensitivity to leg cues, reflecting the mare’s tolerance, but no resistances. It is therefore challenging to relate abnormal behaviours of a mare during ridden exercise to oestrus cycles.

16. Behaviour During Tacking-up

If horses are being ridden, they must be tacked up. We observed an association between abnormal behaviours during tacking-up and ill-fitting saddles (for example, tight tree points), a rider sitting on the caudal one-third of the saddle or gait dysfunction during ridden exercise [Dyson et al. 2022c,d,e]. This presumably

reflects anticipation of pain associated with the tack or during ridden exercise.

Riders often attribute abnormal behaviour during either tacking-up (for example, so-called girth aversion behaviour) or ridden exercise to EGUS. In a recent prospective study of 80 dressage horses referred for gastroscopy, riders completed an extensive questionnaire concerning their horses' behaviours during general handling, tacking-up and riding [Frippiat et al. 2025]. Fifty-five horses had squamous and /or glandular ulcers, but 25 horses (control horses) had no ulcers. There was no difference in the frequency of occurrence of any of the behaviours in the control horses versus those with ulcers. A subset of horses with ulcers were re-examined within 24 hours of cessation of treatment with omeprazole and the questionnaire was repeated. There was no relationship between the recorded behaviours and the resolution or persistence of ulcers. The horses did not undergo orthopaedic examination, so the cause(s) of the owner observed behaviours was not determined. In approximately 33% of 37 horses with girth aversion behaviour, successful treatment of EGUS did result in improvement in behaviour, but the remaining horses had other problems [Millares-Ramirez and De Jeune 2019]. We can conclude that although girth aversion behaviour is associated with EGUS in some horses, there are often other causes.

17. Equine Gastric Ulcer Syndrome and Ridden Performance

A recent consensus statement from experts stated:

Many horses exhibiting clinical signs commonly attributed to gastric disease often have more than one disorder and other pain-based diseases, such as musculoskeletal disease, can mimic gastric disease (and vice-versa).

The paucity of data to allow a greater understanding of the potential for mimicry of clinical signs or interactions between musculoskeletal and gastric disease (both ESGD and EGGD) was highlighted as a critical void in the current knowledge base, as was the need for a holistic assessment of horses presenting with behavioural complaints [Sykes et al. 2025].

In a study of nine showjumpers being fed an excessively high starch diet (30%) and with gastroscopic evidence of EGUS a standardised exercise test was performed before (T0) and 12 weeks after (T12) changing to a low starch diet (11%) [Pineau et al. 2024]. The RHpE was applied to video recordings of the standard exercise tests. There was a reduction in total gastric ulcer scores between T0 and T12 ($p<0.01$) and in RHpE scores (T0 median 6/24, T12 median 3/24, $p<0.01$). There was a positive correlation between total gastric ulcer scores and RHpE scores ($r=0.867$, $p<0.01$). This suggests that EGUS can be a contributor to discomfort during ridden exercise. However, in many horses EGUS may be a comorbidity.

18. The Responsibilities of Riders and Trainers

It is crucial that all riders, coaches and trainers are aware of how a pain-free horse should perform and behave [Dyson and Pollard 2024]. Riders and coaches have primary responsibility for recognising signs that may reflect discomfort. Horses are trying to communicate, and riders and trainers must learn how to understand their language. If a horse is not performing optimally the question should be ‘why?’. Musculoskeletal pain, EGUS, dental problems and respiratory dysfunction should be ruled out. Application of the precautionary principle may improve equine well-being [Copelin and Merckies 2026]. Promotion of harmonious horsemanship and sports horse longevity should be the

ultimate goals. The RHpE can be used not only to identify horses that are experiencing pain, but also to recognise those horses that are performing comfortably.

Riders can find use of the RHpE empowering. They may have a 'gut feeling' that their horse is not right and seek advice from various professionals, including a veterinarian. If the horse is only assessed in hand and on the lunge and no lameness is seen and the horse is not evaluated ridden the veterinarian may conclude that there is no problem and suggest that the rider's problems reflect a training issue or the horse's innate behaviour. Use of the RHpE can provide vindication for the rider that the horse is experiencing discomfort.

19. Conclusions

In conclusion a persistently low RHpE score (0-4) indicates that a horse is comfortable. In contrast, a RHpE score $\geq 8/24$ is highly likely to reflect the presence of musculoskeletal pain in sports horses, although some lame horses score less than eight. It is important that those interacting in any way with or responsible for horses are educated about the signs that may reflect pain when horses are ridden (e.g., ears back, mouth opening, tongue out, change in eye posture and expression, alterations of head posture, unwillingness to go, crookedness, hurrying, changing gait spontaneously, canter dysfunction, spooking, and stumbling and toe dragging). If changes in behaviour and failure to respond to correctly applied cues could be used to alert riders of potential pain, then the wellbeing of horses could be significantly improved. Horses would not fall victim to harder training practices that could further aggravate musculoskeletal pain, or to a punishment-based training regimen to address an unwillingness to follow a rider's cues. This does require a change of mindset among some riders and coaches, but acceptance of these princi-

ples could achieve a much higher level of harmonious horsemanship than currently observed.

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Proud Creatures. The Bond between Man and Horse in Graeco-Roman Literature

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Quid de Philosophis dicemus disciplinarum magistris et artis bene
vivendi praeceptoribus Aristotelem (tamquam equum) foemina
ascendit, freno cohercuit et calcaribus pupungit.
(What shall we say about philosophers, teachers of the disciplines and
instructors of the art of living well? A woman mounted Aristotle (like
a horse), restrained him with the bridle
and spurred him with the spurs.)
Historia de duobus amantibus

If he was master of all knowledge
had to bear the yoke
of Love's pains,
how much more must we bear it,
we who are far less learned than he.
Lai d'Aristote

Abstract

The Graeco-Roman world devoted considerable attention to animals, which appeared as protagonists of epic narratives, figures in philosophical reflection, rivals in poetic discourses of love, and markers of alterity in historiography and doxography. Among them, the horse occupied a privileged position: an animal associated with prestige, aristocratic elites, warfare, and athletic competition. As such, it became deeply intertwined with the masculine sphere and frequently served as a metaphor for the unruliness and intensity of male desire itself. From the *Iliad*

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to Plato and later Aelian, the trope of the horse became a powerful device through which Graeco-Roman culture articulated narratives of love and sexuality—narratives that, more often than not, ultimately reveal themselves as discourses on power relations [Foucault 1985]. The ancient world formalized two distinct relational models: one based on parity, among subjects considered equals in lineage, strength, prestige, wealth, virtue; the other structured around an asymmetrical relation that simultaneously separates and binds this masculine pole to a heterogeneous category encompassing all subordinated subjectivities. Beyond the adult male citizen lay, indiscriminately grouped together, women, youths, slaves, and animals. This threshold exceeded the mere distinction between species, establishing instead a hierarchical divide that organized social and symbolic life along two parallel tracks: on one side, the mature male creature; on the other, all those figures constructed as minor or minoritized. The horse, as this study will argue, offers a particularly revealing lens through which to visualize and interrogate this structure.

Keywords

Horses; Plato; intimacies; human-animal divide; subjectivation.

1. Fables for Bestial Men

A fable suited to the coarse and bestial man—as Aesop (c. 620–564 BCE) himself defines it—is the one that recounts the genesis of human beings and animals, or rather, of certain humans and animals. A fable that runs roughly as follows: at Zeus’s command, Prometheus “had fashioned men and beasts”, ἀνθρώπους ἐπλασε καὶ θηρία (anthrōpous éplase kaì thería) [Aesop, Fable 515, Chambry 322 = Perry 240]. Yet too many beasts, compared to men, trod land, sea, and sky: such was Zeus’s judgment, to the point that the Titan, urged on by the god, was compelled to tran-

sform many of them back into human beings. For this reason, Aesop relates, even today some people have human features but a bestial disposition: first among them, the hypothetical “coarse and brutish man”, “σκαῖον καὶ θηριώδη” (skaion kaì theriōde), to whom the story itself, in closing, returns in a circular framing. One may think of Callimachus’ (c. 310-240 BCE) iambus 192, in which the human/beast dichotomy is reconfigured through that of language/voice: a narrative that tells how, in a distant past, all living beings—the inhabitants of sky, sea, and earth—shared a single word. In the account, it is only following an intervention by Zeus that this φθέγμα (phthégma) is taken away from certain living beings and assigned to humans alone, and thus it is that today some among us still possess an animal timbre: “Eudemus has the voice of a dog, Philton that of an ass (...); the wire-drawers have the voice of marine animals, while all [men], by contrast, are verbose and garrulous” [Call., Iamb. II, 192-192a]. A comparable motif appears as well in Horace’s (65-8 BCE) *Carmen* 1.16, in which the Titan Prometheus once again finds himself reworking the primordial clay by mixing together qualities drawn from everywhere—and the human being who still bears their traces may manifest an absurd, leonine rage (*Carm.* I, XVI, 13-16).

If, following Derrida [2009: 34], the fable is also a form of making-known and instructing—a domesticating, one might say, hastening toward what appears to be its outcome—such narratives seem to offer instruction in a zooanthropology that does not posit a clear and impassable distinction between the human being and other animals. The Greek world, moreover, has bequeathed to us a term, *zōa*, which does not overlap with our “animal”: the term *zōion*, dear to the Presocratic milieu, gathers together what we would define as all living beings, from human to plants, and is employed within a genealogical and phylogenetic inquiry whose principal interest lies in understanding how different compositions of hot and cold, high and low, give rise to

correspondingly different creatures [Li Causi 2008: 45, Zucker 2005].

In the Statesman, Plato (c. 428/427–348/347 BCE) quickly disavows an initial distinction between the two kinds of living beings (“the human race and a second one, a single class, comprising all the beasts” [263c]), invalid to the extent that any animal would make an equal and symmetrical distinction. These examples show us how the Greek world did not clearly recognize the distinction between animal and human that appears natural to us today. As also illustrated by the still Platonic mythos of the Republic, in which the soldier Er is granted the opportunity to witness the wondrous (“strange, pitiful, and ridiculous”! [620a]) cycle of reincarnations, some human beings may well return to life as animals, and vice versa. Here the *zōia*—a term that now excludes plants but names together animals, humans, and divinities—are lives in communication with one another, and the dividing line runs rather along the way in which life, whatever form-of-Life has been chosen, has been lived [Agamben 2014: 327]. To return to Aesop’s fable, it is always possible, for animal as for human, to conduct oneself rightly or to lapse into bestial behavior. The Timaeus radicalizes this fall, shifting the human/animal continuity onto an axiological plane: the demiurge originally created only the most perfect and pious animal of all, the male human, or *άνήρ* (*aner*); women and then the various species of animals would only arise later, when man, with his bestial behavior, would bring about a ‘worse’ cycle of rebirth. Animals and women, in short, would be material indicators of the obscuring of the first, perfect (and masculine) soul.

What one might call the species fault line is thus porous. Two other lines seem to be more interesting: one divides domestic beings from wild ones (significantly, the very first Aesopic narrative does not speak generically of animals, but of *thēria*, beasts, and *thēriōdēs* is the man addressed at the end), and ano-

ther one divides the masculine from the feminine, as Franco [2008] has clearly shown. These lines stand in a relationship that is at once clear and ambiguous: depending on context, the feminine may align now with the wild, as in the topos of the young maiden who burns with passion or possesses a light mind, and is therefore to be tamed and subjected under the yoke, now with the domestic.

In order to investigate the knot that both binds and divides man and animal, masculine and feminine, wild and domestic, this study situates itself within the narrative that the Greek, and later Graeco-Roman, world constructed around an animal that is co-essential to it and therefore traversed by and implicated in all these markers: the horse. A creature exceedingly dear to antiquity. Around the horse the ancient world structured both its system of warfare and its agonistic system—indeed, an entire social group was linked to the horse even in name, as with the Greek *hippeis* and the Roman *equites*, among the highest of the social classes in both political systems. Myths, sculptures, rites and festivals, funerary epigrams and treatises were dedicated to the horse. What might be considered one of the earliest biographies of the more-than-human world is also dedicated to the horse [Fögen 2017], specifically to Bucephalus, the extraordinary steed of Alexander the Great, a creature exemplary no less than its commander, whose story has been recounted by several authors. Without aspiring to reconstruct a linear history of representations of the horse, this work instead moves along a series of discursive nodes, in which texts of differing nature—mythical, philosophical, technical—render visible the historical conditions of possibility within which certain relations between humans and animals were thinkable and speakable. Given its intimate communion with the human world—and with a particular kind of human world, a masculine, agonistic, military world, a world of power for which the horse appears to have been indispensable,

and which this species has therefore often chosen to represent itself—the stories of horses we will encounter will be all the more eloquent and productive. From these, perhaps, we may begin to shed light on the human and animal world as glimpsed by antiquity.

2. Swift-Footed. Caring for One's Lineage

It may be useful to begin with one of the foundational texts of the Greek world, the *Iliad*; given its military setting, the Homeric poem provides numerous examples of multispecies communion between warrior and horse, and takes us onto unexpected terrain. Especially revealing is the formulaic language, examined with great care by Platte in his *Equine Poetics* [2017].

The weeping of Xanthus and Balius, the divine horses of Achilles, who shed tears over the body of the young Patroclus lying mangled in the dust, raises consternation in Zeus: having shared their lives with their mortal companion, they have grown sensitive to human pain and suffering to the point that the god himself must rouse them from their grief in order to set them in motion again and thus allow the charioteer Automedon to flee the raging battle. It may also be useful to note how Achilles, unlike other heroes, has three rather than two horses yoked to his chariot: together with Xanthus and Balius there is the mortal Pedasus, captured from Eëtion, who, though lacking such a lineage, shares with the two divine horses an equal swiftness [XVI 182-188]; a mixture that cannot but closely recall and mirror the semi-divine nature of Achilles himself, the human companion who, not by chance, is the only one capable of mastering them, as Odysseus too will acknowledge.

With their heroes, the horses of the *Iliad* share a formulaic epithet that illuminates their speed (swift are the horses, swift-footed the hero—an attribute not only of the son of Peleus but also, though less frequently, of Hector and Ajax), but also a form

of agency already evident in the mourning behavior of Balius and Xanthus. To this is added the notable capacity of horses to drink and savor wine: in Book VIII, Hector urges his horses to run as swiftly as possible, almost as a repayment for the “honey-hearted wheat [...] mixed it with wine for you to drink” [VIII 213-214]—a line that caused no small amount of perplexity among Alexandrian scholars, who struggled to understand this apparent inversion of the libation offered to the hero.

As was the case with cosmogonic myths, here too we see that humans and animals can be united by qualities that transcend species boundaries. What separates one creature from another is not a biological difference, but rather a matter of status; the warrior and the horse share both libations and speech. In this multispecies community or communion, the practices that unite the aristoi (“best” in terms of birth, rank and morality) also set these best apart from the inferior individuals, who are subject to them. In the Homeric world, honor and shame form an inseparable pair, common to both human and animal. Within this horizon, humans and animals can enter into “pacts” and “oaths” [XXII, 261-267]. However, they are always exposed to the possibility of being torn apart by a more powerful creature, whether a lion or an armed hero; it is force, and thus honor, and thus also shame, that regulate and discipline interactions.

And just as these noble men celebrated in the *Iliad* are concerned with their lineage and identify with it, a similar concern for bloodlines seems to be shared by animals—by certain animals, namely horses. In Aristotle’s later (and incredibly systematic) reflection, the horse is, of all species, the one that shows an exceptional concern for its own family group—to the point that among noble horses something that has the force of law regulates relationships:

A story goes that the king of Scythia had a highly-bred mare, and that all her foals were splendid; that wishing to mate the best of the young males with the mother, he had him brought to the stall for the purpose; that the young horse declined; that, after the mother's head had been concealed in a wrapper, he, in ignorance, had intercourse; and that, when immediately afterwards the wrapper was removed and the head of the mare was rendered visible, the young horse ran away and hurled himself down a precipice. (De Hist. An. IX, 631a)

Here, the foal displays a human caution in the moralizing sense, almost as if it had broken an animal taboo, or an equine taboo. Indeed, we see that the equine community is divided, just like the human one, into lineages, including divine ones: Olympus knows precious equine lineages, and thus also proper names otherwise rare for animals. Ares has a quadriga drawn by four immortal horses, whose breath is fiery blast and who have proper names: Ardor, Tumult, Terror, and Flame; the same is true of Helios, god of the Sun, whose swift chariot was drawn by Aethon, Eous, Phlegon, and Pyrois. Xanthus and Balius are sons of Podarge, imagined by Homer as a grazing mare, and of the wind Zephyrus; Arion, famous for his black mane, is born from the union of Poseidon and Demeter—according to Pausanias, Demeter was grazing in the form of a mare on the plains of Arcadia when Poseidon raped her, having likewise transformed himself into a horse.

And equine lineages, like human ones, may be graced by divine interference, which, by mixing in its own seed, improves and astonishingly elevates the stock. Aeneas, in his encounter with Achilles, presents himself through the traditional exposition of his ancestors, and thus also recounts the three hundred mares of King Erichthonius, his forebear—beautiful animals with whom the wind Boreas had fallen in love, and to whom he had made

beget twelve foals so swift and graceful that they could run upon ears of wheat without bending them, and race upon the waves without dispersing the foam of the sea: “There you have my lineage. That is the blood I claim, my royal birth!” [XX 278-279].

There thus appears to be a bond—always carefully monitored and regulated—between deities, humans and animals, arising from a deliberate and controlled intermingling of blood and lineage; that proximity which, as Lévi-Strauss recounts, made it possible for human communities to know “what animals do and what their needs are” [1962], and vice versa, as is shown by the fact that Xanthus, taking speech, can foretell Achilles’ tragic end.

3. Platonic Horses

The social distance separating the armed leaders from the rest of the demos seems, in short, to be greater than that separating them from their animals; after all, horsemen and horses share upbringing, living spaces and rhythms of life; they have been trained in a similar competitive spirit. Moving from epic poetry to philosophy, we shall not be surprised to find horses featuring prominently in another seminal work for the Western European world, namely Plato’s corpus. In Plato’s *Apology of Socrates*, the philosopher’s account of his teacher’s trial in 399 BCE, we see that Socrates presents himself as a μῦψ (muōps), that is, a horsefly, who has settled upon the city of Athens and its citizens as upon a well-bred horse. The horse is invoked here to represent the Athenian citizenry as a whole—a citizenry that traces its origins back to those mythical heroes and those legendary wars. And which now appears as a horse which, despite its noble lineage and distinctive qualities, or perhaps precisely because of so much inherent splendor, seems to have lost its edge and to be dozing, and must be roused from a dangerous torpor [30e]. In his reading of the Platonic text, Naas [2015] has forcefully emphasized how certain scholarship has focused on the insect and

its irritating bite, adhering to that strand of literature that concentrates on Socrates as an inconvenient, if not outright unpleasant and ugly (bestial?) figure, while entirely forgetting his counterpart, namely the horse that stands as the gadfly's natural and obvious foil:

The complementarity of these terms—Socrates as a gadfly, the city as a horse—not only establishes a strict parallelism between Socrates's entomic qualities and the equine qualities of Athens; it also sets these qualities in a mutually reciprocal relation with one another so that Socrates's gadfly-ism is dependent upon and derived from Athens's equinity and vice versa. To be sure, Socrates is a gadfly, but only insofar as Athens is a horse. [Naas 2015; p. 124]

Plato thus presents us with an Athens that identifies without reserve with its hegemonic class—an Athens that, for example, does not work. As we have seen, equine hierarchy speaks plainly of the ancient world's view of labor: the horse is not associated at all with artisanal effort, nor with any form of manual labor, but with military and agonistic prestige, and therefore also with command. Not by chance, Plato will imagine the working city, which is also a pre- or a-political city, as a city of sows.

And a horse that also possesses ideal conformation and impeccable pedigree, as Xenophon notes in *On Horsemanship*, is nonetheless essentially useless if it lacks the proper spur: a healthy competitive drive or, as Socrates proposes, a literal goad that keeps it active and ensures its soundness, where innate vigor has been lost amid that morass of multiple, unrestrained, and above all unexamined beliefs in which the city has become mired. Another elitist turn of the screw: in Socrates' words it is strange, if not unlikely, that "all could help in this" while "one alone corrupts" [25c]; rather, the opposite is true, and few are the true

experts in horsemanship capable of raising their own colts. Here another metaphor intervenes: Socrates is no longer an irritating insect but a tamer and educator of young horses, of those colts or *πῶλοι* (*pōloi*) who in the *Apology* are the citizens of Athens, and who in the *Republic* are the callow guardians whose temperament must not only be monitored but continually tested and thus perfected. As Origen (c.185 - c.253) will later confirm in *De principiis*, there is broad agreement that a certain form of rationality exists in privileged species such as hounds and war horses; animals in which, as in the human animal, there exists a certain freedom of action in responding to a stimulus coming from outside—independent, that is, of will and inclination [III, I, 2-4]. It is perhaps also for this reason that the young horse is the perfect image for speaking of the necessity (and above all the possibility) of educating the citizen, who must learn the care of the self and then teach it anew to the next generation of youth. If all beasts or *θηρία* (*thēria*) are undisciplined, the most undisciplined of all is the child, who shares with all other beasts a certain wisdom and yet “must be bound with many bridles, *χαλινοῖς* (*chalinòis*)” [808d-e]—a practice which, as Naas [2015; p. 129] shows, was not envisaged even for the wildest and most unmanageable draft or race animals.

Riding this metaphor brings us to the *Phaedrus*, where from the political dimension in the traditional sense—concerned with public and administrative discourse—one returns to that individuality which is its source and counterpoint. Here too philosophy must intervene to discipline an overly spirited horse, to bridle a desire that is still wild.

“Now you may notice that the breeding and nurture of living beings is sometimes the nurture of a single animal and sometimes the common care of creatures in droves” [261d], it is said in Plato’s *Statesman*. In the previous *Phaedrus* the analogy of the horse was deployed within the private dimension, and the pro-

cess of self-domestication was represented as a conflict between the charioteer and one of his two horses. While the white horse, benevolent and docile toward the one who drives the chariot, is capable of following his directions and desires, the dark horse embodies that excessive and irrationally concupiscent desire that enters the Platonic world with violence, bringing rupture, disharmony, and misfortune. The latter ends up consenting, in an almost permanent manner, to the guidance of the other two parts of the soul: it allows itself to be led and, indeed, actively places its own forces (in an apparent oxymoron) at the service of the discipline of logos, becoming a desire not suppressed but re-functionalized as human, ordered, and operative. This is an accord that, in Plato, occurs as it were “according to nature”: one of the many declensions of that more general order, at once psychic and cosmic, in which what is by nature destined to govern actually succeeds in doing so, not through mere coercion, but through the concord and adherence of that which, by nature, must be governed and directed.

In Anacreon (c.573 - 495BC), the erotic impulse is such that it is the beloved—installed directly within the poet’s soul—who becomes the charioteer of that soul: “Oh boy with the girlish glances, I’m pursuing you but you don’t even notice, not knowing that you are the charioteer of my soul” [Anacreon 360]. The same occurs in Plutarch’s *Amatorius*, where the beloved is once again at the reins of the chariot and its two horses. Even in the Athenian marriage ritual the witness, or *πάροχος* (*pàrochos*), is said to be the companion charioteer: together with the groom, he is carried by the horses toward the beloved.

The image of the Phaedrus, in comparison with that literature, perhaps tells us more explicitly of that ambiguous vision of the human being and the animal, never definitively separated from the anthropogenetic gesture of care, understood as self-domestication. A gesture in which some human beings as well as

some animals are more expert than others, as we have seen. The possibility of living a good life, for the soul poised on the threshold of reincarnation, appears to be given in all possible cases, and it is the task of the virtuous soul to seek out correctness in every form-of-Life, animal or human alike. The Phaedrus tells us, even more so, of that complex fault line previously indicated, which cuts in ways at once different and similar across animals and humans, the tamed and the wild, the masculine and the feminine. Here it is desire that drags the human being back toward the threshold of irrational animality, and it is through constant and painful training that this otherwise wild sphere is disciplined, ever ready to escape the surveillance of logos, as happens, for example, during sleep, when reason loosens the reins and desire once again moves the soul in a disordered manner, driving it to dream of coupling with the mother, with the god, and again with the animal [Rep. 571b2-572d9].

4. Species Trouble

We have seen, through the Iliad and Plato, that the horse lends itself to becoming the epitome of that discourse on the non-human animal that is culturalized, rewritten, or first and foremost read in light of the laws and norms of the human community, that is, of the free men. We will have noticed, in all of this, that we have tended to talk about a horse that is also male. What about the feminine? Let us think of the Thracian filly to which Anacreon compares the desired maiden; here the parallel between the young filly and the young woman serves as a manifestation of a not merely juvenile recalcitrance (we have seen that Socrates too is like a horse-tamer, with those colts who are the Athenians), but for a vexing and wholly feminine nature: “I would skillfully throw the bridle on you and grabbing your reins turn you around the racetrack. Now you graze in the meadows

and nimbly skip around in your play, for you do not yet have a skillful rider” [fr. 417].

These images—like that of Alcman’s (7th century BCE) Agesichora, “a strong, victorious, loud-footed horse” [45-49]—play upon and linger over the comparison between thick hair and mane, for which Greek has a single word, *χαίτη* (*chaîte*). Even more importantly, they play upon the imagery of riding and upon a relationship of insubordination prospectively understood as destined to be extinguished, “by nature”, by the yoke of marriage. That yoke which, even in the non-human animal world, files down the excesses of a libido that is nonetheless bestial and feminine (it is unclear which of the two elements comes first). As Aelian (c. 175–c. 235 CE), a philosopher, naturalist and antiquarian active in Rome during the Severan dynasty, recounts in his encyclopaedic work *On animals*: “I have heard that mares are the only animals which when pregnant allow the male to have intercourse with them. For mares are exceedingly lustful, and that is why strict censors call lecherous women ‘mares’” [IV, 11]. Gender differences are not imposed a posteriori upon discourse about animals, but constitute one of its structuring axes. The control of desire and domestication as subordination distribute human and non-human bodies according to profoundly gendered logics: maidens and mares are united by a common lust, that animalistic voluptas which only a male can tame—an irrational voluptas that, as the story of mares teaches us, is nonetheless permitted to run free, so long as it remains within the legitimate perimeter of familial and matrimonial bonds.

To fully understand the role of feminine and animalistic desire (or the feminine desire as animalistic), it is useful to consider the discourse on sexuality produced by the ancient world, which Plato had already taught us to study in its most spontaneous and unrestrained form: the dream. We are aided by the *Dream Catalogue* by Artemidorus, a scholar from Ephesus who lived in the

2nd century CE—a work that Foucault himself analysed in the third volume of his *History of Sexuality* [Foucault 1986]. In his treatise on the interpretation of dreams, Artemidorus classifies gestures and activities according to the degree of interaction inherent in them, including sex—or rather, penetration—among those acts that concern primarily the agent, rather than the nearby person whom the act may also involve or engage. These are, in short, solitary dreams, those that concern acts which “do not regard one’s neighbors but only the subjects themselves and are not done in regard to or through others”, such as “speaking, singing, dancing, fist-fighting, competing, hanging oneself, dying, being crucified, diving, finding a treasure, having sex, vomiting, moving one’s bowels, sleeping, laughing, crying, talking to the gods, and the like” [I, 2]. From this perspective, even dreaming of a sexual relationship with an animal is not in itself a marked event in any sense, despite being classified as an act against nature (together with sex with a deity and with oneself): everything depends on the active or passive role assumed by the dreamer in the dream. “If one dreams of uniting with an animal, if one mounts it, some advantage will follow [...]. If, instead, one is mounted, violent and painful acts are to be expected. After such dreams, in fact, many even died. So much for sexual matters” [I, 80]. In short, the animal is placed in that axis of passivity in which the feminine also dwells. Every competent dream interpreter knows, as Artemidorus writes in his guide to dreams, that the horse, in sleep, “signifies a woman” [IV, Pref. 8].

We still find ourselves in that ancient world in which the mere act does not yet define identities and inclinations, nor is it defined in relation to genus or species. Each act must rather be read within the broader context of a dimension of power and of relations of subordination, which are at times natural and at times no longer so. The relationship between active and passive, between the insertive partner and the one who is penetrated,

must—or in any case should—mirror the relations of dominance and subordination in light of which the polis and later the urbs are constituted [Halperin 2003]. The Hippocratic Oath, for example, imposed—and still imposes—upon the physician the duty to “abstain from all intentional wrong-doing and harm, especially from abusing the bodies of man or woman, bond or free”. The gender of the desired object is not relevant within this equation—and, in Artemidorus, neither is the species. That the lover dreams, in place of his beloved, of a foal or a mare is “a good sign”, insofar as this animal “obeys the reins and the rider well (...), takes pride in its own beauty and carries the one who rides it” [I, 56].

5. Vectors of Desire

Some elements, however, are fundamental in the logic of desire—given the profound relationality and syntacticity of the Graeco-Roman environment, gender and species as categories may not mark bodies, or at least not be as relevant as the relationships of subordination that divide these singular bodies. Here too, horses can help us take a few steps in such a complicated world of licit and illicit. In the chapter devoted to the nature of horses [VIII, 64] of his *Naturalis Historia*, Pliny (23/24-79 CE) tells us of Semiramis’ special love interest: the Queen was enamored of a special horse with whom she had sexual relations. Pliny recalls this report without any astonishment, mockery, or disgust: horses are animals of noble spirit and great docility, and perhaps for this reason they also escape the stigma of bestiality (especially if practiced by women). And perhaps this anecdote is to be read within that historiography of elsewhere as a marginal and marvelous or monstrous place, inhabited by other creatures and governed by other *ethē*: that elsewhere which is the Egyptian city of Mendes in Herodotus—who is the first to report an episode of bestiality—a region in which a woman was accustomed to have

“publicly” or “openly” sexual relations with a goat [Hdt. 2.46.4], relations designated by a largely unmarked verb, suitable also for human relations: “to mingle”, μίγνυμι (mìgnumi). A dimension that diminishes the “monstrousness” and “exceptionality” of the event.

Traditionally, cases of women who fell in love with an animal—first among them Pasiphaë and the bull—were indeed condemned, but not so much or not only by public and literary disapproval as by clear signs: they gave rise to monstrous hybrids, a shame to be suppressed and hidden away in remote and inaccessible places such as the mythical labyrinth or, more simply, in the distance of the forest, a place at the margins of civilization, in the most literal and manifest sense of the term. This is what happens with Polyphonte, who yields to animal lust by lying with a bear and receives from it monstrous offspring, embodiments of a stigma that drives the entire family to flee into the woods, without ultimately being able to avoid a violent death. Here the wild/tamed dichotomy once again works to the detriment of women, portraying them as victims of impulses that are decidedly non- or pre-human, rendering them (also physically) close to the irrational animal: as the adage has it, *ton homoion phasi tōn homoion* [J. E. Robson 2002; p. 75], birds of a feather flock together. While it is also to be condemned, it is not surprising that a woman, especially an unmarried woman, should fall in love with a beast; and perhaps this is also why the gods disguise themselves as animals to seduce or kidnap young girls. It is these creatures that share a similar attitude, because they are both “lesser” beings compared to that adult male, ἀνὴρ (aner), who is the perfect life-form described in the Timaeus.

More common, and decidedly less discreditable, is that the vector of desire proceeds in the opposite direction, from animal to human: it is natural, so to speak, that even the animal falls prey to that otherworldly beauty sung by Plato in his examina-

tion of *antérōs*, a divine beauty that is obviously always masculine. Such is the case of Aelian's account of Sokles and his horse, likewise introduced in his encyclopaedic *On animals* by comparison with the almost legendary relationship between Alexander and Bucephalus:

How Bucephalus bore himself to Alexander is a story that is current everywhere and would give me no pleasure to repeat (...). So[k]les, about whom not many seem to know, was an Athenian who was esteemed, and indeed was, a comely boy. Now he bought a horse, handsome too like its master but of a violently amorous disposition and with a far sharper eye than other horses. Hence it conceived a passionate love for its master, and when he approached, it would snort; and if he patted it, it would neigh; when he mounted, it would be docile; when he stood before it, it would cast languishing glances at him. These actions already savored of love, but were thought pleasing. When however the horse, becoming too reckless, seemed to be meditating an assault upon the boy, and tales about the pair of a too monstrous nature began to circulate, So[k]les would not tolerate the slander, and in his detestation of a licentious lover sold the horse. But the animal could not bear to be separated from the beautiful boy and ended its days by a rigorous starvation [6.44].

This account does not spare a certain ambiguity, first and foremost lexical—an ambiguity that we have seen to be central to many appearances of horses in literature—Sokles “mounting”, ἀναβαίνοντος (*anabainontos*) the enamored horse—and indeed seems consciously to take up the entire grammar of Plato's *Phaedrus*. The characterization of the good horse as compliant or εὐπειθής (*eupēithēs*) recalls an entire tradition of epithets that lite-

rature has reserved for its finest equines [cf. Xen. Mem. 4.2.25; Smp. 2.10; Zadorojnyi 2023], but cannot fail to bring to mind also the white and obedient steed that draws the Platonic chariot, a modest and “composed”, εὐπειθής (eupeithēs) creature whose sense of shame restrains it from rushing toward the beloved [Phdr. 254a]. It is, however, the wanton horse that returns to the foreground when the impatience of the equine companion is recounted, no longer able to restrain its own physicality, despite the attainment of a condition of mutual love-like closeness. This is what convinces the young man to rid himself of the animal “in his detestation of a licentious lover” or ἐραστὴν ἀκόλαστον (erastēn akòlaston) [27–28]. Whether Sokles decides to sell the horse solely because of the latter’s exuberance, thus withdrawing from an unwanted desire, or rather because he is compelled by the rumors that spread suspicion and slander around the pair, as S. D. Smith notes, is unclear:

But there is ambiguity in this last participial phrase, for in addition to conveying the ground of belief on which Sokles is acting, the particle ὥς may also convey a pretext for selling the horse. But such a pretext, generated only by the gossip of the Athenians and allowing Sokles to maintain his dignity, paradoxically ends up confirming the suspicions about the sexual nature of the boy’s relationship with his horse: had it not been for the rumors, Sokles would have kept quiet and continued to enjoy potentially illicit pleasures with his equine companion [2017; p. 202].

The play with Platonic lexicon, still light here, is drawn to its extremes in the parallel account involving a young boy from Iasus and a dolphin (a pair that is in certain respects equally vivid in the ancient imaginary, again on account of the dolphin’s marked intelligence, including emotional intelligence, within the varied

human-animal cosmos). While the reciprocity between Sokles and the horse is only implied (more or less overtly), the affection binding the dolphin and the boy from Iasus is explicitly named as that *anteros*, the divine reciprocated love, which led to their ruin by arousing not disapproval but outright envy on the part of the gods [NA VI, 15].

Another interspecific love destined for ruin in *On Animals* is that of a man and his young mare, “the finest of the herd, as it might have been a beautiful girl, the loveliest of all thereabouts” [IV, 8]. Initially hesitant, the man, Aelian recounts through Eudemus, attempts to restrain himself, yet then yields to his desire and “dares” to consummate the “strange union”. The outcome is tragic—the justice exercised to restore order to the two bizarre lovers is this time entirely animal: the colt born of the mare, seeing the man mount its mother as only a “tyrannical master” could have done (a further striking overlap of power and carnal love), kills him: “And it even went so far as to watch where he was buried, went to the place, dug up the corpse, and outraged it by inflicting every kind of injury” [IV, 8]. That familial love which had led Darius the Persian, Aelian again recounts, to choose mares as his steeds, so that they might flee danger with a speed all the greater insofar as their desire to reunite with the foal left at home was stronger, here seems to intervene to reinforce another principle as well: that of the non-mixing of *genos*, the careful preservation of lineage that leads to the banning, on the animal side as well, of interspecific coupling.

The ancient world, as Franco [2017] has noted, employs the same vocabulary to describe affection among humans and animals: words such as *φιλία*, not necessarily marked, or *ἔρως* (*érōs*) and *ἐπιθυμία* (*epithumia*), *amor* and *desiderium*, closer to an explicitly erotic dimension, which can often be read as metaphors. What is absent, and thus perhaps speaks most clearly, is a lexicon of kinship and family: “Words such as ‘son’ and ‘daughter’ or ‘fa-

ther', 'mother', and 'parent' were never employed to designate the pet and its owner. The closest terms to be found are τρόφιμος [trophimos], *alumnus* (both meaning 'nursling', '[foster-]child') and τροφεύς [trophēus] ('rearer', 'breeder', 'foster-father')" [2017: 24]. Human souls may perhaps choose a new life in animal guise, as Orpheus becomes a swan in the myth of Er, or as Odysseus in some literary accounts will live a new life as a horse; and particularly virtuous animals may be granted the chance to tread the earth as human beings, whose equals they have proven themselves to be. What cannot occur, however—and what these stories testify—is that this very virtue might be contaminated, plunging women and men, animals and human beings alike, into that passion which is only, and crudely, bestial.

6. Conclusions

Through its multiple appearances, the horse emerges as one of the animals most intensely interrogated by ancient thought, not so much for what distinguishes it from other living beings as for its peculiar proximity to the human. A proximity that is neither innocuous nor accidental, nor simply already given and natural, but one that was gradually constructed by binding humans and their horses within an articulated structure of command, education, and control. Mythical, philosophical, and technical narratives show how the horse was constantly placed within asymmetric relations, both with the human being and with other non-human animals: an exemplary species in a world that was, on the whole, little concerned with the theme of species as such, this creature is called upon to collaborate and participate in a common life oriented by a masculine power—to which it perhaps also participates and collaborates, insofar as it has first been corrected, guided, and often restrained through a more manifest violence.

In this sense, the horse may become a privileged lens through which to grasp the tensions internal to the construction of the

human in the Graeco-Roman world: tensions that run through bodies and desires, sexual difference and social hierarchies. Its figure, which this tradition nonetheless returns to us with care and heartfelt attention, albeit through certain stereotypical forms, allows us to follow the ways in which ancient culture thought continuity among forms-of-Life, without however renouncing the drawing, within that continuity, of clear ranks, relations of subordination—and at times even sharp and brutal exclusions. A fault line that divides, as we have seen, not between humans and other animals, but between some humans and some animals and all the others; a fault line that the first group may indeed cross, joining and mingling with that Other which is woman, which is the child, which is the beast, and which is the slave, with the mortal risk of contaminating one's own, of adulterating one's own *genos*, a risk run both by the best humans and by the best animals. Hence the horse may be either brother and companion (Achilles together with Balios, Xanthus, and Pedasus; Alexander and Bucephalus) or object of desire (maidens who are sung as young fillies, and vice versa). What it cannot be is both at once. Explicit in this sense—above all in his silences—is Aelian, when he tells us that Sokles, the only figure in that tableau capable of fully subjectivizing himself as an adult man, rather than responding to the love of his beloved horse, can do nothing other than rid himself of the animal. The narrative nevertheless insists on marking the cost of this removal, embodied in the death from excessive grief of the horse that cannot survive the loss of its human love.

It is perhaps in this sense that the medieval fortune of the tale of Aristotle in the *Lai* may be read as a final counterpoint, even though it requires a leap forward of centuries. In this little fable, which begins to circulate with great success in the thirteenth century, the Stagirite—immediately after reproaching his unruly disciple Alexander, who spends too much time in the

company of his beloved—at the request of his own beloved allows himself to be ridden just like a steed. The philosopher, now mounted, bridled and prodded by spurs by the beautiful young woman, becomes the figure of that very passion that ancient thought recognized within itself and attempted to discipline, without ever being able—nor willing—to extinguish it definitively. If the horse has been an animal of election for thinking order, command, and the right measure of desire, it is probably also because through it there continued to loom the possibility of reversal and of a fall into a bestial condition: of the human being brought back—on all fours—into proximity with the brute animal and its brutal passions. If such bestial stories exist, Aesop taught us after all, it is because behind the animal that we therefore are, that composed “political animal endowed with speech”, ζῷον πολιτικόν τὸν λόγον ἔχον (zoon politikòn ton logon èchon), there always remains lurking a more feral θηρίον, which loves these stories.

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What Endings Reveal: Humans, Horses and Impermanence in the High Himalayas

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Abstract

Drawing on multispecies ethnographic research in the Himalayan valley of Limi in north-western Nepal, I examine human-horse relationships as seasonal, discontinuous, and shaped as much by separation and death as by cooperation and care. Horses in Limi move between periods of free-ranging life on the Tibetan plateau and periods of close engagement with a Buddhist agropastoral community, producing relations that unsettle stable distinctions between ‘wild’ and ‘domestic’ and highlight the contingent and situational nature of human-horse coexistence.

Focusing on the end of life, in this article I explore how ageing, mortality, and the practical constraints of care generate morally charged situations in which attachment, obligation, and limitation intersect. In Limi, horse death is not an exceptional rupture but an integral part of multispecies life, revealing the ethical and cosmological horizons within which decisions about care, endurance, and letting go are made. These moments are shaped by Buddhist moral frameworks, shifting agropastoral livelihoods, and broader pressures of outmigration and environmental change, as well as by the logistical and emotional difficulties of sustaining interspecies relations in a rapidly changing world.

Situating these ethnographic insights in conversation with ethological and equitation science approaches, as well as with

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comparative experiences from other equestrian contexts, I argue that dominant Euro-American frameworks of horsemanship tend to privilege training, welfare, and continuity of care, while leaving the ending of relationships comparatively undertheorised. By foregrounding death and relational endings, I show how human-horse relations are made and unmade through practices of care, constraint, ritual and situated ethical decision-making.

Keywords

Multispecies ethnography; more-than-human relations; horses; death and dying; care; Himalaya; Buddhist ethics.

1. Introduction

When I first read the announcement for this paper, I was excited. Not only did the call focus on equines, but it gravitated around ‘ethologically based shifts in horsemanship’, showing interest in new findings in ‘equine/human relations’ from different disciplines and perspectives. Coincidentally, this is precisely what I have been working on for my PhD in Anthrozoology. Over the past six years, I have been carrying out a study on human-horse communication and communication establishing practices (often referred to as ‘starting’, ‘backing’, or ‘taming’) in a Himalayan valley in Northwestern Nepal called Limi, and where the Pampa meets Patagonia at the feet of the Argentinean Andes, in a place called Cari Lauquen. For this, I have conducted an ethologically informed, recursive, multisensory, multispecies ethnography across the two sites, placing interlocutors in dialogue through audiovisual materials and developing a collaborative triangulation and

comparison of different horses, horse-related humans, and ‘horse worlds.’² This article draws on that work and its findings.³

As I tie together my thesis that questions different ideas of horse behaviour and relevant claims to universality, I realize that I—like many other researchers on human-horse relationships (see below)—have left little space for the most certain universal element: death. Putting ethological literature in conversation with other worldviews and knowledge traditions, alongside my own pre-fieldwork experiences in other equestrian cultures,⁴ reveals the end of human-horse relationships as a consistently complex and morally fraught phenomenon—one that this article examines further. Although my research took place in and across two sites, this piece focuses on one: Limi valley, a place that is epistemolo-

² I use the term “horse worlds” to refer to situations where humans and horses are connected physically and/or theoretically. “Horse worlds” includes what some would call human cultures that involve horses, also known as “equestrian cultures” [Adelman and Thompson, 2017], and cultures composed of horses themselves [Hurn, 2012].

³ In terms of methodology, I refer to Hayward [2012] and Jackson’s [2018] attention on multi-sensoriality, multispecies ethnography as described by Kirksey and Helmreich [2010], multi-sitedness as elaborated by Marcus [1995], and comparison according to Candea [2018].

⁴ I have worked with horses in Austria, Italy, Spain, the United Kingdom, Chile, Peru, Argentina, and Nepal in a variety of roles including polo groom, excursion guide, trainer (and assistant), instructor (and assistant), equine therapy assistant, herder (and assistant), and maintenance (both of horses and on horseback).

gically, ontologically, and morally independent from ethological literature or ‘ethologically based shifts in horsemanship’.⁵

My experiences with horses and horse behaviour were initially grounded in a predominantly European context,⁶ which draws increasingly on ethology to inform equine welfare, and equitation science to shape equestrian practices. These are valuable guidelines [McGreevy, 2007], however, they also include clear ideas about who/what a horse is (including cognitive and motor capacities, sentience and sociality), horse purpose (including the justifications of human management and behavioural shaping), and the conditions in which human-horse relationships unfold (including problematic wild/domestic binaries). Questioning this literature’s assumptions challenges its applicability and usefulness across disciplines and contexts. Contemporary approaches to equitation and equestrian cultures in Europe⁷ tend to have a deterministic understanding of the world [McLean 2026], making them methodologically strong, but sometimes overreaching in their implicit and contestable metaphysical claims. An important common assumption is the aim and potential of a functional human-horse relationship as being between

⁵ To bridge linguistic differences Tibetan terms are given as pronounced in phonetic approximation and where relevant in Wylie transliteration.

⁶ I began riding at age eight in English style, this turned into a work-for-ride exchanges at a riding school and polo club in the United Kingdom. I worked there as polo groom during my teenage years, switching between styles of riding but remaining with a UK setting. During school holidays and after graduation I worked with different horses and equestrian disciplines in my hometown in Italy.

⁷ I speak of Europe from my personal practical experience, though literature and personal communications indicate that this is the same in North America and Australia.

healthy individuals.⁸ This has led to a body of knowledge and research that focuses (and excels) on training and maintenance, but pays significantly less attention to death and endings of human-horse relationships.⁹ When considering what I (thought I) knew within contexts shaped by different onto-epistemological assumptions, care [van Dooren 2014; Coulter 2016] and particularly end-of-life care [Hurn and Badman-King 2019], became central sites of overlap, negotiation and sometimes tension. In European equestrian contexts, like in Limi, horse death is often an uncomfortable topic, being seldom talked or thought about unless necessary. As Hurn and Badman-King [2019] discuss when using nonhuman cases to consider and compare human euthanasia and palliative care, there is a difficult vagueness over what a ‘good death’ (euthanasia) is,¹⁰ the thresholds of suffering deemed ‘acceptable’ to support or end another’s life, and the practical implications of care at a critical and challenging point in life and relationships. Horses, in this light, require particularly difficult decision-making, perhaps for their (frequently) very close relationship with humans and the way this forces us to consider

⁸ Literature also deals less with differently abled horses and humans, though increasing attention is being paid to the uses of horses in therapy for differently abled humans [Matamonasa-Bennett, 2015; Jones McVey, 2025]. This, however, is tangential to this piece.

⁹ Exceptions to be made here are veterinary literature (that focus on the causes of end-of-life rather than the care that surrounds it) and zooarchaeological literature that focuses on horse burials [Mrva-Montoya, 2013; Argent 2010; 2016a, 2016b, 2018; Oma, 2016; Eason, 2025].

¹⁰ “Etymologically, euthanasia means to die well or have a “good death” (deriving from Greek eu, meaning well or good, and thanatos, meaning death)” [Hurn & Badman-King 2019: 144].

and interrogate concepts of sentience.¹¹ This paper sustains that endings are not marginal but constitutive of human-horse relationships in Limi, like everywhere else in the world. Situated within peoples' cosmological and moral horizons, they reveal much about both humans and horses and the values that drive their actions, as well as the practical necessities and constraints they must negotiate.

2. Horses in Limi—‘The Land In-Between’

Limi is a valley in today's Northwestern Nepal. It is framed by high peaks and glaciers that border to the north with Ngari, a prefecture of the Tibetan Autonomous Region (TAR) averaging 4500 m above sea level within the People's Republic of China (PRC). It lies at the juncture between the Tibetan plateau and the Himalayan mountains. Limi gives name to the biggest ward¹² of Namkha Rural Municipality, in the Karnali province of Nepal. This province borders a narrow strip of Lumbini province to the south, leading onto the hot and humid Indian plains that average

¹¹ Recent movements in Italy (Il consumo di carne di cavallo in Italia, e la proposta per fermarlo, 2026) and the 2020 legal action taken in Greece (Greece bans horse slaughter, no date) to illegalize horse slaughter can be seen as a reflection of this and a societal shift into what Bulliet [2005] calls an increasingly “postdomestic” world, in what Orlando defines a “post-Caballine Age” [Orlando, 2025: 3]. As discussed in my thesis [Diemberger forthcoming], however, this is not the same everywhere in the world, and techniques of distancing, disconnect, and “detachment” [Yarrow et al. 2015] are often used in contexts where horses are sent to slaughter or culled. Regardless of practical realities, horses seem to have a special place in the imaginaries of humans across the globe and throughout history.

¹² A ward (Nepali: वडा) is the smallest unit of local governments in Nepal.

100-200 m. A drastic elevation change in a narrow north-south trans-Himalayan corridor (the Chinese and Indian borders are 200-250 km away from each other), indicates vertical surrounding landscapes, as well as huge diversity in temperatures and environments. Like the Nepali province to which it belongs, Limi is dissected by a river—Limi River—a fundamental and life-giving tributary of the Karnali River [NRCT 2019]. Toponyms here highlight a strong link between places and water, including the very name of Limi as the land between rivers,¹³ as well as between the north and south of the Himalayas. At the source of these waterways are the ice and snows of Mount Kailash and Manasarovar Lake, sites sacred to Hindu, Buddhist, Bon, Sikh, and Jain religions among others.¹⁴ These watery arteries connect the high plateaus to lowland plains, providing life to an enormous diversity of species, being a sacred resource to different groups of humans with varied understandings of the world, and ena-

¹³ The name Limi (Wylie: *Sle mi*) “can be translated as ‘the Land in-between’. The villagers explain that the meaning of the name comes from the first settlement in the valley, located on a piece of land between two rivers [...] the ‘betweenness’ in the name refers to its geographical location, it is suggestive also of a number of other socio-cultural, religious, political, environmental and economic relations and processes”, which Hovden [2025: 2] discusses throughout her book on Limi and its community.

¹⁴ Mount Kailash, for example, is seen as the spiritual abode of Lord Shiva, the cosmic axis or Mount Meru, the abode of the sky goddess Sipaimen, the site where Guru Nanak Dev met with the Siddhs (yogis) during his third Udasi (preaching journey), and the place of liberation for Rishabhanatha.

bling centuries of trans-Himalayan trade of which Limi's humans and horses were, until recently, an important part.¹⁵

'Limi Valley and its high alpine pasturelands represent a unique high-altitude ecosystem where rich biodiversity intersects with centuries-old cultural traditions' state Kusi and Werhahn (2025), scholars who have been working in the region's ecology, biodiversity, and conservation for over 12 years. Amongst these 'centuries-old traditions' are the human-horse forms of coexistence that I have been studying.

Limi's inhabitants include the "Himalayan wolf (*Canis lupus chanco*), snow leopard (*Panthera uncia*), wild yak (*Bos mutus*), kiang (*Equus kiang*), Tibetan fox (*Vulpes ferrilata*), Tibetan gazelle (*Procapra picticaudata*), Tibetan argali (*Ovis ammon hodgsoni*), blue sheep (*Pseudois nayaur*), steppe polecat (*Mustela eversmannii*), Pallas's cat (*Otocolobus manul*), Eurasian lynx (*Lynx lynx*), Tibetan brown bear (*Ursus arctos pruinosus*), black-necked crane (*Grus nigricollis*), Himalayan marmot (*Marmota himalayana*), various species of pika (*Ochotona* spp.), and many more" [Kusi and Werhahn 2025]. These species, and many others, share the landscape in a range of interconnected ways (more below), however, humans and horses work together in a particular co-created form of "collaborative multispecies survival" [Tsing 2015].¹⁶ In this, horses spend the summer months grazing, moving, and socialising on the high-altitude pastures that lead onto the Tibetan plateau. They are largely undisturbed

¹⁵ Limi's position in these trade connections was mainly in the northern areas [Hovden 2025: 10-14].

¹⁶ They do so also with domestic yaks (*Bos grunniens*) and their hybrids with domestic cattle (*Bos taurus*), though this relationship is different in ways that are beyond this article to cover (see Bate 2022a & b). It is worth mentioning here that female yak are called *diū* in Limi, and that hybrids are called *dzo*.

by humans (especially if/when they cross closely monitored international boundaries that are restricted to humans) and have significant advantages in terms of vulnerability to predators—for example, the open spaces are more favourable to horses’ sensory perceptions assisting predator detection and escape.

As the seasons turn, the days shorten and temperatures drop significantly (below -20 degrees Celsius), bringing with them heavy snows and glacial winds.¹⁷ When this begins, horses direct themselves towards human settlements, where for many generations, they have spent winters grazing near the villages during the day, and on the ground floor of human houses at night. The main role of humans in this is to open the gate that lets horses back into the village areas once the barley has been harvested, usher back any stragglers that they can (and want to) reach, and provide food for horses who come home.¹⁸ During the spring, horses and humans participate in agricultural work and ritual celebrations (more below) that require full community in-

¹⁷ There are exceptions such as unseasonably heavy snowfall that killed many nonhuman inhabitants of the valley in 2015. A Limi herder told me of finding forty-or-so dead kiang and hundreds of dead yak after the snow had melted. In less extreme cases, I was told by my 2022 research assistant, Tenzin Norbu Lama, that Limi’s horses “know how to find places where the wind blows strong, and they can dig through snow to reach the grass”.

¹⁸ Horses are usually fed a barley mash called bangma every evening, with the possible addition (depending on availability and necessity) of other ingredients like turnips, pea-like legumes, used tea leaves, the leftovers after making the local barley beer called chang.

volvement and collective efforts.¹⁹ Surviving in Limi is not easy either for horses or for humans, and the only way to do it is through a strong and numerous multispecies community.



Fig. 1a-b Horses entering and leaving their houses in Dzang village.

Limi valley has three villages: Til (4000 m), Waltse (3660 m), and Dzang (3930 m). There are ruins of a fourth [see Fig. 2], Tsham-do (4300 m), that lies at the eastern end of Limi valley, leading to the high pastures and Tibet. Remains of abandoned fields show that this was (once upon a time) home to some of the highest barley production in the world. The historical origins of these ruins remain uncertain: as it is considered the ancestral site for the other villages, it must pre-date them and therefore go back to sometime before the 11th century, i.e., presumably the imperial period (6th-9th century CE). It might be linked to Zhangzhung, a

¹⁹ Including gendered labour roles (for both humans and nonhuman) in fertilizing and ploughing the fields; clearing and fixing kilometres of irrigation canals, collecting ‘good grass’ to feed the working horses and dzo, gathering and transporting firewood, and feeding the workers.

pre-Buddhist polity incorporated into the Tibetan Empire in the 7th century [Hovden 2025]. Kyunglung Ngulkar—a site currently identified by some scholars as a likely Zhangzhung capital [Al-denderfer & Moyes 2005; Li & Huo 2005]—lies approximately two days’ ride to the northwest of Limi, and the whole area was certainly part of the Zhangzhung kingdom. There are many stories as to why the fourth village of Limi was abandoned [Hovden 2025], but neither a date nor a reason is entirely clear. What is clear, however, is that the future of the other villages is also becoming increasingly uncertain.



Fig. 2a-b The ruins of Tshamdo, the fourth village of Limi valley.

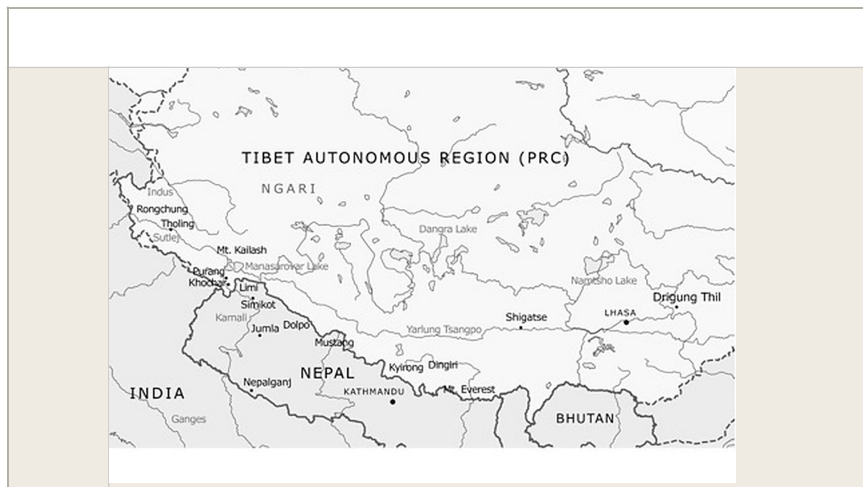


Fig. 3 A map of Limi within the wider context: western Nepal bordering the Tibetan Autonomous Region. Courtesy of Astrid Hovden.

During my stay, the hardship of traditional agropastoral lifeways, education-driven-outmigration, diversification of income, and new challenges related to a changing climate (like Glacial Lake Outburst Floods, unseasonal heavy snowfall, new zoonotic diseases) have contributed to the depopulation of the valley.²⁰ Although numbers have always fluctuated in Limi valley due to trade, labour, pilgrimage and religious education [Hovden 2025], a general decline in recent years and the ‘abandonment’²¹ of

²⁰ E.g., Vallangi [2025] in terms of the 2025 GLOF that wiped away many of Til’s barley fields. In terms of new zoonotic diseases, I was told of a recent outburst of lumpy skin disease (a highly contagious viral disease transmitted by blood-feeding insects) that decimated the bovines. This was attributed to the arrival of new insects to higher altitudes.

²¹ See Shahi’s article: Villages in Limi Valley are turning into ‘ghost settlements’ [Shahi 2025].

Dzang village during my fieldwork show that the Limi community is currently undergoing critical transformations. These are also reflected in the equine population, who are no longer bred nor bought.

Like Limi's humans, Limi's horses have always come and gone seasonally, sometimes for years at a time, and sometimes bringing new friends with them. As such, providing exact numbers for the horse population is as difficult as for the human population. During my last stay (spring 2025), there were roughly 100 horses (mostly gaited geldings averaging 13 hands and with solid coat colours)²² across the three villages. They are the remains of a much larger population and the last traces of a famous equestrian tradition.

Although Limi is in Nepal, it is part of the Kailash mandala [Lama 2002] within the Tibetan sacred geography. Limi's close links to Tibet are visible in the equestrian equipment, the local embodied traditions, language, and rituals. These are similar also to those of Mustang/Dolpo, another area of important trans-Himalayan movements on the Nepal/Tibet border, famous for its equines and equestrian culture [Craig 2008, 2016; Maurer 1995, 2001].

Limi was strongly tied to Tibetan horses and horse-related practices through the nomads on the Chang (the plateau to the north) and Purang, the capital of Purang county in Ngari prefecture. This was a site of equine and equestrian trade, to which Limi supplied highly valued horses well into the second half of the twentieth century [Goldstein 1975, cited in Mulmi 2022: 28-29], as well as Limi-crafted equestrian equipment [Hovden 2025]. Parallel north-south trans-Himalayan corridors were linked by east-west routes on the Tibetan Plateau and tied Limi into an ancient and vibrant Tibetan equestrian "community of practice" famous for its

²² Grey, bay, chestnut, dun, and black (in order of frequency).

high-quality horses and rich oral, textual, material, and practical history. The far-reaching temporal and geographical connections of this network are visible, for example, in Tibetan horse manuals, which include references to an international medical gathering promoted in the 8th century by the Tibetan emperor Trisong Detsen, in which the origin of Tibetan horse medicine is attributed to Drugu Semdo Ochen, a physician from the Turks who participated in this gathering.²³ Limi was evidently not only connected to Tibetan horse culture, but also to the equestrian traditions of the silk roads. These links may have predated the arrival of Buddhism to the area.

The arrival of horses, like the arrival of humans in Limi is (for now) shrouded in mystery. It is plausible that human-horse relationships first came to Limi valley through the so-called “Southern Silk Road”²⁴ and possibly before the Tibetan empire (certainly during and after it), through movements and migration patterns that emerged from ecologically driven trajectories of herding mobility [Frachetti et al. 2017] as well as military conquest. Mt Kailash occupied a pivotal role in this web of pathways along which not only traders, armies and herdsman travelled with their horses but also monks and pilgrims. This was the “Kailash Mandala” of which Limi became part when these routes enabled the arrival of Buddhism.

Manuscripts on hippology and hippiatry provides links between Limi and Tibetan equestrian traditions through Lotsawa Rinchen Zangpo (958-1055 CE), known as “the great translator” throughout Tibet, Tibetan-speaking, and Buddhist communities. He was a very important figure in the “second wave” of Buddhist

²³ According to Zur mkhar ba’s medical history and other sources, see Martin [2011] (2016: 117-143) and Martin 2017.

²⁴ Southern in terms of going south of the Taklamakan desert. See Wood 2002.

sm in Tibet [Gardner 2011] and spent many years in Limi, establishing Waltse's Rinchen Ling monastery (now considered one of the oldest Tibetan Buddhist monasteries in Nepal) among performing other transformative actions in Limi's valley and community.²⁵ Lotsawa Rinchen Zangpo also translated horse-science manuscripts by the Indian "father of veterinary sciences" [Garg 2021] Śālihotra.²⁶ In Meadows' work [2013] we see the same passages in Persian texts called *Farasnama-i Hindis*.

Lotsawa Rinchen Zangpo's Buddhist tradition, the Kadampa, was superseded in Limi by the Drigung Kagyu sect, which later became the dominant form of Buddhism in Limi [Hovden 2025]. This shaped the Buddhist and Buddhified cosmologies that have influenced and framed Limi humans' relationships with horses and other nonhuman animals, both in theory and practice. The protector deity of Limi is the same as the Drigung Kagyu sect: Abchi Chökyi Droma—a female divinity often depicted (especially in Limi) astride a blue horse.

²⁵ See Hovden 2025.

²⁶ Hippological and hippiatric manuscripts included in the Tibetan Canon and referred to in Western Tibetan horse manuals such as: "Gyi ling rta'i spyad bo dang bcos ka ra brgyud dang bcas" from the Tucci collection, Rome, Vol. 1277, Filibeck catalogue (2003: 428-429), courtesy of Michela Clemente.



Fig. 4 Photographs of Abchi Chökyi Droma and her blue horse's statue (residing in Waltse's Rinchen Ling monastery) are found on many altars of the villagers' houses.

3. Limi's Horses in a Buddhist Perspective

Limi's history frames contemporary relationships between humans and horses in a Buddhist understanding of the world, wherein both are sentient beings (*semchen*) with a principle of consciousness (*namshe*). Together with all other sentient beings, horses (and humans) are trapped within a cycle of continuous birth, death and rebirth in the six realms of existence—depicted as the wheel of life—also known as *Samsara*.²⁷

Principles of consciousness reincarnate into one of the six realms according to the law of karma, or in other words, accor-

²⁷ The six realms of *Samsara* (Wylie: *khorma'i druk khor*) are divided into the higher three: Gods (Wylie: *Lha*), Demi-gods (Wylie: *Lha ma yin*), Humans (Wylie: *Mi*), and the lower three: Animals (Wylie: *Dud gro*), Hungry Ghosts (Wylie: *yid dwags*), and Hell Beings (Wylie: *dmyal ba*).

ding to cause-and-effect that is determined by their conduct in previous lives. Each of these realms entails different types of suffering and provides more or less favourable conditions to reach the final goal of enlightenment, which means escaping this cycle of rebirths and inherent suffering. These conditions are generally determined by the reflexive and cognitive capacity of the principle of consciousness in that form. Being reborn into the human condition (mi) is said to have enough suffering to want to escape samsara and enough cognitive abilities to do so, making it the ideal condition to reach enlightenment. Though this reflects a specific type of exceptionalism to the human condition, it does not place individual humans above other animals in terms of their ultimate nature and entanglements in samsaric conditions. In this, human cognitive and/or motor skills are considered contingently above those of other animals in the samsaric sense of their “relative truths” and understandings of the world. This highlights the differences of conditions in a way that resonates with von Uexküll’s concept of *Umwelt*. Moreover, all animals (humans included), are likely to have been mother, father, or in any case kin in a previous life, so harming other sentient beings is like harming a relative. This attitude therefore involves moral principles that reflect kinship relations, or using Marshall Sahlins’s [2011] term, a “mutuality of being”.

Any individual’s suffering, like their sensory perception of the world, is seen as part of their karmic consequence, and the act of ending a life is considered a great demerit (*digpa*) and should be avoided. Such principles can be hard to square with pastoralists’ livelihoods and decisions over animals in desperate situations—and when violence is unavoidable it is rationalised as part of Samsara’s suffering. These tensions resonate across diverse ethnographic and cultural contexts. For example, Natasha Fijn describes moments of dissonance in Mongolia (where Tibetan Buddhism exerts a strong influence) when her own impulse towards the care

of a solitary duckling diverged from those of the people with whom she was living [Fijn 2011]. Comparable dilemmas also emerge in European settings, albeit grounded in markedly different onto-epistemological frameworks, such as decisions surrounding the euthanasia of terminally ill animals. As Hurn and Badman-King [2019] explain, regarding the multi-faith community at Skanda Vale in Wales who ground their beliefs in a “syncretic fusion of Hinduism and Buddhism” while operating within the legal and veterinary governance frameworks in Wales:

Every moment of life enables an individual to work out his or her karma, to relinquish his or her material attachments, find spiritual enlightenment and know God. To deprive individuals of this opportunity is extremely harmful, as it has direct consequences for their spiritual evolution and future reincarnation. So, in this context, [...] killing animals by lethal injection or other humane means is not euthanasia, as the killing is not necessarily in the best interests of the individual concerned and therefore cannot constitute a good death [Hurn & Badman-King 2019: 150].

As elaborated in their paper, these perspectives can come into tension with divergent values, priorities, and assumptions as well as with culturally and contextually situated understandings of what constitutes ‘care’.²⁸

In Limi, to be born as a human requires accumulating positive karmic merit, something that is helped by treating others (regardless of species) with compassion, this includes not killing

²⁸ Including what Van Dooren [2015] calls “violent care” (especially pertinent to conservation-related deaths) and Palmer’s observations on euthanasia grounded in ‘care’ for human health and safety [2006].

them, even when a death may be considered a form of ‘care’ in other perspectives.²⁹

According to Limi’s Buddhist understanding of the world, horses and humans—like all sentient beings—are intimately connected, bound through cycles of reincarnation. Yet their interactions, both with one another and with other species, unfold within the causal entanglements of Samsara. In Limi, insects in the soil break down the manure of horses, humans, and bovines;³⁰ barley grows from this substrate and in turn nourishes those same beings who have suffered together in the work to plant it; a horse, yak, or dzo may be attacked by a hungry snow leopard; if the snow leopard is successful their remains are then consumed by maggots and other animals. Humans, too, may offer their bodies to vultures and others through sky burial, entering this same cycle of consumption and transformation. These processes are not separate events but moments within a continuous samsaric unfolding that binds together beings and environments. In this sense, Buddhist cosmology can converge (and indeed does so in the case of some ‘green’ Buddhist movements) with ethological and ecological perspectives: across these knowledge systems, death is not an interruption of life, but one of its conditions.

²⁹ Examples of “violent care” were problematic in Buddhist communities in other areas of Nepal where glanders disease (an infectious and life-threatening disease that mainly affects horses, donkeys, or mules caused by the bacterium *Burkholderia mallei*) was present. A Nepali veterinary surgeon at the NGO Animal Nepal shared the challenges she had faced regarding euthanasia: “you are not only euthanizing a horse, you are killing a source of living and a family member” she told me before my trip to Limi in 2024.

³⁰ The cycle, uses, and importance of yak dung can be found in Feiglstorfer’s [2026] article ‘Yak Dung: Circularity In the Material Culture of Tibet’.

4. Humans and Horses: A Special Relationship

The *namshe*, or “principle of consciousness,” refers to that aspect of a being which reincarnates—a quasi-spiritual continuity across lifetimes, which sometimes underpins not only moral principles of engagement in a general sense but also relationships. Within this context, a Tibetan saying I encountered across Limi, Tibet, and in other Tibetan-speaking communities (as well as in Tibetological literature),³¹ appears to complicate the understanding of all beings distributed within the six realms of existence: *ta kyi mi sum namshes chig*, “horses, dogs, and humans share the same (kind of) principle of consciousness”. By placing horses and dogs alongside humans in this way, the phrase situates them at the threshold between the animal and human realms, suggesting a form of continuity and ambiguity not extended to other species. As I argue elsewhere [Diemberger forthcoming], this attribution may reflect the particular intimacy of interaction and communication that characterizes human relationships with these beings. This common Tibetan saying brings together humans, horses and dogs, justifying a sort of exceptionalism and unsettling the perceived distinctiveness of human and nonhuman realms of existence. Within this privileged category, horses occupy a particular position—they can mediate between the realm of the humans and that of the more-than-human, they can also have extraordinary powers and develop an intimate relationship with certain humans.³²

Horses in Limi are important parts of households—important social and administrative units known in Limi as *grong pa*. As Hovden explains, there are three types:

³¹ E.g., Maurer 2019.

³² A type of relationship known as *ngoshe* in Limi. See Diemberger forthcoming.

The “large household” (grong chen or grong pa), whose members claim to be descendants of the original settlers and own the largest estates; the “small household” (grong chung or mi re, “individual [household]”), formed after a brother has split off from the grong chen and has inherited a part of an estate; and finally the “single woman household” (bom btang or mo rang, lit. “woman self”). These households are normally established by unmarried women who have split off from their brothers’ estates and own little or no land. [...] In Limi, the “male head of the household” (kha rgan) and his wife, the “matron” (ma rgan), have the formal responsibility for the household [Hovden 2025: 84-85].

This is the customary setting which was applied in Limi for many generations (but things are rapidly changing as I will discuss below): each household has at least one horse. These horses are a symbol and embodiment of their households’ lungta (literally, “wind-horse”), often translated conceptually as good-fortune/wellbeing/energy [Karmay 1993].³³ As such, horses are central to Limi’s rituals and celebrations, being protagonists in annual horse races and equestrian performances dedicated to household

³³ Bellezza [2026: 27], referring to Stein [1972: 223, 224] defines it “a celestial force synonymous with the horse itself”.

(or clan)³⁴ gods and territorial deities, as well as in acts of veneration for the Limi and (Drigung Kagyü Buddhist lineage)'s blue-horse-riding protector deity, Abchi Chökyi Dronma. In Limi, ideas of ownership (“owner” translating as “dagpo”) are intrinsically connected with notions of reasonability, guardianship and interconnectedness, and the cosmological and symbolic significance of horses and human-horse relationships in Limi is reflected in actual care practices. In this, horse health and wellbeing are of great importance. Horses are carefully attended to when in proximity of humans and meticulously groomed for celebrations.³⁵ When household gods are celebrated, pieces of auspiciously coloured cloth bearing prayers are plaited into their manes and sewn into their tails. Some horses are also adorned with protective amulets. Horses and their conditions are an index of status and wellbeing for households, clans, and therefore, villages. In this context, horses had not only great practical importance for work and transport, but also extremely high symbolic significance.

³⁴ As noted by Hovden: “The term ‘clan’ has been subject to considerable discussion (see for instance Fjeld 2022: 14ff and 49ff). In Tibetological literature it has been used to translate *rus pa* (‘bone [line]’) or the more general *rgyud pa* (‘lineage’ or ‘succession’). The term can be interpreted in different ways according to context. I [like Hovden] use it according to Tibetological convention to refer to the ideology of patrilineage, but (as several scholars have pointed out) the Tibetan terms *rus pa* or *rgyud pa* do not necessarily imply kinship relations. In Limi they say that whereas clan membership may still hold significance in certain contexts, the patrilineage has since long been watered down.” [Hovden 2025: 42-43].

³⁵ I was proudly shown the few mud scrapers in the village (bought in China or India) that were used on these occasions.

Horses not only reflect the sense of good fortune (*lungta*/“wind-horse”), they are central to the sense of vitality and prosperity reflected in the Tibetan term *yang* connecting humans to nonhuman animals and their surroundings. As highlighted by Charlene Makley: “[t]he ground of all long-term human fortune and prosperity [...] is *yang* (Tib. *g’yang*), the very essence of vitality and productivity, which Tibetans conceptualize as a kind of naturally swirling force gathered to vitalize key social units (households, villages, monastic polities)” [Makley 2018: 51]. Horses are important for this. As I discussed elsewhere [Diemberger and Diemberger 2019] fast horses are celebrated as distinguishing feature of Tibet as a place in the oldest historical documents, for example in a famous passage from *Pelliot Tibétain 1286* (lines 35-37):

This centre of heaven
this core of the earth
This hearth of the world
Fenced round by snow mountains
The headland of all rivers
Where the peaks are high and the land is pure
A country so good
where men are born as sages and heroes
and act according to good laws
a land of horses ever more speedy.³⁶

As excellent horses have reflected the prosperity of places since the dawn of Tibetan history, their decline reveals a wider sense of loss of wellbeing for the relevant human communities. In Limi things have been changing at an increasing speed within one generation.

³⁶ Diemberger and Diemberger [2019: 234].



Fig. 5 a horse and the matron of the household ready for the Chogro clan deity celebrations.

“In the past, the larger households had more horses than the small ones” I was told. An elderly inhabitant of Dzang village gave his own household as an example: “we had more than forty horses, which I trained using the techniques of the nomads” he said, referring to a time of not only more horses overall, but also of mares and foals, and of frequent and tight cross-border connections with the Tibetan plateau. During this time—which is still in the living memory of some of the elderly villagers—Limi valley was governed by hereditary leaders according to a Tibetan model, with a “chief” (chikyab) and “headmen” (gowa) [Hovden 2025: 135-136]. I was told that these important figures would regularly check on the conditions of the households’ horses, imposing a high standard of horse care. Horses in Limi are not only collaborators (in mobility, agricultural work, and ritual performance) and companions (sharing the house throughout the winter), they have a distinctive symbolic significance within a kinship system that can be best understood as a “house society”

[Fjeld 2022]. This means that individuals—be they human or horse—belong to the household. They are part of what could be seen as the “distributed personhood” [Gell 1998] of its head, whose wellbeing is reflected in the conditions of its human and nonhuman parts (including the house, seen as a body). Similarly, the households can be seen as parts of the “distributed personhood” of the village community/household groups, which—together with the other settlements/villages—can be seen as parts of the “distributed personhood” of the territorial deity (sadag/shidag)³⁷—the more-than-human “owner” of the place (historically the same title could be given to a deity or to a human ruler of a place: dagpo). This form of extended and relational personhood, linked to regimes of ownership involving not only control but also responsibility, implies both hierarchy and intimacy in “multi-being” relationships and duty of care [Bate 2022 a and b].

5. Duty of Care and End of Life

Human-horse intimacy and familiarity in Limi are built and sustained through daily practices involving routines and repetitions that have been part of local life for centuries [Diemberger, forthcoming]. Within these patterns of multisensorial engagement with horses (movements in space, tactile contact, vocalizations, and more), irregularity is quickly noticed, particularly when individuals are unwell or missing. When horses grow old, these routines do not change, though movement may become slower, horses are fed more (and more richly), and they are more closely watched from a distance. My research assistant, Rinchen

³⁷ With the same particle ‘dag’ from ‘dagpo’ mentioned previously, indicating responsible ownership/ guardianship.

Loden,³⁸ and I were participating in Waltse's community work³⁹ when we heard a horse wasn't well.

As we worked,⁴⁰ some of the men—including a village leader—had gone to plant newly arrived black apple saplings.⁴¹ These high-altitude resistant fruits were a new initiative to try to put Limi back on the map of trans-Himalayan trade and to give people in the village a different source of income. They were being planted behind a big hill on the way to Til village, where fields had recently become available due to yet another member of the community leaving for good. That evening, our host told us that the leaders' horse—an elderly gray, Karpo—wasn't well. Despite the hard day's work and three hours' walk to reach the horse, I activated immediately and wanted to go help. He said we shouldn't; he added that he was dying because he was old, his *sog* (i.e., his life span) had come to an end and that we could light butter lamps.

³⁸ Rinchen Loden Lama, was also research assistant to Astrid Hovden, author of *Limi, the Land In-Between* [2025]. He is also a co-author in Limi-related publications, such as: *Weather, water and work beyond borders. Gendered responses to climatic and socioeconomic changes in a high Himalayan valley in Nepal* (forthcoming).

³⁹ Community work is an important and regular part of life in Limi. Hovden [2025: 167] states that in Limi: "it is not always obvious where to draw the line between taxes and other community obligations".

⁴⁰ We were digging up the path and stones (which we then had to relay) to fix the water pipe leading to the community fountain outside the monastery. Then, we were due to rebuild the monastery's outer wall.

⁴¹ In Tibetan known as (Wylie) *nag po'i gser nor ku shu*, and in Chinese as *gāla guō*, but lacking a Latin name more specific than *Malus domestica* (apple).

I was restless, my incapability of letting go of the matter and accepting samsaric suffering being kindly laughed off. Another villager later joined us, telling us that the horse had died. “The village leader may need help to get the horse in the river tomorrow”, our host said. When it became clear that our departure would at least wait until daylight, I asked why they wanted to get the horse in the river.

“Because if you leave it where it is many maggots will grow and then die. If you leave the horse’s body out, you are causing the death of millions of other beings. The river’s water stops this from happening.” Our host explained. Having a horse’s body washed away by the river is just one of the possible ways in which horses and humans are separated in the Limi valley.

This sequence of events and its explanations illustrate how ritual reasoning and practical necessity are intertwined. The horses’ corpse needed to be dealt with appropriately. Moving the horse’s body into the river fell within the responsibilities of the household head; however, drawing on Limi’s deeply embedded sense of community, others assisted without hesitation. In this case, the horse had died (seemingly peacefully) at the bottom of a river valley and treating the body with due respect was not too difficult. The idea that the horse had to be given to the river was explained to me as a way of avoiding the generation of maggots who would inevitably suffer and die. Whether this Buddhist explanation provided the rationale for a deeper embodied tradition reflecting an ancient link between horses and rivers remains an open question, as elsewhere we found links between horses and nagas (water spirits) more generally [see Diemberger and Diemberger 2019].

Limi’s vertical landscape means that a death near a river in an accessible place is not always the case. When horses die in more remote or difficult terrain, or far from rivers, they are often

left to be consumed by other animals, though butter lamps may be lit and prayers recited. In a similarly pragmatic way, when humans passed in the pastures they were taken to the high pass of the Lapcha. Here they would be blessed by the visual connection with Mt Kailash and consumed by the vultures. Passing, be it human or horse, required practical and ritual responses in a very ‘emplaced’ manner.

One day, I accompanied one of Dzang’s last remaining human inhabitants, Au,⁴² to tend to his elderly horse, Sagpa, who had been attacked by a snow leopard. The horse had survived but two weeks had passed, and the wound was not healing well. “This is why it makes no sense to have foals in Limi” he said, “it’s too dangerous”. This was especially true as herders had become few and scattered. Not only are foals particularly vulnerable—frequent victims of snow leopard and wolf attacks, as I was told—but the death of a horse is also believed to diminish lungta, thereby posing a risk to the wellbeing of the household and its members. Au put some barley mash (bangma) and dried turnips into a basketball that had been cut open and rigged with straps, slung it on his shoulder, and we set off.

⁴² Unless it is relevant to know the identity or role of the interlocutor, I have anonymized humans by using their classificatory kinship term in relation to me. This is a common and respectful practice in Limi. Ai (aunt), for example, is used for adult women, whereas Au (uncle) for adult men, Meh (grandfather) for elderly men, and Ebi (grandmother) for elderly women. These terms are commonly used instead of personal names and compositions like Ebiai (literally grandmothers and aunts) can be used as a blanket category to refer to the senior women of the village. In a similar way, horse coat colours are treated as names, as is common (though not pervasive) practice on site. For more on horse names and naming see Diemberger forthcoming.

We walked towards the bare, unfenced barley fields at the eastern end of Dzang village, where horses moved across stone steps and terraced structures freely and with ease. On the way, we passed by the large circular traps built ‘in the past’ to trap predators. These were supposedly no longer in use—especially since the increase of conservation initiatives—⁴³ though pieces of fur on the bones in the stone pit may have indicated otherwise. To reach the fields we had to cross a large river, something that the horses regularly did alone and unprompted. I followed Au over the narrow bridge that crossed the roaring water as he told me of the long relationship he had had with his “very good”, “very kind”, and “very old” chestnut horse. Au continued to tell me of his desire to stay in Dzang and look after him, alongside the challenges of staying there through the winter—not only would he have to carry water every day from the river, find fuel for the fire for cooking and heating, constantly remove snow from the houses’ flat roofs, and find things to eat with the waning barley reserves, but there were very little hay reserves left for the animals—certainly not enough for the whole of winter. Au seemed to mull over his situation as he spoke. Au’s daughter (who lives in Kathmandu) later added her concern that Au was now in

⁴³ In recent years Limi has drawn a range of conservation efforts including The Himalayan Wolves and Himalayan Carnivore project led by Geraldine Werhahn and Naresh Kusi. Rinzin Phunjok Lama is also leading a Rolex Award funded project on local-led biodiversity conservation efforts. Other similar initiatives are being run by ICI-MOD (International Centre for Integrated Mountain Development).

his 60's, and throughout the winter there is no healthcare service available in the valley, and no way in or out.⁴⁴

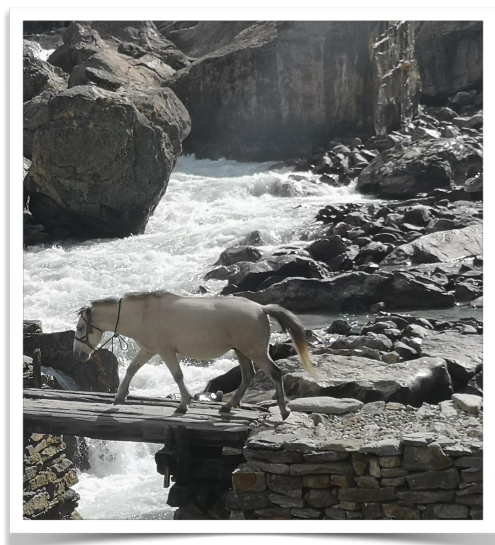


Fig. 6 One of Dzang's horses, Karpo, crossing the river.

As Au and I drew closer to Saga and the other horses he was with, ears swivelled in our direction and some raised their heads. Most walked away before we got close, but Saga remained, using his strong upper lips to continue digging through the dirt for old barley roots while following us with their ears. I hung back and watched Au and Saga negotiate space for some time: the two seemed to know and anticipate one another. Saga did not initially come towards Au, rather, he raised his head and seemed to consider what to do. Au got closer and Saga stepped

⁴⁴ There are two paths leading into Limi from Nepal (and crossed by Nepali government officials including police, teachers, healthcare workers and vets), one crosses the Nara pass (4500masl) and the other, the Nyalu pass (4900masl). These are both closed by high snowfall during the winter period.

with his front foot in the opposite direction. Au changed his direction of approach and Sagpa stayed still, seemingly thinking. When Sagpa finally appeared convinced, he allowed Au to approach and put the basketball over his muzzle, hooking the strap behind his ears. Sagpa ate as Au examined the wound—occasionally twitching his skin at contact and flinching with his ears, but not moving away. Their silent, spatial and tactile conversation revealed a deep familiarity between the two,⁴⁵ alongside Sagpa’s own decision-making. It also underscored the body as a key medium “vehicle for communication” [Brandt 2004] even outside a ridden perspective [Diemberger forthcoming]. Unfortunately, this was the last time I saw Sagpa, as I discuss below, he died the following winter.



Fig. 7 Wounded Sagpa.

The importance of horses’ condition, and the avoidance of their death in relation to (in)auspiciousness, underscores the centrality of dedicated healing practices. In the Tibetan tradition

⁴⁵ Au considered Sagpa his *ngoshe*.

horse medicine is closely related to human medicine and this can be seen in the relevant manuals [Blondeau 1972; Maurer 2001; Diemberger and Diemberger 2019]. Whilst texts reflect a specialised knowledge, day-to-day healing practices tend to be transmitted orally amongst horse carers as embodied traditions.

Returning to the interplay between the ritual and the practical, horse healing emerges as a site of collaboration and experimentation, where diverse resources and forms of knowledge are brought into relation. When I observed Meh—a village elder and horse expert in Waltse—treating an injured horse in his village, he employed local methods alongside the khunyer (caretaker) monk, who applied commercially produced remedies purchased in China. Ngonbo, one of the younger Waltse horses, was missing one cold evening, when everyone else had returned. I accompanied his owner to find him and seeing the fresh wound we ushered the stiffly moving horse back to the village:

Meh came to Ngonbo's left side with a razor blade and started cutting the hair away from the wound quickly and efficiently. As he cut, he inspected the surrounding areas and found other deep holes, which he also examined and shaved. When the warm water arrived, he poured it over the affected areas and cleaned the wounds thoroughly. The khunyer monk arrived with two small bottles and a sachet of powder, all with Chinese writing that no one could read.⁴⁶ There was also an old Fanta bottle of (what I think was) betadine solution. The monk applied all the

⁴⁶ These turned out to be Hydrogen peroxide, Crystalline sulfanilamide, and Povidone-iodine. A similar situation came about when a wave of illness swept the village and all the children at school got sick. I remember helping the parents by sending photos of Chinese pharmaceutical instruction pamphlets to my Chinese reading friends because (though many people from Limi work in China and bring back many goods including medicine from there) few people can speak or read Chinese.

material given to him with expert hands but with (what seemed) little concern about quantities. Once the pharmaceuticals had been applied, Meh carried out a traditional practice that involved biting and pounding the horses' back, then pulling his tail three times. He later explained: "when they [horses] get bitten [by predators], they can have problems with their stomachs swelling. To treat, or prevent this, you need to pull up the skin an arm length above the tail, put pressure on them like this [showing me the three firm pounds], and then pull the tail." The khunyer monk and Meh together had also successfully treated the other horses that had been attacked in the previous week.



Fig. 8 Meh (right) and the khunyer monk (left) treating Ngonbo (center) with Chinese medicine bottles in the background.

Au, Meh, and the khunyer monk were trying their best to help the horses, mixing and matching whatever might work. Such situations reflect TallBear's [2011; 2017] understanding of "indigenous knowledge" as dynamic, adaptive, and constituted through ongoing engagement with multiple knowledge systems

rather than as a fixed or bounded tradition.⁴⁷ Among the Limi community who have inherited knowledge traditions associated with Rinchen Zangpo and participate in a horse culture with roots in the Tibetan Empire, healing practices draw simultaneously on local expertise and externally sourced materials. In this context, my own contribution (a large pot of Sudocrem) was readily incorporated as yet another resource within this evolving repertoire.

6. ‘Life-Liberating’ Rituals (Tsetar) and Their Many Purposes

As we have seen, horse health and wellbeing in Limi are closely tied to that of the household, and both are shaped by practical challenges and obligations. In this context, horses may be released from labour and offered as tsetar (tshe thar, “life release/liberation”). This ritual is widely recognised across regions where Tibetan Buddhism is practiced, including Himalayan Nepal, Tibet itself, and Mongolia [Fijn 2011]. This practice involves the intentional saving or prolonging of an animal’s life—often by freeing it from slaughter or work—as an act of compassion and merit-making. As highlighted by many authors (see Holler 2022 and Coma 2025 for a detailed overview), the term tsetar can work as a blanket category subsuming a wider range of ritual actions and aims.

In Limi, offering a horse as tsetar is said to extend the life of the household, or of the household head, by the duration of the horse’s remaining life lived in freedom. While spending time in the high pastures with a man considered “Limi’s last nomad”, I

⁴⁷ More specifically, she says: “An Indigenous epistemology would be anything used by somebody who is concerned with the survival of their people” [TallBear, 2017, 04:19] to which, in this case, I would add horses and other beings.

would observe him regularly pause his activities to scan the distance with his binoculars. He was looking for the tsetar horse he had released several years earlier, and whom he had since watched thrive in the high pastures from a distance. While such offerings can be understood as generating merit that contributes to longevity, they might also be interpreted as transformations or substitutions of pre-Buddhist sacrificial practices. In areas where Buddhist lamas reformed local territorial cults involving animal sacrifice, tsetar rituals could be used as an adequate replacement: rather than offering the animal to the relevant deity through sacrificial slaughter, the animal could be set free in an act that would please the relevant Buddhified deity and make merit for the relevant person/household. In both cases, tsetar highlights the interconnection between specific humans, horses, and households, binding their fates through both ritual intention and lived consequence.

In Limi there is a further distinctive version of horse tsetar: horses can be set free not only to make merits but also to be entrusted to the place and its deities as a form of freeing the household of caring responsibilities.

“But which horses come back?” I asked my Limi-ji-añ (Limi mother), who still lives in Til village. I could not help but think of the -15°C summer nights I had experienced in the high pastures two years earlier. “You look after them”, she replied simply. Her husband added that this did not usually occur; however, it was understood that if a horse chooses to return, they would be received and cared for as before.

When I returned to the Limi Valley in 2024, I encountered a horse I had met in 2022 along the path between Til and Waltse. Although I was very familiar with the small chestnut with whom this horse had once seemed closely attached, he was now accompanied by another horse, one I had never seen before. I asked my guide and assistant who this horse was. Rinchen Loden

who (with many more years of experience in Limi valley than myself) knew both its human and nonhuman inhabitants well, suggested that the unfamiliar horse was “probably a tsetar”. This indicated that the horse had likely been released in another Tibetan Buddhist community and had subsequently made its way to Limi. This interpretation was plausible given the harsh conditions of the high plateau, in contrast to the comparatively milder climate and lower altitude of the Limi Valley (though still at 3,000–4,000 metres). At the same time, the encounter highlighted both the relatively common use of tsetar practices beyond Limi, and the possibility of horse survival in and movement across large uninhabited landscapes (like much of the Tibetan plateau and Himalayas) and then back into village areas.

During my 2024 stay in Limi valley, I spoke to several people who planned to offer their horses (many of them elderly) as tsetar the coming summer. In these cases, the ritual can also be understood as used to address the end of a horse’s life, partially relieving the household of ongoing care obligations while still framing the act within a moral and cosmological logic of compassion and merit. However, in a context where horses and their condition function as an index of status, fortune, energy, and wellbeing, the current overall decline of horse numbers and horse conditions (especially related to age) in Limi can be understood as one of several signs of a broader crisis affecting the community.

In Limi’s current situation of mass outmigration, tsetar may also be repurposed in response to the decline or abandonment of village life. In such situations, horses are usually (and in local perspectives, ideally) entrusted to relatives, sold (again, preferably to known humans), or released through tsetar. Even if a horse is old, sick, injured, or unlikely to survive the winter, there is no notion of ‘good death’ (euthanasia). Decisions of what to do with each of Limi’s horses are shaped by circumstance—of the

horse, the household, and the wider context—but they also reflect an attempt to reconcile practical necessity and actual possibilities with moral and cosmological obligations. With less people in Limi valley, a decreasing use of horses in Himalayan lifestyles (even beyond Limi, less horses are being bought), and few other alternatives, there seems to be an increase in discourse about offering horses as tsetar and increasing numbers of tsetar horses.

Such practices, however, do not produce uniform outcomes. As we have seen and heard, different horses respond to tsetar conditions in different ways: some thrive, some die, some return, and others disperse elsewhere. This is hard to negotiate with humans leaving Limi valley. Whilst previously, tsetars could return home come winter, and a human would open the door, let them into the house, and feed them, this is no longer the case. Now, once horses have been offered as tsetar, they really are only under the care and jurisdiction of the territorial deities. This can bring about practical problems for horses, especially those—like Sagpa—who are most reliant on care.



Fig. 9 Limi horse waiting to be let into his house.

This became evident, for instance, in 2024 following heated discussions about transferring Dzang's religious and ritual relics to Kathmandu—signalling the abandonment of the village. At this time, I had a moving interaction with Au that revealed what seemed to be a profound feeling of guilt at failing to fulfil his duties of care, to the house, village and animals. He wanted to stay, but the challenges of living in Limi can only be faced as a community. Alone, or with very few people, the demands of daily survival were unsustainable. He could no longer provide for himself in his home village nor sustain the distinctive human-horse sociality that had characterized Limi for centuries. Dzang's horses would no longer have a point of reference in the village—it was the end chapter of a remarkable relationship.

Limi's discontinuous human-horse relationality complicates any clear distinction between the 'wild' and 'domestic'. Horse agency and choice within these relationships also speak to less anthropocentric understandings of 'domestication', seeing it as a

multidirectional process—a widely debated topic.⁴⁸ Limi’s human-horse relationships reflect a broader pattern of seasonally shifting coexistence between humans and horses, in which proximity, care, and autonomy are (and have for a long time been) continuously renegotiated, and shaped by the risks and challenges of living in this difficult environment. Offering a horse to the territorial deities could in some ways be seen as akin to ‘rewilding’, and yet, Au’s feelings between acceptance as part of sam-saric suffering and a sense of failing to cultivate a relationship that had shaped him throughout his life, tell a more complicated story. Au knew that Saga, and many others, would die (as did indeed occur). He was sad not only for his beloved horse, or even the many other horses entrusted to him, but in some ways, he was sad because it reflected the end of a way of life for the village. Everything is impermanent, he knew this, and yet it was difficult to process.

Dealing with the end of life is in any case difficult, as discussed by Hurn and Badman-King: “The importance of attempting to engage empathetically with the dying individual, recognizing their individuality, and responding to their specific needs, while simultaneously balancing the needs of their carers, is a nearly impossible task” [Hurn and Badman-King 2019: 152].

In Limi, the symbolic significance of horses and their relationship to community wellbeing brings an additional complication to an already difficult situation. At the same time, the Buddhist moral horizon offers a way of thinking about life, suffering and impermanence that can assist—though, in practice, not necessarily fully resolve—emotional tensions.

⁴⁸ E.g., Budiansky 1992 [1994], Cassidy & Mullin 2007; Zeder 2015. See Taylor [2024] and Orlando et al. [2025] specifically with regard to horses.

7. Conclusion: Horses' End of Life in a Cross-Cultural Perspective

My experience in Limi suggests that human-horse relationships are situated within moral and cosmological horizons, while also being shaped by practical constraints, including ageing bodies, impermanence and the inevitability of death. In the Limi context—one that is not ontoepistemologically aligned with the frameworks of ethology or equitation science—the end of life emerges as a moment marked by moral and emotional tension, yet also by forms of intimacy, care, and difficulty that are cross-culturally recognizable.

At the same time, such moments must be understood in their specific context, particularly in relation to the ethical, affective, and logistical pressures that inform decision-making. In Limi, as elsewhere, death is an integral part of life; however, its meanings, management, and consequences vary considerably, carrying distinct social and political ramifications and different understandings of sentience.

Ethnographic attention to these dynamics offers an important complement to ethological approaches, illuminating how people interpret, negotiate, and act upon difficult decisions at the end of life within intimate multispecies relationships.

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Cavalli

Esther Celiberti

Ho preso dei cavalli
Per cavalcare, per cavalcare
Dicono che i tuoi demoni non possono andarci
Quindi ho preso dei cavalli
Patti Smith, Horses

Fino a dove è cavallo,
dove inizia il cavaliere?
Chi sa dire se sia cavallo o cavaliere?
Qualcosa si fermò, qualcosa continuò a galoppare.
*Jan Wagner, Variazioni sul ba-
rile dell'acqua piovana*

1. Tolstoj

Lev Tolstoj è uno dei più grandi romanzieri russi, nasce nel 1828 e muore nel 1910. Nella sua produzione ricordiamo Guerra e pace, Anna Karenina, Resurrezione. È noto anche per il pensiero pedagogico, filosofico e religioso. Si schierò dalla parte degli umili e a favore della non violenza.

Il cavallo Cholstomer appare come la controfigura di un uomo, delle sue sofferenze e costituisce una riflessione sulla vecchiaia. L'allontanamento del cavallo da parte della madre è un riferimento autobiografico, lo scrittore infatti perde la madre quando ha solo due anni.

Un vecchio castrone malato è impiegato come cavallo da soma in un allevamento di giovani purosangue come un tempo era stato lui. Ma a causa del colore pezzato del mantello era stato ritenuto inferiore e poiché corteggiava le cavalle era stato castrato. In seguito, utilizzato come cavallo da tiro, era passato di pa-

drone in padrone sino alla morte nonostante l'eccezionale velocità. Cholstomer vede disconosciute le sue qualità e l'appartenenza come fonte di amore.

Tra il 1863 e il 1864 Tolstoj scrive il racconto del cavallo mite quanto incompreso che ben presto entrerà nella casta dei paria. È un castrone pezzato, un quasi uomo. Viene picchiato solo perché non si abitui troppo bene. La sua vecchiaia è “maestosa e ripugnante al tempo stesso”. Le lappole, come gli eventi dell'esistere, aderiscono al suo manto cosparso di ferite e cicatrici. Ai suoi tempi era stato un bel cavallo nonostante gli attuali “segni ributtanti di decrepitezza” convivano con la bellezza e l'orrore come nel sublime.

Questo “rudere vivente” viene preso di mira dai giovani cavalli: “Avevano sempre ragione solo quelli che erano giovani, forti e felici, quelli che avevano la vita davanti a sé”. Colpevole di aver già vissuto, tutta quella gioventù lo punisce “per quella stessa cosa alla quale tutti loro avrebbero dovuto sottostare alla fine della vita”. Una notte tutti lo aggrediscono come fosse un martire. Allora Cholstomer inizia a raccontare in prima persona come la madre lo avesse allontanato dai capezzoli per lo stigma della pezzatura.

Così ragiona il cavallo filosofo: “Gli uomini si regolano nella vita non in base ai fatti ma alle parole, ritenute tra di loro molto importanti, sono le parole mio, mia che usano per le cose, le creature e le maniere più disparate anche per la terra, la gente, i cavalli. Per una sola e medesima cosa essi si accordano perché uno solo possa dire è mia. E quello che, in base a questo gioco stabilito fra di loro, dice del maggior numero di cose mio, quello è ritenuto il più felice di tutti”. Cholstomer analizza la proprietà e l'accumulazione in uso fra gli umani mettendo in discussione, e non è il primo, la loro presunta superiorità. A proposito dell'avidità Swift scriverà ne I viaggi di Gulliver che vi sono pietre lucenti che eccitano la passione degli Yahoo e che nascondono per timo-

re che qualcuno possa sottrarre il loro tesoro. Gli Houyhnhnm non avevano mai saputo spiegarsi questo desiderio contro natura, questa frenesia.

Il colore del manto, la malinconia, il rifiuto materno, la castrazione, il non appartenere a se stesso sono pesi dai quali non potrà più liberarsi. Ricorda il periodo più bello, quello al servizio del capitano degli ussari che per raggiungere l'amante lo sfiancava e ora, che non ha più forza e andatura, passa da un padrone all'altro. L'epilogo è tragico: Cholistomer viene scuoiato e dato in pasto ai lupi mentre si illude che debbano addirittura curarlo. Anni dopo muore il suo ex padrone Serpuchovskoi, anche lui già da tempo non più necessario a nessuno. La critica pedagogica di Tolstoj alla divinizzazione dell'utile, nel racconto del cavallo, doppia quella dell'umano. Nessuno si era occupato di Ivan Il'ic malato ad eccezione del servo Gherasim.

2. Bunin

Bunin è uno scrittore russo nato nel 1870 a Voronež e morto a Parigi nel 1953. Ricevette il premio Nobel nel 1933. A causa della rivoluzione bolscevica emigra all'estero dove nel 1930 scrive *La vita di Arsen'ev*. Solo negli anni '50 le sue opere iniziano a essere pubblicate nell'URSS.

Nel romanzo il legame fra padrone e cavallo è un nodo indissolubile.

“Ma abitualmente i cavalli stavano ritti negli stalli e tutto il giorno stritolavano sotto i denti l'avena [...] ed erano tutti belli, possenti, con groppe lucenti, con code ruvide lunghe sino a terra e criniere femminee, con grandi occhi lilla, con cui talvolta guardavan di sbieco minacciosi e stupendi, ricordandoci il fatto spaventoso che ci aveva raccontato il cocchiere, che cioè ogni cavallo ha nell'anno il suo giorno sacro, il giorno di San Floro e Lauro, in cui spia l'occasione per uccidere l'uomo al fine di vendicarsi della sua schiavitù, della sua esistenza equina consistente in una

continua attesa di essere attaccato, nel compiere il suo strano compito nel mondo—soltanto condurre, soltanto correre”: così nella Vita di Arsen’ev, descrive la perturbante bellezza degli animali che nel giorno dei loro santi protettori potrebbero commettere l’omicidio rituale dei padroni per ribellarsi a tanti anni di sottomissione.

Ed è sul discrimine fra utopia (Platone e l’idea di cavallinità) e distopia (Swift Houyhnhnm versus Yahoo) che si gioca la relazione uomo-cavallo.

In una situazione di pericolo così Arsen’ev descrive la sua cavalla: “La Kabardinka con le staffe pendenti sui fianchi e i corni della sella sporgenti, stava ritta nella sua meravigliosa snellezza, con le orecchie puntute, quasi sentisse anch’essa la sinistra fama di quei luoghi”. L’immutabile devozione e l’amore dello scultoreo animale per il cavaliere fanno sì che “abbracciato con particolare tenerezza il suo collo sottile e baciato il suo naso nervoso, di nuovo saltai in sella e la spinai al galoppo”. E pure la morte della Kabardinka ha i toni della tragedia greca: “La Kabardinka nereggiava mostruosamente sul praticello col suo morto petto, col fianco gonfio e il lungo collo sottile, col capo riverso lontano”. I cani e i corvi la dilaneranno in una macabra scena che non è la morte del cigno.

3. Pirandello

Pirandello nasce ad Agrigento nel 1867 e muore a Roma nel 1936. Nel 1934 riceve il premio Nobel. Nelle sue opere analizza la pluralità dell’io, la relatività delle apparenze e l’esistenza come recita della persona/personaggio. Nella prima novella presentata il cavallo è visto come animale non senziente del quale disfarsi e di cui si teme l’irrazionalità, l’imprevedibilità, lo scarto. Nella seconda la morte dell’uomo doppia quella del cavallo che lo trascina con sé in un vortice di dissoluzione.

Nel 1935 Pirandello scrive *Fortuna d'essere un cavallo*. Un cavallo è stato abbandonato: "Sente attraverso la porta chiusa l'odore della sua stalla, l'odore del cortile; e pare che di tanto in tanto, aspirandolo con le froge dilatate, sospiri". Gli anni lo hanno ridotto male, il padrone ha cercato di liberarsene senza riuscirci. La bestia non serve più a niente, solo le mosche lo tormentano.

L'autore sembra chiedersi quale percezione abbia l'animale della sua libertà, quasi invidiandogli lo stato incosciente. La sua alea è una latente minaccia, la bestia è un rischio, "un corpo che non riesce mai a ispirare una intera confidenza e da cui tutti ci si guarda perché tutt'a un tratto, non si sa mai, uno sfaglio imprevedibile". L'animale vorrebbe mangiare ma non gli è concesso, prosegue impenetrabile la strada poi ritorna sul corso del paese come volesse sfamarsi ma due guardie lo conducono fuori dall'abitato dove sente il profumo dell'erba.

"Perché tra le tante disgrazie che gli possono occorrere stando sotto gli uomini, un cavallo ha almeno sempre questa fortuna: che non pensa a nulla". Per ora mangia l'erba, domani non si sa. Pirandello si schiera dalla parte di questo eroe dell'inconsapevolezza che vive nell'istante. La mestizia dell'abbandono si coniuga alle molteplicità del possibile che pur ignora.

Nella novella del 1907 *Un cavallo sulla luna* due sposi fanno una passeggiata: "Ad un tratto ella si fermò dando un grido. Le si era levato uno stormo di corvi gracchiando. Più là, steso per terra, era un cavallo morto. Morto? No, no, non era morto: aveva gli occhi aperti. Dio, che occhi! Uno scheletro era. E quelle costole, quei fianchi!". Alla pietà di Ida, la sposa, non corrisponde Nino, lo sposo, colto da una febbre improvvisa. "Una gran luna che sorgeva lenta da quel mare giallo di stoppie. E, nera, in quell'enorme disco di rame vaporoso, la testa inteschiata di quel cavallo che ancora attendeva col collo proteso [...] mentre i corvi, facendo la ruota, gracchiavano alti nel cielo". La testa del cavallo appare sospesa

come quella del Battista nei dipinti di Moreau. Ida, che nel frattempo era andata a chiamare soccorso, trova Nino che rantola in punto di morte. Vuole fuggire dallo sposo, dalla luna, dai corvi, certo da quelle nozze che hanno il carattere rituale di un sacrificio. La pallida vestale ha impedito il congiungimento funesto. E allora non ci stupisce che in Spesso il male di vivere ho incontrato—scritto nel 1925—Montale individui una delle figure del negativo nel cavallo stramazzato a terra.

4. Swift, Orwell

Swift è uno scrittore irlandese che nasce nel 1667 e muore nel 1745. Le sue opere sono scritte da una prospettiva ribaltata e all'insegna del paradosso. Orwell, scrittore inglese, nasce nel 1903 e muore nel 1950. Nella narrativa riflette sul totalitarismo. I romanzi che gli hanno dato la fama sono un classico esempio del genere distopico. Sia Swift che Orwell analizzano la figura del cavallo nell'ambito dei rapporti sociali. Nel primo autore prevale la logica del contrario e l'animale rappresenta il ceto superiore mentre gli uomini sono segnati dalla degradazione.

Nel secondo invece il cavallo è la classe sfruttata e sottomessa.

Un vero e proprio rovesciamento a favore dei cavalli avviene nei Viaggi di Gulliver che Swift scrive nel 1726. Nel viaggio nel paese degli Houyhnhnm il protagonista giunge nel mondo dominato dai cavalli, esseri perfettamente razionali dove gli umani chiamati Yahoo sono bestiali e selvaggi. I cavalli hanno un linguaggio che esclude la menzogna, ignorano la guerra e pensano che la morte sia un ritorno nel grembo materno: “Gli houyhnhnm non hanno nel loro vocabolario una parola che esprima un qualche male, tranne quelle che prendono a prestito dalle deformità e cattive qualità degli yahoo”. Ma Gulliver è costretto a tornare in Inghilterra, durante il primo periodo non può tollerare la presenza e l'odore della moglie e dei figli.

Acquista due giovani stalloni e passa la maggior parte del tempo a discutere con loro, “tuttavia, siccome l’odore di uno yahoo continua ad essere molto disgustoso, tengo sempre il naso ben turato con ruta, lavanda o foglie di tabacco”. La critica al genere umano passa attraverso la descrizione di un mondo alla rovescia dove si invertono bestialità e civiltà.

Tutt’altra atmosfera nella Fattoria degli animali, pubblicata da Orwell nel 1945, ove il cavallo Gondrano lavora da mattina a sera: “Aveva convenuto con un galletto di farsi svegliare ogni mattina mezz’ora prima di tutti gli altri per prestarsi volontariamente al lavoro dove era più necessario, prima che cominciasse la quotidiana fatica. La sua risposta ad ogni problematica era ‘Lavorerò di più’ frase che aveva adottato quale suo motto personale”.

Gondrano simboleggia il proletariato schiavizzato. Ammalatosi non sarà curato ma portato al macello, il ricavato servirà all’acquisto di alcoolici per i maiali che hanno tradito la rivoluzione e si sono umanizzati.

5. Sternheim

Sternheim è un drammaturgo e scrittore tedesco che nasce nel 1878 e muore nel 1942.

Pur se costretta alle ferree regole dell’obbedienza, Libussa esalta l’osmosi fra animale ed essere umano.

“La sella divenne l’emblema della mia schiavitù [...] della mia libertà di creatura: compresi che la vita è soggezione e obbedienza”: nel racconto Libussa che Sternheim scrive nel 1921, la cavalla racconta di aver portato in groppa la zarina, moglie di Nicola II, poi Edoardo VII di Inghilterra e infine il Kaiser Guglielmo II. Lo scrittore non ritrae solo la relazione fra Libussa e i cavalieri ma fa raccontare alla cavalla parlante i fatti storici dell’epoca. “La mia posizione di cavallo personale mi conferiva un rango e un’aura, ma la cosa che per me aveva addirittura del su-

blime era restare a tu per tu con la sovrana, trovarsi fra esseri dello stesso sesso che si capivano”: piaceri dell’intimità! Al Kaiser la sua anima è legata da fili invisibili, tutte le donne la invidiano perché solo essa può seguire sul campo l’imperatore, “unica creatura vivente negli istanti del pericolo estremo”. La fusione è totale: “Cavalcavo alla testa di reggimenti e brigate, saltavo e scoccavo come una freccia ridente, mi bagnavo in estasi di tripudio e mi specchiavo nel lampo di spade guizzanti”. Ormai volge al suo idolo sguardi ardenti e nel delirio interiore la comunione si compie: “Sentivo confondersi le frontiere tra uomo e animale”. L’osmosi è esaltazione di un “entusiasmo che pareva intinto nel sangue”.

Sento i Cavalli dell’Ombra, che scuotono le lunghe criniere, con tumulto di zoccoli pesanti, e bianco bagliore negli occhi

W. B. Yeats, Michael Robartes invita la sua amata a stare serena

Immaginiamo di essere nella Sala dei Cavalli a Mantova, a Palazzo Te: al passo, al trotto o al galoppo hanno sfilato dinanzi ai nostri occhi cavalli parlanti e filosofi, puledre insanguinate e animali sottomessi, bestie ribelli o superiori agli umani, che hanno messo in scena relazioni di dedizione, eros e potere. I legami duali fra creature appartenenti a sfere diverse talora partecipano l’una dell’altra tanto che non si sa dove inizi la prima e finisca la seconda. Accade così nel legame fra esseri affini.

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Authors' Biographies

Thaïs Bird is a guest researcher at the Messerli Research Institute (University of Veterinary Medicine Vienna), where her work examines how concepts are used in equestrian practice and what this means for normative judgement in applied ethics. She is passionate about teaching and is currently creating instructional curricula both for the horse industry and for a graduate-level program focused on human-animal interactions. Outside her research, she takes advantage of the many balls Vienna has to offer, makes handmade jewellery, and plays tabletop roleplaying games. Her horse, Rubia, who has accompanied her for the past decade, remains the muse for much of her academic work.

Esther Celiberti holds a degree in Humanities and a doctorate in Comparative Literary Studies, and has taught Italian and History in secondary schools. She works in the fields of literature, art, and theatre and is an editor for the journal *Incroci*. Her most recent publication is “Tersicore” for Cue Press, a translation of Soupault’s text accompanied by her own essay on Salomè. She enjoys travelling and volunteering.

Yancen Diemberger has written a PhD thesis titled: “Learning to speak ‘horse’ in the Himalayas and Argentina” in Anthrozoology at the University of Exeter that combines ethnography and ethology. The research was funded by the Wenner Gren Foundation. She completed her bachelor’s degree in Tibetan and South Asian Studies at the University of Vienna. She then linked studies of Tibetan horse-science manuscripts with her practical equestrian work across the globe for her MPhil in Anthrozoology at the University of Exeter. She is also part of the EASE (Exeter as Symbiotic Ethics) working group and the Anthropology By Children Project (University of Cambridge).

Sue Dyson graduated from the University of Cambridge, UK, in 1980. After an internship at the University of Pennsylvania and a year in private equine practice in the same state, Sue returned to Great Britain to the Animal Health Trust, Newmarket. Sue ran a clinical referral service for

lameness and poor performance, attracting clients from all over the United Kingdom, Ireland and continental Europe for 37 years. From 2019 she has been working as an independent equine performance consultant, combining her horsemanship skills with her previous veterinary experience, with the aim of maximising performance potential. Sue's key interests are improving the diagnosis of lameness and poor performance and maximising the opportunity for horses to fulfil their athletic potential at whatever level, taking a holistic approach to the horse, rider and tack combination, and improving approaches to diagnosis and management. She has been involved not only in providing clinical services, but also clinically relevant research and education. Sue is co-editor, with Mike Ross, of *Diagnosis and Management of Lameness in the Horse* (2003) and co-author of *Clinical Radiology of the Horse* (1993) and *Equine Scintigraphy* (2003). With Sue Palmer she wrote *Harmonious Horsemanship: Use of the Ridden Horse Ethogram to Optimise Potential, Partnership and Performance* (2023). She has published more than 460 papers in peer-reviewed journals concerning lameness and diagnostic imaging and has lectured worldwide to veterinarians, paraprofessionals, coaches, riders and judges.

Sue is a former President of the British Equine Veterinary Association and is currently scientific advisor to the Saddle Research Trust and Moorcroft Rehabilitation Centre. Sue is also a rider, and has produced horses from novice to top national level in both eventing and show jumping. Sue holds the Stage 5 Coach and Stage 5 Stable Managers Certificates of the British Horse Society (BHSI). Sue has been awarded many international accolades for her work including induction into the University of Kentucky Equine Research Hall of Fame for outstanding contributions to research in equine veterinary science, Honorary Membership of the British Equine Veterinary Association and Società Italiana Veterinari Per Equini, Italy, the American Association of Equine Practitioners Frank J. Milne Award, and the Tierklinik Hochmoor Prize, Germany, for outstanding, creative and lasting work in equine veterinary medicine.

Pantaleo Gemma graduated in Veterinary Medicine from the University of Bologna in 2007 and has since pursued extensive postgraduate

training, including a specialization in Technology and Pathology of Poultry, Rabbits and Game Animals from the University of Bari, a Master's in International Cooperation from the University of Padova, a Master's in Veterinary Public Health and Food Hygiene from the University of Perugia, a Postgraduate Certificate in Dairy Herd Health from University College Dublin, a Postgraduate Diploma in International Animal Welfare, Ethics and Law from The University of Edinburgh, as well as a Master's in Animal Law and Society from Universitat Autònoma de Barcelona. From 2009 to 2012, Dr. Gemma worked in the veterinary public sector in the United Kingdom, gaining experience in animal health and welfare, public health, and regulatory enforcement. From 2012 to 2026, he held a range of senior veterinary positions in Malta, including Principal Veterinary Officer and Head of the Animal Welfare Unit, with responsibilities at national, European, and international levels in the fields of animal health and welfare. He currently serves as Senior Lecturer II in Animal Behaviour and Welfare within the Veterinary Medicine degree programme at the Malta College of Arts, Science and Technology, where his teaching, research, and professional interests focus on animal welfare, animal behaviour, livestock production, and animal ethics.

Amanda Minervini Thanks to their father and despite living in a small urban apartment, Amanda Minervini has always been seen as “the friend you take stray animals to.” To everyone’s surprise, they chose not to become a veterinarian but pursued an interdisciplinary career in the humanities (MA, UMass Amherst; Ph.D., Brown University) that has allowed them to live and conduct research across three continents. In this phase of their interspecies life, Dr. Minervini teaches Italian language, culture, and zooanthropology at Colorado College in Colorado, USA, while, thanks to the teachings of many equines, they co-lead EGLHE (Equine-Guided Learning and Healing Experience), a nonprofit organization dedicated to helping humans listen to equines and see them as equals. They are also affiliated faculty at Roberto Marchesini’s SIUA, School of Zooanthropology, based in Bologna, Italy, and the US coordinator of the International Society of Zooanthropology, directed by Cosetta Veronese.

Bianca Nogara Notarianni is a doctoral candidate in “Inequalities, Differences, Participation” at the University of Palermo. Her research is a genealogical investigation of bestiality in the Italian context, aiming to map the overlaps between what is permissible and what is illicit and their distribution both within and outside institutionalized contexts such as farms, animal facilities, and laboratories. She is a member of the editorial board of the journal *Liberazioni* and of the *Bucefalo* collective, with which she runs a reading group and, since 2025, the project *Una specie di lezione*, which aims to bring a non-anthropocentric discourse on animals and the concept of nature to schools.

Barbara Padalino graduated in Veterinary Medicine at the University of Bari and completed her Ph.D. at the University of Sydney, Australia. She is currently working as an Associate Professor of Animal Behaviour, Husbandry and Welfare at Southern Cross University, Australia, and at the University of Bologna, Italy. She has been a member of the Animal Health and Welfare panel of the European Food Safety Authority; she is currently a member of the European Platform on animal welfare. She is a Diplomate of the European Veterinary College in Animal Welfare, Ethics, and Law, and her main areas are animal transportation, and the development and validation of farm-to-fork welfare protocols.

Varvara Savulchyk is a Research Assistant at Van Hall Larenstein University of Applied Sciences, where she is part of the Sustainable Equestrianism Research Group led by Prof. Dr. Inga Wolframm. She contributes to interdisciplinary research projects focusing on equine behaviour, horse-human interaction, and the application of emerging technologies to support evidence-based approaches within the equestrian sector. Her research interests lie at the intersection of applied animal science and sustainable development, with a particular focus on advancing equine welfare.

Inga Wolframm is Professor of Sustainable Equestrianism at Van Hall Larenstein University of Applied Sciences in the Netherlands. Her research focuses on the long-term sustainability of the equine sector, exploring how horse-related activities can contribute to ecological, social,

and economic value within contemporary society. Her work combines human behaviour change, equine welfare, biodiversity, and landscape design with a particular interest in the factors that influence the adoption of more sustainable practices. Through interdisciplinary and practice-oriented research, she works with equine entrepreneurs, policy-makers, educators, and sector organisations to develop evidence-based approaches that support both the future viability of the equine sector and its contribution to broader societal challenges. She serves on the FEI Equine Welfare Advisory Group and collaborates with national and international partners on issues relating to sustainability, equine welfare, and landscape stewardship.