

# AMANTES (LOVERS): INVESTIGATING AUTONOMY, AUTOPOIESIS, AND POLYRHYTHM WITH HORSES

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## ABSTRACT

This visual essay with moving image explores a practice between the artist and three horses who are brought together by their shared response to the Afro-Cuban son clave: A rhythmic pattern that is ostensibly neither from the artist's nor the horses' cultural backgrounds. The essay investigates autonomy, autopoiesis, and polyrhythm with horses; and it considers the role of the change and stability paradox in potentially leading to more rhythmic attraction the less this is imposed or managed by the artist. The artist speculatively compares her practice with horses to the creative learning pedagogy developing in Wales in contrast to England's prescriptive teaching.

## KEYWORDS

autonomy, autopoiesis,  
ecology, creative learning,  
asymmetry, polyrhythmia

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In 2020, I made a film with two horses I had known for twenty years. I called the older and slower horse Billy. The other horse was younger and fitter. I called her Cadi. The film records our shared responses to the Afro-Cuban son clave: A highly specific rhythmic pattern that is ostensibly not of my cultural background or that of the horses, although this is difficult to define, given the trans-cultural diffusion and appropriation of rhythm in popular music. This practice began during the first Covid-19 lockdown when, starved of bodily company, I played Tito Puente's Latin jazz version of Dave Brubeck's (1959) jazz classic, *Take Five*, through my headphones when I was working and moving around the horses. Although they could not hear the music, the horses seemed relaxed with the rhythm my body was responding to. They stood still as I moved close to their chests, around their hindquarters, and under their bellies.



Figure 1. The horses' body language told me they wanted to go out, to move. Image from Morag Colquhoun, *Amantes (Lovers)*, 2020, video still.

Related to West African bell patterns, the 5/4 son clave is typically the key rhythm of several different overlapping rhythms, which are described as being in clave. Musically, the son clave is described as a period or repeat pattern made up of two phases: An antecedent three-beat phase and a consequent two-beat phase. The asymmetric coupling, repetition, and closure give the clave the structure of a call and response. Both sides are needed to complete the energetic renewal of continuing exchange (Peñalosa & Greenwood, 2012).

On a bright, clear spring day, I tapped out a 5/4 rhythm on a pair of clave sticks as I walked down the lane to the barn where the horses were dozing in the unseasonably hot weather. Long, clear sounds emanated from the claves as I learned to

strike them with more resonance. They reverberated around the tree branches overhanging the lane and rang out over the river as I crossed the bridge. When I arrived at the barn, the horses were unusually animated, with their ears pricked intently toward me. Their body language told me they wanted to go out, to move (Fig. 1). We walked up the lane. Normally the younger one, Cadi, pulled forwards, and Billy, the older one, lagged behind so that they stretched my arms tautly between the two lead ropes. This time, the rhythm seemed to hold us together. Billy was vitalized while the younger one kept step. Not once did the horses strain at the lead ropes in ways that suggested overexcitement, fear, antipathy, or indifference. When we reached the end of the lane, and the horses went off to graze, I realized that I had managed to hold my recording phone, the two horses' lead ropes, and the beating clave sticks together without disruption with complete focus on the rhythm.

I wondered if the horses' apparently positive reactions to the son clave were predicated upon their innate responses to a rhythmic pattern that closely correlated to the sound envelopes of their own hoof beats. For these four-legged animals, perhaps the 5/4 time signature had the effect of stressing the energetic renewal of each four-beat cycle rather than a monotonous plodding drone of undifferentiated footfalls.



Figure 2. In the first film, the light appears bright and crystalline. Image from Morag Colquhoun, *Amantes (Lovers)*, 2020, video still.

Charles Darwin postulated that animal species share a perception of rhythm due to commonalities in their nervous systems (Bregman et al., 2012). Preliminary research investigating musical preferences in stabled horses suggested horses may prefer music with a regular beat (Haupt et al., 2000). However, more rigorous testing methods

failed to produce clear evidence for synchronization to a musical beat in domestic horses, despite anecdotal testimony to the contrary (Bregman et al., 2012; Fitzroy et al., 2018). As these experiments were designed to test the hypothesis that musical beat perception and synchronization (BPS) is limited to species that have developed vocal learning, including songbirds and humans, the human researchers wore earplugs to avoid transmitting involuntary sensory cues to the horses. The acute ability of horses to detect such signals was revealed by the case of Clever Hans, a horse famously thought to be able to count but who was later proved to be reading human body language. Vinciane Despret (2004) describes Hans's capacity to play with and shape the game he was presented with as an example of "anthro-zoogenetic practice" (p. 122) in which the animal chooses to be "available" rather than "docile" (p. 123). For Despret, this practice depends upon animals and humans being open to each other's proposals in conditions of trust and expectation. Following my initial experience with the horses and claves, my interest lay similarly in the question of rhythm as a possible stimulus for a shared but uncertain dynamic. I also wondered how much the horses' apparent affinity to the beaten time signature depended upon their pre-existing bond to each other and to me, with whom they shared a daily habitual culture and high levels of familiarity and trust.

In 2021, I decided to explore these questions more fully in a second film. After the death of the older horse, Billy, I continued to play the claves with the younger mare, Cadi, whom I had known since she was foaled. Contrary to standard practices of horse rearing, Cadi was not forcibly weaned. She lived and learned alongside her mother for twenty years until the latter's death. I also introduced the claves to Cadi's new companion, another mare I called Cani, with whom I had a weaker bond of trust. I did not know much about Cani's early life except that she was at one point lashed to a telegraph pole. The radical horse communicator, Monty Roberts (1996) has described how his father's use of a standard way of breaking in horses, by tying them to fixed poles, triggered negative response patterns in young animals. I surmised that Cani's extreme wariness of humans resulted from similar traumas.

In the following account of my practice of clave playing with Cadi and her wary companion, Cani, I employ Roberts' (1996) concepts of "Advance

and Retreat" (p. 89) and "join-up" (p. 98), which he subsequently developed as a practice of support for horses and humans impacted by trauma. I also draw upon Humberto Maturana and Francisco Varela's (1980) biological theory of autopoiesis (self-creation), which emphasizes the autonomy of each organism's individual response. Maturana's breakthrough concept finds that it is not the external world determining the organism's vision but the organism's nervous system identifying what is to be known. His discovery coincided with the 1968 student revolt at the University of Chile and the revolt stimulated his conscious awareness that cognitive freedom is similarly located in one's own autonomy of perception.

Autopoiesis is circular and self-referring because the unique make-up of each organism determines its individual and autonomous response to the external stimulus it perceives to perpetuate the ongoing survival of its self-organisation (Maturana & Varela, 1980). In other words, autopoiesis is the autonomy of "knowing" (Leyland, 1988, p. 359). A living system is an "autopoietic machine" serving no purpose beyond its own maintenance, in comparison to an allopoietic machine such as a car (Maturana & Varela, 1980, p. 78). This stress upon individual autonomy (as opposed to individualism) runs counter to the historically Western tendency to subordinate individuals to grand narratives of improvement, in which Darwinian concepts are used to justify competition, inequality, discrimination, subjugation and slavery (Maturana & Varela, 1980). The individual autonomy predicated by biology is largely subsumed, Sylvia Wynter (Wynter & McKittrick, 2015) argues, by a global sociogenic system that is itself autopoietic in its self-perpetuation of white, Western homo oeconomicus at the expense of the poor and marginalised: A process she terms "dysselection" (Wynter & McKittrick, 2015, p. 37). Donna Haraway (2016) is critical of "autopoietic self-making man" (p. 47), favouring instead M. Beth Dempster's biological concept of sympoiesis (making with). Haraway does not fully engage, however, with autopoiesis as a concept to advocate for the biological, social, and cultural autonomy identified by Arturo Escobar (2017) as fundamental to the self-organisation of pluriversal alternatives to patriarchal, capitalist, modernity. In fact, an autopoietic living system is equally defined by its interactivity as its individuality, although "not all are equally desirable as systems in which an observer human may wish

to live” (Maturana & Varela, 1980, p. xxix). Knowledge is therefore relational (Maturana et al., 2016), and Caribbean and Latin American theorists citing Maturana’s concepts suggest that autopoietic alternatives are to be found in consciousness-raising through activism, communal access to other knowledge systems, and the transcultural power of rhythm. The self-organising principles of the Zapatista movement, for example, include *mandar obedeciendo* (lead by obeying), which respects the autonomy of other ways of knowing (Mignolo, 2011) while Wynter perceives that rhythm (language, cadence, music, and dance) resists the negation of the plantation and “indigenizes” people in relation to the Earth (Boyce Davies, 2015, p. 213). Maturana has increasingly applied autopoietic theory to the fields of education and child development with interdisciplinary colleagues. (Maturana & Cabezón, 2001; Maturana & Verden-Zöllner, 2008; Maturana et al., 2016), and autopoiesis is central to Maureen L. Leyland’s (1988) analysis of the change and stability paradox in non-hierarchical models of family therapy. These non-Western and educational perspectives provide a critical framework for my wider investigation of coadaptation emerging from the interface between cognitive creativity (autonomy) and dominant narratives of improvement. Drawing on these perspectives, I speculate that potential crossovers exist between my practice with the horses and my experience of the collaborative creative learning pedagogy currently developing in Wales (Donaldson, 2015) in contrast to England’s prescriptive teaching and accountability mechanisms. Bringing together larger bodies of knowledge, which intersect through my relationship with the horses, I use the musical concept of polyrhythm, which emphasises the generative capacity of

multiple overlapping, asymmetric rhythms, to articulate this practice in terms of wider ecology (Allen & Starr, 2017; Von Uexküll, 2010).

### AMANTES (LOVERS), 2020–2021: AN EXPLORATORY FILM PRACTICE WITH HORSES

In this account, I interpret various forms of languaging, including rhythm, gaze, body language, and positionality, that took place between the horses and myself during the making of the amalgamated film, *A amantes (Lovers)*,<sup>1</sup> 2020–2021. Vinciane Despret (2005) describes the particular intelligence of prey animals as being one of close attentiveness to each other’s movements. As this continual, spontaneous, group coordination ensures the rapid detection of predators, Despret suggests that prey animals might co-opt a human proposition as part of their social survival strategies in free and unforeseen ways. Eduardo Kohn’s (2013) semiotic analysis of multispecies relations in the Upper Amazon stresses the importance of “nonsymbolic” (p. 8) signs for human and nonhuman intercommunication. Following his analysis, I wonder if the horses might interpret my head-on, approaching body as a form that looks like a predator, in which case my body language might act as an iconic sign. Or might the horses perceive my averted posture as an indexical sign correlating with my bodily intention to yield to their responses? Rather than overly ascribe meaning to the horses’ responses that may be inaccurate or irrelevant to them, I propose to articulate my own feelings and impressions based on my memories of the filmmaking process and my perceptions of the film footage.

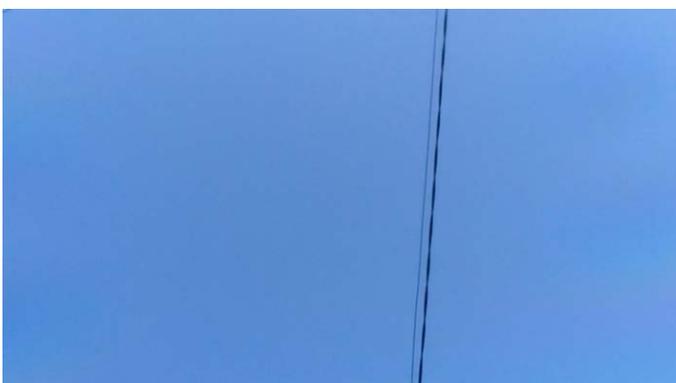


Figure 3. Our rhythms are captured in the shaky footage of sky, telephone wires and branches. Image from Morag Colquhoun, *Amantes (Lovers)*, 2020, video still.



Figure 4. Cadi’s body language is relaxed but Cadi’s body is tense and upright as if she is ready for flight. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.

In the first film, the light appears bright and crystalline (Fig. 2). The horses walk alongside me, off-camera, but our rhythms are captured in the shaky footage of sky, telephone wires and branches (Fig. 3) unintentionally filmed by my phone during sound recording. I was keen to develop this experimental approach, in which the upward facing camera documented the interactive shifts in movement between us and the environment rather than film the horses as objects with myself behind the camera. However, in the second film, I initially decided to use a chest harness to record the mares' first contact with the claves. As I approached the mares, the weather was cloudy and changeable. I wore my old coat that smelled of Cadi's deceased companions, her ancestral herd. Along with hands, hair and clave sticks, the frayed sleeves of my work wear stray down intermittently into the uneven footage produced by my body movements. The jolting, ragged quality of the second film reflects the nervous tension I experienced as I walked across the field towards the mares.

In the second film, Cadi's body language is relaxed: soft gaze, lowered head, a distinct twitching movement of her extended nose. But Cani's body is tense and upright as if she is ready for flight (Fig. 4). She expresses her unease to Cadi, who initially resists her chivvying. Then Cani runs off and Cadi joins her. I remember that I followed the mares to the brow of the hill, still beating the claves. Then without looking at them directly, I turned away. This communicative technique of lowered gaze and inclined body language is something I learned from Monty Roberts' (1996) account of "Advance and Retreat" (p. 89) inspired by Cherokee practices and his own

observations of wild mustang herds. Roberts, whose paternal grandmother and grandfather were Cherokee and Welsh respectively, observed how the dominant mare in a wild horse herd would repeatedly push out a transgressive youngster, then use her body language to invite the youngster back in. Roberts' uncle told him stories of how Cherokee people would similarly first pressurise then turn away from wild horses to capture them.

Once I turned away from the mares, I did not look back at them. I remember thinking: "It is up to them what they do now." In the film, it is not long before Cadi appears at my left shoulder (Fig. 5) although I have no memory of this. Perhaps because I did not notice her, Cadi reappears at my right shoulder where she settles (Fig. 6). I did notice her then and I felt moved that she had unexpectedly chosen to be close to me. I identify this feeling with Roberts' (1996) description of the "vibration" of emotion he experiences at "join-up" (p. 98), the term he uses to describe how even a wild or fearful horse will suddenly choose to stand close behind a human during a process of "Advance and Retreat" (p. 89).

In the ensuing film sequence, the camera turns as I look to the left where Cani walks away. Cadi has positioned herself so that I am now between the mares. Cani turns to circle back. She seems to want to be with Cadi. But Cadi has chosen to stand by me, and the claves. I lower myself to the ground and continue to play. This appears to reassure Cani who no longer feels the need for flight. She moves closer until both mares are standing beside me. Periodically, throughout the whole process, Cadi licks and chews her lips. Animal behaviourist Sue McDonnell (2019) suggests that licking



Figure 5. Still beating the claves, I turn away. Cadi appears at my left shoulder. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.

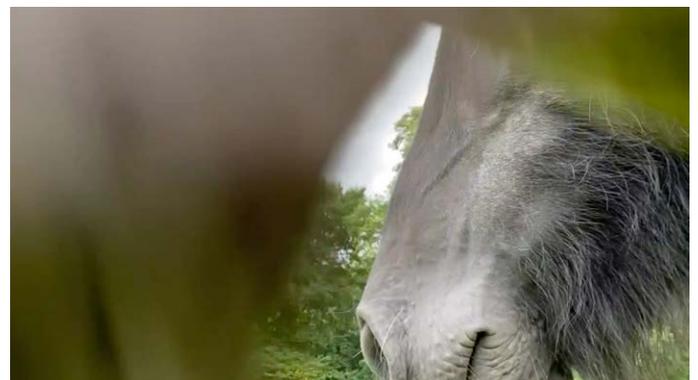


Figure 6. Cadi reappears at my right shoulder. She has chosen to stand by me, and the claves. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.

and chewing occurs when a horse's nervous system switches from sympathetic fight or flight to parasympathetic rest and restore. I wonder if Cadi is also performing this licking and chewing to reassure Cani. After a while, Cadi suddenly pushes her nose at the claves and knocks them away as if to say: "Enough now!" (Fig. 7). For the second time, I found that an unexpected expression of Cadi's will triggered a positive vibration of emotion in me. The first time was when she chose to stand close to the claves. The second time was when she knocked them away. The claves rested on the ground while the horses stood quietly beside them. In response to Cadi's action, I decided to leave it for the day.

When I walked along the lane with the mares and the claves on the following day, our shared rhythm, captured by the upward facing camera, initially seemed jerky and hesitant. As with the old horse, Billy, Cani would usually lag behind while Cadi pulled ahead. But after a while, the film footage captures our transition into forward impulsion and connectedness as both mares begin to walk in step alongside the claves. In full swing, the mares suddenly stop at the sight of some human campers. Agitated, the horses turn restlessly into the camera frame as they listen to the human voices before walking on again. On the bridge, the film records the mayflies above our heads. Unperturbed by the claves, they follow their own rhythms (Fig. 8). As we walked along, I felt as if something had shifted in my relationship with the mares. Given the autonomy of choice, Cani wanted to stay in the field away from the claves. But following Cadi's decision to join me, Cani seemed to overcome her fear, which I knew from experience she could express quite violently if under pressure. I perceived the mares' unified response to the claves as an active

softening or two-way yielding that affected me in return. The film's soundtrack reveals how the mares do not just bear the claves: they ameliorate the claves. Reviewing the footage, I can hear that my initial playing is fast, frenetic and jerky, as if I am nervous and stressed. Then, the mares' pace softens the 5/4 rhythm into a relaxed fluidity: I am no longer beating a rhythm at them, I am making rhythm with them. Our shared rhythm depends upon our mutual positioning which I connect to Maturana's (2016) ideas of autopoiesis. In describing the autopoietic nature of living systems, which respond either positively or negatively to outside stimulus or perturbation. Maturana stresses the importance of autonomous attraction or amans (love) to "spontaneous relational dynamics" (p. 36) and "structural coherences" (p. 28) between organisms and their niches (Maturana et al., 2016). If rhythmic attraction can be described as amans, we are amantes: lovers of rhythm.

I understand that my relationship with the horses rests upon historic and ongoing power imbalances of land enclosure, subjugated labour and domestication, in which humans and non-humans are segregated by "techniques of alienation" (Tsing, 2015, p. 19). From this perspective, I might view Cani's resistance in terms of an ongoing "conflict zone" (Wadiwel, 2018, p. 540) where domestic animals are coerced by humans into "bringing animal labor time in sync with the rhythms of productive processes" (p. 529). Alternatively, I might think of Cadi's apparent willingness to be "available" (Despret, 2004, p. 123) in terms of "noninnocent bonds of respect" (Despret & Meuret, 2016, p. 25) between domesticated animals and humans, which might contribute to alter-politics as envisaged by Ghassan Hage (2012). Donna Haraway



Figure 7. I lower myself to the ground and continue to play. This appears to reassure Cani who no longer feels the need for flight. Cadi knocks the claves away with her nose. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.



Figure 8. On the bridge, the film records the mayflies above our heads. Unperturbed by the claves, they follow their own rhythms. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.

(2008) describes such interspecies *respecere* as a “kind of active looking” and as “autonomy-in-relation” (p. 164). Hage (2012) points out that there is no clear binary between anti-politics, which resists the current order, and alter-politics, which looks to the other for new ways of being. Likewise, the horses’ resistance or orientation to the human is never clear cut. But despite the inevitable trappings of restraint and control that began when I handled her as a foal, I have noticed that the more I acknowledge Cadi’s autonomy, the more keenly she responds. Drawing on the work of Arthur Koestler (1967), ecologists T. F. H. Allen and Thomas B. Starr (2017) describe the two-way exchange of information between an organism and its environment as a holon and the unique structure of its organisation as its essence: “The reason a foal knows what to do with its mother, when it has never seen any horse before, is that its essence has seen it before and tells the foal what to do” (p. 55). As it undergoes the process of domestication, the foal learns to respond to the dynamic rates and boundaries placed on its existence. For the human domesticator, the challenge is even to begin to approach, let alone fathom, the “bounded infinity” of the foal’s essence (Allen & Starr, 2017, p. 147). While the two mares share biological attributes common to their species, their contrasting life stories and previous interactions with others have presented them with different stimuli that shaped their current reactions. Jacob von Uexküll (2010) foreshadowed Maturana and Varela’s (1980) concept of autopoiesis when he proposed in 1934 that a subject’s *umwelt* (environment) is a construction of its own specific sensory make-up. He suggested that each animal has a magical path only apparent to itself that can be either innate or learned. A larva knows it must pre-emptively make a path through a tender pea long before it exits the hardened pea as a transformed weevil. On the other hand, a hen sees an imaginary enemy that prevents her from feeding after a previous scare in the same location. A stimulus does not and cannot cause an organism to change, argue Maturana and Varela (1980), but is rather a “source of deformation” (p. 120) that triggers an accommodating reaction, whether positive or negative.

For me, the film’s profound moment comes with Cani’s apparent acceptance of the claves following Cadi’s “join up” (Roberts, 1996, p. 98). If the antithesis of autopoiesis is the disintegration of the living system (death) (Maturana & Varela, 1980) and if, as Roberts (1996) suggests, it is a potential death

sentence for a flight animal to be left alone, then Cani makes the choice to stay with the herd, as represented by Cadi. Thus, the horses and I enter into a state of “behavioural coupling” that is both “communicative” and “consensual” (Maturana & Varela, 1980, p. 120) in the sense that I may trigger reactions in the horses but I cannot determine how they react. Looking back at the film as observer, I perceive that for each of us, there are times when our sympathetic fight or flight nervous system predominates and there are times when our parasympathetic nervous system kicks in. Cadi, in particular, seems more inclined to the latter, which allows her to process stimuli with more ease than Cani. Maturana and Varela (1980) stress that stimuli, including language in its broadest sense, are always actively received by the organism, which interprets what it needs to know for its ongoing survival. In stressing the active role of the “receiver,” Maturana and Varela (1980, p. 32) describe language as connotative (emotional, contingent) rather than denotative or purely informational. Although the two mares had different reactions, I feel that the same principle applied: after my initial challenge, the less I pressed them to accept the claves, the more they seemed to engage.

### **COMPARING A FILM PRACTICE WITH HORSES AND A NEW PEDAGOGY OF CREATIVE LEARNING IN WALES: A PRELIMINARY RESPONSE**

The horse-human practice of “Advance and Retreat” (Roberts, 1996, p. 98) described earlier seems to bear comparison with the change and stability paradox identified in family therapy by Leyland (1988), in which the more one implies something should be different, the more it stays the same and the less one implies something should be different, the more likely it is to change. In response to this paradox, Leyland suggests that therapists might use connotative rather than directive language and treat families as autonomous, self-referring autopoietic systems that can only change themselves. In the Milan model of systemic therapy, the therapist sees herself as “triggering” (Leyland, 1988, p. 365) responses in the family rather than directing them: “The therapist’s task becomes that of facilitating the establishment of a new consensual domain that allows the family to draw new

maps for itself and go on its way, even if this means different members going in different directions, e.g. young adulthood” (Leyland, 1988, p. 367). I connect this to the non-directive attentiveness to the other inherent in Despret’s (2004) idea of animal-human “proposals” (p. 122) and in Haraway’s (2008) concept of “respect” (p. 19) in interspecies relationships. Maturana and Verden-Zöller (2008) maintain that dominant Western culture is permeated by mistrust, linear causal thinking, and mechanisms of control, which deprive children of the opportunity to participate in everyday systemic relationality. I argue that this description could equally be applied to standard methods of horse rearing and conventional systems of education. In his analysis of the rhythms of dressage, Henri Lefebvre (2004) compares the breaking in of horses, through repetition, duration, punishments and rewards, with the altered, educated rhythms of the child. Maturana and Cabezón (2001) envisage the future school as an autonomous learning space, which allows relational behaviours of trust and mutual acceptance to be triggered at the level of the whole body and nervous system. Their expectations of enhanced enthusiasm, creative learning, responsibility and self-assessment resonate with my recent experience of the Welsh education system where Professor Graham Donaldson (2015) found strong evidence of desire for more autonomy among teachers and pupils. The pedagogy of creative learning developing in Wales in partnership with Creativity, Culture and Education (CCE) is underpinned by research into the efficacy for all pupils of a flexible, collaborative “high functioning learning space” (Arts Council of

Wales, 2020, p. 1) in which activities are authentic (rather than contrived), processes are highly visible (rather than hidden), emotion is acknowledged (rather than ignored), and the teacher’s role is challenging (rather than guiding). In contrast, the restricted, guided, low-functioning classroom model adopted in many education systems only allows certain pupils to succeed. Commenting on its new national scheme, the Welsh Government (2018) found that the strongest impact of creative learning was increased parity between pupils from disadvantaged backgrounds and their peers.

Like many creative practitioners working in Wales from 2015 to 2022, I became involved in developing creative learning with pupils and teachers in the Lead Creative School Scheme. In one project I facilitated as a creative agent, a group of academically under-achieving boys at Cefn Saeson Comprehensive School were presented with a proposition to self-direct their own filmmaking project. The boys recruited acting and filmmaking practitioners with whom they co-developed, along with their schoolteachers, pedagogical practices of creative learning, including regular play and physical movement, open-ended, flexible and collaborative learning, creative habits of mind, a celebratory presentation to the community, and triangulating forms of self-evaluation. This made the boys’ project, in their head teacher’s words, sector breaking practice. Their film, *Path to Glory* (2017), was later showcased at Tate Modern, London in 2018. The boys’ autonomy was crucial to the success of the project on multiple levels. It expressed itself as resistance and disruption followed by passionate storytelling, a love of outdoors, sport, physicality, unexpected aptitudes for acting, the honing of technical skills, improved literacy grades, increasing self-organisation, and a lively space of critique, boundary pushing, unabashed euphoria, and self-reflection. Raymond Williams (2003) suggests that an adherence to rhythm is at the basis of speculative creative practice, in his case the vernacular English language of the Welsh border. I conclude that the Welsh education system’s adjustment to creative learning gave the boys in this instance the autonomy to speculatively use their own language (the vernacular English of the post-industrial South Wales Valleys), their own way of “knowing” (Leyland, 1988, p. 359), their energy and physicality: in effect, their own rhythm.



Figure 9. *Amantes (Lovers)*, YouTube playlist of wider contexts of the 5/4 rhythm. Image from BBC Cymru, *Tradition of the Mari Lwyd*, 1966, video still.

## CONCLUSION: PRACTICES OF POLYRHYTHMIC COADAPTATION

Out of the ragged, disjointed, uneven and unpredictable uncertainty of situations in which a proposition is set out and let go comes the capacity for recursive reflection in “the domain of self-observation” Maturana and Varela (1980, p. 121). I speculatively set out with the 5/4 rhythm on the basis that I wanted to share it with the horses and to use it to explore my own auto-poiesis. But I did not know where it would take me.

Bringing together apparently disparate musical traditions, I mashed up Tito Puente’s *Take Five* with a BBC Cymru archive film, *Tradition of the Mari Lwyd* (1966), and was obscurely gratified when the Latin rhythms synched with the Welsh language singing. In the South Wales Mari Lwyd folk ritual, a party of men lead a hooded man wearing a horse skull mask around the neighbourhood to sing improvised rhyming battles with householders. I knew that my great-grandfather practiced this custom keenly while his son, my grandfather, was a renowned horseman. To my surprise I discovered that the Mari Lwyd bears a family resemblance to Horse Head, a horse skull masked figure in the Jamaican masquerade, Jonkonnu, who dances to a 5/4 beat. Both traditions encompass rhythm, communalism, improvisation, and misrule. For Sylvia Wynter (1970), “folklore was the cultural guerilla resistance against the Market economy,” (p. 36) and she suggests that Jonkonnu came out of cultural fusion between enslaved Africans and British indentured servants. In her analysis of Jonkonnu, Wynter draws on the West African perspective of Leopold Sédar Senghar (first president of Senegal, 1960–80) who once remarked “the poetic truth is identified, here, with the scientific truth, for which the being of the being is energy that is to say rhythm” (McKittrick et al., 2018, p. 870).

I assembled a YouTube playlist (Fig. 9) of wider, transatlantic, cultural contexts of the 5/4 rhythm, from Wales to North America, West Africa and the Caribbean. In one interview, Dave Brubeck (2009) describes how his upbringing on a cattle ranch in California led to the game-changing 5/4 time signature of *Take Five*:

We started talking about *Take Five* with a horse. It’s one, two and three, and four, five ... If you’re on a 45,000 acre ranch and you’re sent to pump

water someplace, you ride miles before you get to the engine and the water tank ... Instead of just being bored, I would listen to all the different rhythms around me. The gasoline motor was one source, the horse was definitely a source, cause you put another rhythm against the horse’s beat, gait, against the gait of the horse. (1:32-5:04)

In the sleeve notes to the Brubeck Quartet’s album, *Time Outtakes*, however, his son, Dan Brubeck (2020), also notes that drummer, Joe Morello, used to play around with 5/4 rhythms at sound checks. Furthermore, the five-beat rhythm that sounded so radical to late 1950s jazz audiences corresponds to the typical Afro-Cuban son clave of West African origin. Musing on jazz in relation to his African-American heritage, Ralph Ellison (2001) recalls the “ecstasy of rhythm” (p. 9) of his Oklahoma youth “when water-melon men with voices like mellow bugles shouted their wares in time with the rhythm of their horses’ hoofs” (p. 13).

The film *Amantes (Lovers)* records the overlapping polyrhythms of horses’ hoofs, clave sticks, flapping sleeves, swishing tails, flies, telephone wires and trees: the latter moving more slowly than the rapid passing of lower vegetation as the camera lurches and swings in time to my beating hands and ambulatory movements (Fig. 10). Anna Tsing (2015) calls for the abandonment of the monotonous biorhythms of commercial farming originating from the plantation. Instead, we should seek polyphonic assemblages where different temporal cycles overlap, shift and sustain the whole. Applying musical theory to ecology elucidates the harmonious yet disparate nature of organisms and environments that have very different biological or physical rhythms. Von Uexküll (2010) describes how the “point” and



Figure 10.. Polyrhythms: trees move more slowly than the rapidly passing lower vegetation. Image from Morag Colquhoun, *Amantes (Lovers)*, 2021, video still.

“counterpoint” (p. 173) of the oak tree’s leaf canopy capturing the physical drop patterns of raindrops creates a contrapuntal harmony of common meaning. Allen and Starr (2017) define the poly-rhythmic nature of ecological systems in terms of scale. Each point of two-way information between an organism and its environment (holon) has a rhythm, a natural frequency or cycle time, which is the time taken for equilibrium to be restored following energetic input. Rhythms exist in a hierarchy of scale, with longer cycle times oscillating more slowly: a rock for example, a forest, or a river, as opposed to a tiny insect, a biological cell or even a human life cycle. In ecological systems this means that the faster cycling time of organisms might play polyrhythmically against the slower cycling time of their niches. Mayflies live for a single day above the river that sustains their lifecycles. Trout jump to feed upon them: each a different splash of scale and tempo. Similarly, if the film *Amantes (Lovers)*, is played in a loop beside the longer YouTube playlist,<sup>2</sup> then the faster cycling video will play polyrhythmically against different sections of the slower cycling playlist. Sometimes this results in aural or visual synchronicity and sometimes the effect is one of dissonance. These endlessly variable configurations enable me to think about my relationship with the horses against wider patterns of planetary interconnection, cultural appropriation, domination, subordination, empire, speciesism, survival and amans (love) (Maturana et al., 2016).

In conclusion, I feel that the horses responded positively to the 5/4 rhythm when it matched the pace of their own walking, but this was dependent on their individual autonomy rather than my coercion. The film shows how my averted gaze leads to “join-up” (Roberts, 1996, p. 98) with Cadi, whose responding soft gaze encourages her wary companion, Cani. I identify this mutual yielding as amans (love): the spontaneous relational dynamics that emerge when humans cede their control of other beings (Maturana et al., 2016). I conjecture that a similar space of autonomy allowed a group of resistant boys to self-organise in a creative learning project facilitated by the new curriculum for Wales. These practices address the change and stability paradox identified by Leyland (1988) in the sense that the less the artist or educator implies that something should happen, the more likely it is to emerge. *Amantes (Lovers)* also captures a wider, defocused polyrhythmic space on film, which I liken to my speculative journey through YouTube algorithms with horses, Welsh

language culture, and Afro-Cuban claves. In *Steps to an Ecology of Mind*, Gregory Bateson (1972) suggests that the self-correcting feedback loops of the total mind are neglected when purposeful consciousness is compartmentalized, leading to a loss of systemic wisdom. *Amantes (Lovers)* addresses this through use of the soft eye as articulated by horsewoman Sally Swift (1985): “You are aware of the whole, not just separate parts . . . you must ‘let’ not ‘make’ anything happen” (pp. 11, 48). The dynamic functioning of polyrhythm reveals that asymmetric differences between the parts are equally important to the whole. In developing these practices, I am neither a mare nor a teenage boy. In terms of age, gender, species, individual life experience and positionality, we are asymmetric. As with the 5/4 son clave, this asymmetry has the potential to be generative. Lefebvre (2004) describes polyrhythmia as a refusal to be separated by difference: “Polyrhythmia always results from a contradiction, but also from resistance to this contradiction” (p. 105). However, as Lefebvre adds, the polyrhythmia of the self in relation to the other might alternatively break down into arrhythmia, as I experienced with the wary horse, Cani. The horses and the boys were presented with propositions, echoing Despret’s (2004) animal-human “proposals” (p. 122), in which the processes were relational and the outcomes were uncertain. If autonomous attraction or amans (love) (Maturana et al., 2016) was in play, then a dynamic relationality might proceed. I describe this practice of contingent, autonomous, two-way, asymmetric yielding (in both senses of the word) as polyrhythmic co-adaptation.

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## ENDNOTES

**1** aAmantes (Lovers), 2020–1, video, 17 min 17 sec. <https://www.youtube.com/watch?v=Xz57W171-pw>

**2** Amantes (Lovers), YouTube playlist. [https://www.youtube.com/watch?v=G\\_xFo6Hifzk&list=PL9n-LUrQLGZgdknWC39F45javzmZkQIUka](https://www.youtube.com/watch?v=G_xFo6Hifzk&list=PL9n-LUrQLGZgdknWC39F45javzmZkQIUka)